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**An Integrated Approach to  
Export Performance Assessments**

By  
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In fulfilment of the requirements for the degree of PhD

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**To my family  
for their unremitting support**

## ABSTRACT

The importance of export performance measurement has long been acknowledged in the literature and various conceptualisations of export-related behaviours have been linked to performance variables. From a research perspective, such emphasis on performance aims to explain *why* some firms are more successful than others in the export front and seeks to develop empirically-based guidelines on *how* exporters could perform better than they do. From a business perspective, sound measurement of export performance is essential for managers to be able to evaluate the impact of their decision making and therefore assess the extent to which their firms' export objectives have been attained.

Despite the acknowledged importance of the export performance construct, its delineation and operationalisation have been particularly problematic. Specifically, while it has been generally agreed that the notion of export performance cannot be adequately expressed by any single performance indicator, consensus has yet to be reached regarding *what* aspects of performance should be measured, *how* they should be measured and *why* do it in a specific way. Lack of agreement on these issues has resulted in the use of an array of different export performance indicators among researchers (often selected on an *ad hoc* basis) and, in turn, in inconsistent findings concerning the determinants of export success. Overcoming this problem necessitates a conceptualisation of export performance capturing diverse aspects of export success and the development of valid measures capable of facilitating inter-firm comparisons. In this context, the development of an operational framework for the measurement of export performance needs to incorporate insights from the interdisciplinary literature on performance measurement, as the latter is generally more advanced than existing export-related work. For instance, with few exceptions, past export studies have not adjusted their performance measures to take into account the issue of multiple export objectives. However, (i) firms may be pursuing more than one export objectives, (ii) both the number and the importance placed on those objectives may differ across firms (and within the same firm over time), and (iii) trade-offs in the achievement of different export objectives are likely to influence the evaluation of export success.

The present study develops a comprehensive framework for understanding, measuring and interpreting export performance, by integrating insights from the exporting, operations management, accounting, strategy, marketing performance and operational research literatures. It aims to answer questions related to the specification of export objectives (in terms of importance), their translation into operational performance indicators (in terms of the frame of reference and time horizon underlying any export objective's assessment) and the interpretation of export performance. The framework's key underlying premises are that, at any one time, (i) different exporting firms follow strategies aimed at different export objectives, (ii) within a firm, different objectives have differential importance, (iii) any export objective can be measured by different export performance indicators, (iv) export firms' performance assessments may differ depending on the relative emphasis placed on the frame of reference and time frame employed when assessing the attainment of any export objective, v) interpretations of export success need to incorporate export managers' (subjective) evaluation of the actual attainment levels. Based on these premises, a composite measure of export performance is constructed, enabling valid performance comparisons to be undertaken among firms. Furthermore, the study highlights the influence of contextual factors on different aspects of export performance assessments namely, the relative importance of export objectives and the mode of assessment employed (i.e. the relative emphasis placed on the frame of reference and time horizon), by linking export-, company-specific, environmental, management- and performance-related factors to the assessment of export success.

Methodologically, the study (i) adopts a formative approach to measuring export performance which -unlike previous research- allows for explicit modelling of complementarities and trade-offs among objectives, (ii) operationalises the conceptual framework with the Analytic Hierarchy Process (AHP), the versatility of which enables the incorporation of managerial judgement in performance assessments and (iii) explores the utility of on-line data collection tools in export research by employing e-mail- and web-based questionnaires to survey exporters.

In summary, the proposed performance framework provides both theoretical insights on the complex issue of export performance assessments and operational guidance to researchers and export practitioners for measuring export success by (a) linking

performance dimensions with both export objectives and performance indicators so as to aid export measure selection, (b) suggesting a framework that helps translate any export objective into indicators and facilitate performance assessments as well as (c) offering a composite measure of export performance that allows valid cross-firm performance comparisons to be made even when multiple (and even conflicting) export objectives are pursued. In addition, the proposed composite measure may assist export managers in evaluating and comparing the relative success of their firms' export marketing strategies thereby contributing to successful export marketing strategy planning.

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## **CHAPTER 1**

### **INTRODUCTION**

## 1. Introduction

This chapter introduces the issue of export performance assessments; it explains the rationale and objectives of the research undertaken and outlines the theoretical, methodological and managerial contribution of this study.

### 1.1 Research rationale.

Export performance has been defined in terms of “the composite outcome of the export sales of the exporting company” (Shoham, 1991, p.10), or more comprehensively as reflecting the outcomes of export behavior under firm-specific and environment-specific circumstances (Diamantopoulos, 1998). It is evident from the above that the construct’s conceptual definition is intentionally broad and refers to the *composite* outcomes of a firm’s activities in its export markets (Shoham, 1991, 1998; Diamantopoulos, 1998, 1999). Export performance has long been of central interest in the international marketing literature since it is associated with economic growth and prosperity for both a firm’s and a country’s economy (Thach and Axinn, 1994). Various conceptualizations in export research have been linked to performance variables (e.g. Madsen, 1994) while several empirical studies have justified a specific business behavior, by associating the latter to higher export performance (e.g. Cadogan and Diamantopoulos, 1998; Cadogan et al., 2002b). However, export-related studies have focused primarily on the *determinants* of export performance (e.g. see Aaby and Slater, 1989; Gemünden 1991; Chetty and Hamilton, 1993; Zou and Stan, 1998, Leonidou et. al., 2002 for relevant reviews) rather than the construct itself. Despite “the central importance of performance in any discussion about strategy including international strategy” (Shoham, 1998, p.60), it is only relatively recently, that studies focusing explicitly on the delineation (i.e. conceptualization and operationalization) of the construct, have appeared in the export marketing literature (e.g. Al-Khalifa and Morgan, 1995; Matthyssens and Pauwels, 1996; Diamantopoulos, 1999; Katsikeas et. al., 2000; Sousa, 2004). Even more recent are attempts to empirically develop psychometrically sound measures of export performance (e.g. Cavusgil and Zou, 1994; Zou et al. 1998; Shoham, 1998; Styles 1998; Lages and

Lages, 2004) and thus, overcome the measurement deficiencies of much performance-related research in the exporting field (Gemünden, 1991).

The importance of a sound measure of (export) performance stems from the fact that “without a performance referent managers cannot objectively or consistently evaluate the quality of their strategic decisions” (Chakravarthy, 1986, p.437). Indeed, research shows that companies with sound performance measurement systems outperform those organizations that are less disciplined in this respect (Lingle and Schiemann, 1996). In addition, researchers often consider export performance to be a dependent variable of primary interest, since it reflects their desire “to understand WHY some firms are more successful than others, in the hope of identifying some attributes or characteristics which can be recommended to policy makers and firms” (Thach and Axinn, 1994, p.2, emphasis in original). Consequently, “when studying success determinants in export marketing, a valid and reliable measurement of export performance is critical” (Matthyssens and Pauwels, 1996, p.85).

The above considerations raise the question of the “correct” conceptualization and operationalization of export performance. This has been a particularly problematic issue in the literature as evidenced by difficulties in identifying appropriate dimensions of export performance and lack of agreement on appropriate measures for its study (Katsikeas et al., 2000; Sousa 2004). Specifically, although there is a consensus in the literature that export performance is “multifaceted and cannot be captured by any single performance indicator” (Diamantopoulos, 1998, p.3), there is a lack of consistency in the measurement of export performance since “researchers use a variety of measures, most of them even without mentioning the rationale behind” (Matthyssens and Pauwels, 1996, p.85). As a result, the evidence and knowledge we have about the determinants of export success is largely fragmented and often conflicting (Cavusgil and Zou, 1994; Zou et al., 1998).

The lack of a broadly accepted export performance measurement framework is a problem that causes stagnation in theory advancement in the relevant literature (Zou and Stan,

1998). To address the foregoing problem three *key* issues need to be considered. Firstly, an important issue is the scant attention paid to the export *objectives* pursued by firms. Indeed, it has been noted that "goals differ among firms, and therefore, the goals of one firm may not be valid from another...Export performance goals must be defined individually for each firm and will often be multidimensional" (Madsen, 1987, p.183). The reason for this is that "exporting is a strategic choice for a firm. Therefore, the role and expectations of exporting can vary widely from one firm to another, even with firms with the same intensities or volumes of sales from exporting" (Thach and Axinn, 1994, p.9). Consequently, both the specific number and the particular combination of export objectives that is pursued can vary from firm to firm; some objectives may be more or less common to all firms, while other objectives could be unique to the individual firm. Moreover, the exact content of the "objective function" within a firm is not necessarily constant over time but subject to change, because "as strategic objectives are achieved, new ones are formulated; new actions are required to achieve the objectives and new measures are needed to encourage and monitor those strategic actions" (Dixon et al., 1990, p.2). Hence, the *relative importance* of objectives is also likely to differ across firms (Campbell, 1977; Pennings and Goodman, 1977; Hannan and Freeman, 1977; Mathysens and Pauwels, 1996; Otley, 1999) and within the same firm overtime (Dixon et al., 1990; Euske et al., 1993; Simons, 1995). With regards to the latter point, it has been also reported in the New Product Development (NPD) literature that within a product's life cycle, "measuring aspects of product performance were more important in the short term (at one quarter of the life cycle), whereas measuring customer and financial impacts were more important in the long term" (Griffin and Page, 1996, p.493). Furthermore, it has been acknowledged in the literature that there can be *conflicting* relationships (*trade-offs*) among the different objectives a firm focuses on (Banks and Wheelwright, 1979; Chakravarthy, 1986; Kaplan and Norton, 1992); such trade-offs in the performance of the various objectives may apply in the exporting context as well (Styles, 1998; Diamantopoulos, 1999). Bearing in mind the above, it becomes clear that the issue of export objectives has to be explicitly considered in any export performance assessment framework.



Secondly (and related to the previous point), is the inadequate attention researchers paid to the *translation* of export objectives into export performance measures that can lead to inconsistencies (i) among studies in terms of the selection of the performance measures employed (Diamantopoulos, 1998; Katsikeas et al., 2000) and (ii) between researchers and export practitioners in terms of the measures used to assess the achievement of export objectives (Matthyssens and Pauwels, 1996). First, the fact that any export objective could be measured by different export performance indicators can result into different performance interpretations and conflicting research findings (Cavusgil and Zou, 1994; Zou and Stan, 1998; Katsikeas et al., 2000); even more so, when there can be *interrelationships* (complementarities and/or conflicts) among the performance indicators adopted to assess the attainment of company objectives. Such interrelationships among performance measures are noted in the relevant interdisciplinary literature (e.g. Buzzel and Gale, 1987; Eccles and Pyburn, 1992; Szymanski et al., 1993; Bhargava et al., 1994; Meyer and Gupta, 1994; Ittner and Larker, 1998a; Hauser and Katz, 1998; Clark, 1999) and are also likely to apply to the export sphere as well (Diamantopoulos, 1999). Second, the lack of attention paid to the translation of export objectives into performance indicators may hide the fact that there can be inconsistencies between the measures export researchers employ and those export managers use in practice. Specifically, in most studies, export performance measures have been “imposed” by the researcher(s) on the respondents (i.e. typically managers are asked to indicate their firm's/venture's performance on a set of indicators provided by the investigator). For example, there have been recently developed several psychometrically sound composite measures of export performance (e.g. Cavusgil and Zou, 1994; Styles, 1998; Zou et al., 1998; Shoham, 1998; Lages and Lages, 2004), where the selection of the measured variables was determined by the researchers rather than the respondents. However, it is by no means certain that the measures practitioners use to assess export performance are the same as those favored by academics (Matthyssens and Pauwels, 1996; Ambler and Kokkinaki, 1997). Indeed, recent exploratory research into managerial “maps” of export performance (i.e. the managers' subjective perceptions of reality in connection with export performance) revealed that these “are often very static, narrow and short-term oriented” (Madsen, 1998, p.91). The latter view reflects an efficiency-oriented perspective in performance

assessments (Lages and Lages, 2004), which is clearly at odds with recommendations in the literature arguing for a dynamic, multi-faceted and long-term (effectiveness) perspective (e.g. Al-Khalifa and Morgan, 1995; Mathysens and Pauwels, 1996; Katsikeas et al, 2000). Such inconsistencies among performance measures used by academics and managers seem to be also evident in a NPD context where suggestions have been made for researchers to conform more closely to the measurement practices of practitioners (Griffin and Page, 1996). In this context, one could argue that success is actually "both particular, against specific objectives and subjective, in the sense of who selects which goals and which performance benchmarks" (Ambler and Kokkinaki, 1997, p.665). In light of the above, the *translation* of any given set export objectives into performance measures becomes an important issue that an export performance assessment framework needs to address in order to ensure that valid cross-firm performance comparisons are made.

Thirdly, given that a company's performance is "a reflection of its decision-making in relation to strategic objectives, markets and a whole range of internal and external circumstances" (Brown and Laverick, 1994, p.89), *contextual* variables (e.g. organizational and environmental factors) need to be explicitly considered in performance assessments (Neely et al., 1995; Evans, 2004). Indeed, contextual variables have been found to be strongly associated with a firm's planning goals (Ambler and Kokkinaki, 1997) and are, therefore, also likely to affect the assessment of the achievement of such goals (Kokkinaki and Ambler, 1999). For instance, it was suggested that firms' performance assessments should take into consideration differences in industry (market) conditions and the particular strategy employed by a firm (Lenz, 1981). Failure to do so is likely to hide both the fact that "any strategy occurs in a dynamic environment" (Thach and Axinn, 1994, p.10) and the fact that environmental variables "can be expected to have a great impact on export performance" (Madsen, 1987, p.183).

## 1.2 Research aim and objectives.

Exporting "has traditionally been the most popular mode of international market entry, favored especially by small and medium-sized firms" (Leonidou et al., 2002, p.51). Given the importance of exporting for the world trade (see Katsikeas et al., 2000; Kaleka, 2002; Balabanis et al, 2004) and the complex nature of the export performance construct, the present study seeks to address "one of the thorniest yet most fascinating issues in export marketing research" (Mathyssens and Pauwels, 1996, p.108). Specifically, this study aims to develop and test a new measure of export performance that overcomes such limitations as those outlined above. To do so, the study integrates insights from the interdisciplinary performance measurement literature and applies them to exporting. The export performance framework proposed in this study is aimed to constitute a flexible and comprehensive approach to the assessment of export success. Flexible in terms of allowing the assessment of any given set of differentially important (financial and non-financial) export objectives; comprehensive in terms of taking into account any possible mode of assessment (i.e. frame of reference and time frame) that might be employed to evaluate export success. The purpose is to facilitate the conduct of valid cross-firm success comparisons when multiple and even *conflicting* objectives are pursued. To be able to test the proposed framework, the study seeks to generate empirical evidence to:

1. Determine the relative *importance of export objectives* incorporated in export performance assessments.
- 2a. Determine the relative *emphasis* placed on the *frame of reference* (competition vs. own plan) when translating objectives into operational performance indicators.
- 2b. Determine the relative *emphasis* placed on the *time horizon* (long vs. short term) when translating objectives into operational performance indicators.
3. Identify *contextual factors* that are likely to influence the evaluation of export success in terms of the relative importance of the export objectives pursued and their translation into export performance indicators.

The development of the export performance assessment framework considers key issues relating to the measurement of export performance that so far, have not been tackled adequately in the export literature. First, the framework addresses the problematic area of export objectives. To be specific, the underlying assumptions of the framework are that: (1) export firms can have multiple objectives, (2) the importance of such objectives may vary within and between firms, (3) any export objective can be measured by different export performance indicators and (4) managerial assessments (subjective interpretations) of export performance need to form an integral part of any measurement scheme aimed at evaluating export success. Second, the proposed conceptualisation links contextual characteristics to key aspects of export performance assessments such as the frame of reference and the time horizon employed. By doing so, the framework helps understand likely differences in the assessment of a given set of export objectives and also explain *differential* interpretations of export achievement (success/failure). Finally, a composite measure (index) is constructed based on a formative definition of export success. The proposed formative scale serves the assessment of multiple and conflicting (financial and non-financial) export objectives as well as enables the conduct of valid export performance comparisons between export firms (see also section 1.3 below).

The operationalisation of the conceptual framework is achieved with the adoption of the Analytic Hierarchy Process (AHP) methodology (Saaty, 1980), a tool that has been used extensively for multi-criteria problem solving and decision-making. The AHP deals effectively with the issue of the relative importance of multiple export objectives in the context of export performance assessments.

### **1.3 Intended Contribution.**

This is a pioneering study in many respects. Specifically, the study guides researchers both conceptually and operationally regarding the measurement of export performance. First, the study sheds light into the largely under-researched issue of export objectives. The proposed framework takes into account the fact that firms may pursue multiple export objectives and answers questions about their relative importance. In addition, the

study helps researchers assess any given set of objectives by establishing a linkage between export objectives and performance indicators. The framework acknowledges that the performance assessment of any export objective may differ depending on the relative emphasis placed on the frame of reference and time frame used and facilitates the translation of any export objective into different indicators. The framework leads to a composite measure (index) of export performance that allows valid cross-firm export success comparisons to take place even when assessments involve multiple objectives exhibiting trade-offs between them. The proposed measure could also be used to trace the contribution of any of the export objectives assessed to the export firm's overall success. The fact that this composite export measure is proposed to serve the conduct of valid inter-firm export success comparisons suggests that the former should be particularly useful when researching the drivers of export success (Matthyssens and Pauwels, 1996).

Second, the study provides important information concerning the interaction between export firms' performance assessments and the environment (internal and external). The environmental factors are well documented in the literature as having an impact on export markets (e.g. Raven et al, 1994), managerial decision-making (e.g. Achrol and Stern, 1988) and the formation of planning goals (e.g. Ambler and Kokkinaki, 1997). Bearing in mind that export performance represents the outcomes of export behavior in different organizational and environmental conditions (Diamantopoulos, 1998), this study links export performance assessments to the context within which assessments take place. Specifically, the study offers insights regarding various contextual (export-, company-, management-, environment- and performance-related) variables that can be related to how export firms evaluate the achievement of their export objectives. In this respect, the study is in line with recent work in the field arguing for the need to adopt a contingency perspective in export measure selection so as to accommodate for the context-specific impact on assessments of export performance (Katsikeas et al, 2000).

Third, this study offers important empirical data on how export managers (as opposed to academics) approach the assessment of performance and why. Following recent calls for the development of better marketing performance metrics (Marketing Science Institute,

2000), empirical knowledge regarding what aspects of performance firms strive to maximize and how they evaluate success is necessary for the development of better measures of performance as well as marketing strategies (Clark, 2000). The thesis is thus, in line with recent developments in the performance and marketing metrics literatures which highlight the need for new ways of measuring performance as well as manageable and comprehensive sets of metrics to be used for performance assessments (Neely, 1995, 1997, 1999; Herremans and Ryans, 1995; Ambler and Kokkinaki, 1997; Hauser and Katz, 1998; Meyer, 1998; Kokkinaki and Ambler, 1999; Shaw and White, 1999; Clark, 1999, 2000; Lehmann, 2004; Ambler et al, 2004). Specifically, this study determines empirically the relative importance export managers place on a set of export objectives. In addition, it provides evidence about managers' relative preferences for short- versus long-term considerations when assessing export performance against export firms' own plan versus competition. Also, the study verifies empirically, whether exporters' assessments of success emphasise efficiency, effectiveness, or adaptiveness (Bonoma and Clark, 1988; Kokkinaki and Ambler, 1999; Clark, 1999; Katsikeas et al, 2000; Morgan et al, 2002). Furthermore, the study explains cross-firm differences in the relative preferences for the frame of reference and time horizon employed in export practitioners' performance assessments by linking contextual factors to evaluations of export success.

Methodologically, the present study approaches the measurement of export performance from a *formative* perspective, unlike previous work in the export marketing literature where a reflective approach has been used to measure performance (see Churchill, 1979; Bollen and Lennox, 1991; Diamantopoulos, 1999). The formative approach is based on the use of causal performance indicators and involves the construction of an *index* rather than a scale (Diamantopoulos and Winklhofer, 2001), allowing for explicit modeling of complementarities and trade-offs among different objectives (c.f. Kaplan and Norton, 1992). The benefit of using a formative approach to measurement is that, despite variations in the performance of individual export objectives, different firms can be compared at an *aggregate* performance level allowing thus, researchers to determine success and failure. In addition, the use of the Analytic Hierarchy Process (AHP) for the operationalisation of the study's conceptual framework, offers a novel methodological

approach to the modelling of export performance that has never been used before in the export performance literature. The AHP methodology (used mainly for multi-criteria problem solving and decision making) is versatile enough to accommodate for multiple export objectives and enable the incorporation of managerial judgements in export performance assessments.

An additional methodological contribution is this study's data collection method that is based on an on-line survey. Surveying on-line is a novel method of data collection that has not been adequately tried in the broader international business context and not at all in the exporting context. This study acknowledges that on-line surveying holds great potential for the future of empirical research (Malhotra and Birks, 1999) and explores its utility in the exporting context. Given the success of the empirical part of this study (in terms of the quality of the data collected and the negligent cost involved), the suggested methodological approach should stimulate and facilitate future on-line research within the international business research domain.

From a managerial perspective, the study hopes to help practitioners improve their decision making in relation to the assessment of export performance and counteract the fact that "[m]any marketing disasters have been associated with inadequate choice and misuse of marketing measures" (Shaw and Mazur, 1997, p.5). In this respect, the study provides export managers with a systematic approach to the assessment of export performance. Specifically, the study acknowledges that different firms may set different export objectives and proposes the AHP methodology which can help export managers determine the weighted importance of their firms' objectives. This is accomplished by establishing a link between export objectives and the relative emphasis placed on the frame of reference and the time horizon adopted to assess the attainment of the export objectives. In other words, this study offers managers a method to link the measurement of export success to their firms' strategic objectives (Kaplan and Norton, 1992; Garenzo et al, 2005). To be specific, the proposed method enables managers to (i) emphasise those relatively more important export objectives that their firms could not afford to leave unattained, "thereby giving managers a sense of priorities" (Goold and Quinn, 1990,

p.49), (ii) translate export firms' objectives into performance indicators and (iii) identify inconsistencies in decision making with regards to the linkage between a firms' export objectives and the export performance measures utilized. Given that "[b]usinesses urgently need improved measurement tools and techniques to clarify their customer and competitive accountabilities" (Shaw and Mazur, 1997, p.5), this study also suggests a measurement model that allows exporters to aggregate the performance of their firms' export objectives into a composite measure (index) of export performance. Specifically, the proposed model can help managers evaluate the success of their firms' export strategies by taking into account the set of the different objectives set. By implication, the composite measure (index) of export performance could assist export decision makers in terms of export marketing strategy planning by helping them compare the relative success of export marketing strategies implemented in different periods of time.



## **CHAPTER 2**

### **LITERATURE REVIEW**

## **2. LITERATURE REVIEW ON BUSINESS PERFORMANCE MEASUREMENT**

This chapter provides the literature background to the issue of performance assessments in a business context. Starting with the definition of performance, it then proceeds to explain the purpose and importance of performance measurement in business practice. Subsequently, the chapter offers an overview of the inter-disciplinary literature relating to business performance before focusing on the exporting context. Following an overview of the export performance literature, several critical issues are highlighted and discussed in order to help develop a comprehensive conceptualisation for the assessment of export success. The discussion includes issues such as the export objectives, the performance dimensions, the distinction between financial and non-financial indicators, the type of assessment employed, the dynamics of performance, the time frame, the frame of reference, the export performance measures, the contextual factors, the measurement perspective and the unit of analysis adopted in export performance assessments. The chapter concludes by offering insights to the assessment of performance in the marketing, accounting and operations management literatures before introducing the framework this study proposes (see next chapter).

### **2.1 Definition of performance.**

Performance is acknowledged to be "an ambiguous term and capable of no simple definition" (Otley, 1999, p.364). Although various performance (and success) definitions can be found in dictionaries (see examples below), a comprehensive definition of performance is difficult to find in the literature. It is obvious from table 2.1 that performance is a broad term that can be used to describe different actions. The construct of performance does not specify to what or whom it relates because constructs "by definition, have no objective referent" (Cameron, 1986, p.541); hence, it is not known to what (or whom) performance is attributed or delivered to.

**Table 2.1: Performance, Success Definitions**

Source	Definition of Perform/Performance	Definition of Succeed/Success
<p><i>Oxford Advanced Learner's Dictionary of Current English, Oxford University Press, (1995)</i></p>	<p>To work or function            An act of performing a play, a concert or some other entertainment            The way in which a person performs in a play, concert, etc            An action or achievement, considered in relation to how successful it is            The ability to operate efficiently, react quickly, etc            The process of performing something            An act involving a lot of unnecessary fuss or trouble</p>	<p>(a) To do what one is trying to do; to achieve a desired aim; to be successful            (b) The achievement of a desired aim, or of fame, wealth or social position            (c) A person or thing that succeeds</p>
<p><i>Collins Cobuild English Dictionary, Harper Collins Publishers Ltd, (1995)</i></p>	<p>(a) To do a task or action, especially a complicated one            (b) Involves entertaining an audience by doing something such as singing, dancing, or acting            (c) How successful someone or something are or how well they do something            (d) The performance of a task is the fact or action of doing it            (e) Something that is or looks complicated or difficult to do (an informal use of the term performance)</p>	<p>(a) The achievement of something that you have been trying to do            (b) The achievement of a high position in a particular field, for example in business or politics            (c) The success of something is the fact that it works in a satisfactory way or has the result that is intended</p>

In an organisational context, the notion of performance is flexible enough to be applied to different functions or separate divisions (entities) (e.g. Coates et al., 1993). Thus, performance can be observed at different levels of aggregation (i.e. units of analysis) within firms. Specifically, at an aggregate level, the industry, the firm and the strategic business unit (SBU) have been used as units of performance analysis, while at a disaggregate level, relevant research has looked into the venture, the product, the program and the project levels (see for instance, relevant reviews by Capone et al., 1990; Griffin and Page, 1996; Katsikeas et al., 2000). The aforementioned complexity is acknowledged by Globerson, (1985), who emphasised the fact that “we may measure performance either

on an individual or a group level. We may measure performance either of a specific stage in the production process or of the process as a whole. We may measure the performance either every unit of time (say every day) or every period of time (say once a week)" (Globerson, 1985, p.643). Such diversity of perceptions illustrates the complex, multi-dimensional nature of performance (Lewin and Minton, 1986) that poses difficulties in terms of advancing an adequate definition about what is actually performance.

An organisation's performance is claimed to be "a reflection of its decision making in relation to strategic objectives, markets and a whole range of internal and external circumstances" (Brown and Laverick, 1994, p.89). In business practice, an organisation performs well when it is "successfully attaining its objectives; in other terms, one that is effectively implementing an appropriate strategy" (Otley, 1999, p.364). Thus, the performance construct has been explicitly related to the notion of success (Ambler and Kokkinaki, 1997); this is obvious in the different streams of the business literature such as the strategic management literature that have built on the causal link between an organisation's strategy and performance (Lubatkin and Shrieves, 1986). Success could be simply defined as *the proximity of performance outcomes to goals pursued* (Ambler and Kokkinaki, 1997) although there are different views on this issue too. For example, Kay (1993) argues that corporate success is a relative concept that is best understood in comparison to the performance of different firms operating in the same domain; according to him, it is the ability of companies to add value to the inputs (i.e. labour, materials, capital costs) they use. Yet, it is not necessarily easy to advance a definition of success that will enjoy broad acceptance in an organisational context when the organisation's various stakeholders (e.g. managers, employees, shareholders, customers, suppliers) as well as other parties of interest such as academic researchers, financial analysts and the government may perceive organisational success differently (Hannan and Freeman, 1977; Walker and Ruekert, 1987; Ambler and Kokkinaki 1997). For instance, job creation might be seen by the government as a key criterion of company success while a company's management may have the view that a "successful company is one that produces a lot of output relative to the inputs it uses up" (Nickell, 1995, p.2) and evaluate company performance accordingly. In contrast, a different stakeholder

group (e.g. an environment friendly consumer group) may argue that performance should not be judged solely by the private gains of the company's shareholders (or even the substantial benefits to the workers) as the costs imposed to the rest of the society may easily outweigh these gains (Nickell, 1995). Hence, the former group may claim that a profitable company is not actually successful because it performed badly when assessed in terms of its (negative) effects to the environment. Also, researchers may interpret success from a different perspective. In this respect, it was argued that the financial view of performance differs from the strategic management view; the former assumes that the only stakeholder that matters is the investor and the latter recognises the need for companies to be accountable to different stakeholder groups too (Lubatkin and Shrieves, 1986). The fact that "the "best" criteria for assessing performance are subjectively determined" (Spriggs, 1994, p.329) illustrates not only that the notion of success is "multifaceted and difficult to measure" (Griffin and Page, 1996, p.478) but also that it is difficult to reach consensus about what success actually means in an organisational context.

The difficulty to comprehensively conceptualise and measure success (Bhargava et al., 1994; Diamantopoulos, 1998; Clark, 1999) is mainly due to the fact that the former is a relative concept that could be assessed according to various company objectives, measures, time frames, perspectives (e.g. inside or outside an organisation) and even be influenced by context-specific factors such as attitudes towards risk (Euske and Lebas, 1998). Such lack of agreement among researchers has led to a diversity of business performance measurement approaches to the extent that "any conceptual definition of performance depends on the research context of a given study" (Shoham, 1998, p.61) and the interpretation of success becomes particular to that study (Katsikeas et al., 2000). In light of the above, any attempt to develop a comprehensive definition of business performance (and success) needs to acknowledge the fact that performance is a *multidimensional* construct that can be measured and interpreted *subjectively* against some internal goal(s) and/or external benchmark(s) within a particular *context* (Griffin and Page, 1993; Ambler and Kokkinaki, 1997; Katsikeas et al., 2000). Moreover, the definition needs to be broad enough to encompass the likely differing views that an

organisation's different stakeholder groups may hold about performance (Shoham, 1998). Thus, this study defines *business performance* as: *the outcome of action undertaken within a specific time frame, measured by specific indicators in a firm- and environment-specific context*. By implication, *success* is: *the subjective interpretation of a firm's performance on specific objective(s) attained within a specific time period and context, relative to specific performance benchmark(s)*. In the ensuing discussion however, both terms are used interchangeably.

## **2.2 Understanding the purpose and importance of performance measurement.**

Before discussing how performance (or success) can be measured, it is important to understand first, what is the meaning of performance measurement in an organisational context and why it is important for businesses to measure their performance. The measurement of performance is "a topic which is often discussed but rarely defined. Literally, it is the process of quantifying action, where measurement is the process of quantification and action leads to performance" (Neely et al., 1995, p.80).

The measurement of performance is often part of a broader management control system (e.g. see Govindarajan and Gupta, 1985) established to enhance managers' understanding about how the business works and ensure "that overall operating coherence is maintained and that the organisation retains a capability to survive in its uncertain environment" (Otley, 1994, p. 298). Such system normally "involves the agreement of objectives for the business between different levels of management; monitoring of performance against these objectives; and feedback on results achieved, together with incentives and sanctions for business management" (Goold and Quinn, 1990, p.43). In such context, performance measurements provide assistance to "the aims of an organisation and the plans that have been developed to achieve those aims" (Otley, 1999, p.381). In addition to helping managers set objectives, plan and implement strategies, meet targets and control business operations (Lynch and Cross, 1991) the measurement of performance can "provide an organisation with the means to motivate individuals to change, adopt new practices and improve" (Euske et al., 1993, p.280).

The key role the measurement of performance plays in a business context is summarised below.

#### **Strategy-related effects**

- Performance measurement is an essential ingredient of successful strategy implementation (Govindarajan and Gupta, 1985). First, it can help management translate corporate strategy goals into everyday objectives (Kaplan and Norton, 1992, 1996) as "business and business unit performance needs to be measured in relation to the objectives identified in the planning process" (Fitzerald et al., 1991). Second, it facilitates monitoring the attainment of company objectives and provides management with the necessary information for sound decision-making (Kaplan and Norton, 1992, 1996). Indeed, the metrics managers employ "act as milestones to indicate progress along each company's individual strategic direction (Ambler and Riley, 2001, p.1).
- Acknowledging the impact of performance measurement on strategy, Neely (1998) argues that the former has three different roles, namely (i) checking (monitoring) the overall strategy implementation, (ii) maintaining compliance in the attainment of specific strategic objectives where failure is not allowed and finally, (iii) questioning/challenging the "correctness" of assumptions underpinning company strategies (e.g. performance aspects that are/should be of importance).

#### **Company-related effects**

- More importantly, performance measurement facilitates intra-firm success comparisons. In this respect, it has been reported that management measures performance to facilitate comparisons with other business units, help in the quality enhancement and/or determine the amount of incentives (bonuses) (Kald and Nilsson, 2000).
- With respect to the setting of management incentives in particular, it has been also argued that, "the intention of using performance measures is to influence

managerial behaviour, so that managers have the knowledge and the motivation to act in the organisation's best interests" (Otley, 1999, p.381).

- Moreover, the purpose of performance measurement encompasses the implementation of initiatives (e.g. management philosophies such as TQM, Business process re-engineering) aiming to change the focus of an organisation (Euske, et al., 1993).
- With regards to monitoring the implementation of the aforementioned management philosophies/initiatives, the measurement of performance can offer learning opportunities (Kaplan and Norton, 1992) thereby contributing to organisational learning and enhance a firm's competitiveness (e.g. Slater and Narver, 1995).

#### **Inter-firm comparisons**

- Besides intra-firm comparisons (i.e. among different business ventures, divisions or products of the same firm), performance measurements are also employed for cross-firm performance comparisons. Specifically, best company practices are compared among firms (i.e. benchmarking) in order to gain mutual benefits and maintain competitiveness (e.g. Voss et al., 1997).

In addition to the points mentioned above, a key purpose of business performance measurement is accountability; the latter involves "the reporting of performance, thereby ensuring that the business satisfies the needs of the stakeholders by reporting on past performance and future plans" (Crowther, 1996, p.9). Accountability has also become a key word for specific business functions such as marketing (Ambler, 2000), the contribution of which to company success is lately under scrutiny (Doyle, 2000; Bush et al., 2002; Lehman, 2004). For example, Shaw and Mazur (1997) point out that marketing accountability helps managers: (i) cut any discretionary expenditure on the marketing function in order to create lean organizations, (ii) maintain control of the marketing budget in the face of increasing empowerment, (iii) exploit the potentials that brands offer by creating extra value and monitoring brand performance, (iv) make sure that a business has the right customer and competitor focus to succeed in a context where



innovation is critical for firm growth and competitiveness, (v) promote customer and competitive knowledge at all organisational levels and functions as knowledgeable employees are the foundation of a strong brand.

As a result of the fact that the measurement of business performance has become an issue of central importance for firms (Crowther, 1996), there is a proliferation of ideas and widespread interest in this field, evidence of which are the various relevant Web links found (see examples in Table 2.2). The measurement of performance from a marketing perspective is “at the heart of the measurement explosion” (Shaw and Mazur, 1997, p.5), too. This recent phenomenon was attributed to seven main factors, namely, “the changing nature of the work; increasing competition; specific improvement initiatives; national and international quality awards; changing organisational roles; changing external demands; and the power of information technology” (Neely, 1999, p.205).

**Table 2.2: Examples of performance-related Web sites**

<a href="http://www.performanceportal.org">http://www.performanceportal.org</a> The Performance Measurement Association (PMA) is a global network launched at the 2nd international PM Conference, PM 2000, Cambridge, UK
<a href="http://www.fpm.com/index.html">http://www.fpm.com/index.html</a> Foundation for Performance Measurement
<a href="http://www.som.cranfield.ac.uk/som/research/centres/cbp/pma">http://www.som.cranfield.ac.uk/som/research/centres/cbp/pma</a> Centre for Business Performance at Cranfield University
<a href="http://www.ifm.eng.cam.ac.uk/csp/summaries/pm.html">http://www.ifm.eng.cam.ac.uk/csp/summaries/pm.html</a> Institute of Manufacturing at Cambridge University
<a href="http://mubs.mdx.ac.uk/Research/Research_Centres/icbpcr/publ.htm">http://mubs.mdx.ac.uk/Research/Research_Centres/icbpcr/publ.htm</a> The International Centre of Business Performance and Corporate Responsibility, Middlesex University Business School
<a href="http://www.icaew.co.uk/cbp/">http://www.icaew.co.uk/cbp/</a> Centre of Business Performance, Institute of Chartered Accountants

In light of the significant and diverse role of performance measurement mentioned above, this activity is important for business decision-making at both top management and operating levels. In fact, it was claimed that performance measurement is an essential

activity for managers and firms alike to the extent that without it, the former are not able to evaluate the quality of their strategic decisions (Chakravarty, 1986) while the latter are likely to be outperformed (Lingle and Schiemann, 1996).

### **2.3 The measurement of business performance: an overview of the literature.**

The performance of companies "is the major driving force behind the wealth of nations" (Nickell, 1995, p.1). The importance of highly performing firms for the prosperity of both the firms themselves and the countries' economies is manifested in the widespread research interest in performance measurement, an interest that has long been reflected in the multidisciplinary business literature; within the latter, two broad research themes are discerned. The first theme includes those performance related studies looking into the antecedents of performance (e.g. Buzzel and Gale, 1987; Narver and Slater, 1990; Cavusgil and Zou, 1994) and characterises research streams such as for instance, the strategic management literature; this is specifically founded on the notion that certain business behaviours influence performance (Lubatkin and Shrieves, 1986) and reflects the fact that the improvement of performance is "at the heart of strategic management" (Venkatraman and Ramanujam 1986, p.801). Given that some firms perform better than others (Nickell, 1995), those studies that focus on the drivers of company performance "define performance as a dependent variable and seek to identify variables that produce variations in performance" (March and Sutton, 1997, p.698). Thus, such research work emanates from the desire to "demystify" success and consequently suggest ways to achieve it (Thach and Axinn, 1994).

In addition to the former research theme reflecting an interest in the antecedents of business performance, the inter-disciplinary literature entails a broad group of studies looking into the performance construct per se. Acknowledging that a "major problem with analysing corporate performance is accurately measuring it" (Nickell, 1995, p.9), relevant studies reflect the need to delineate comprehensively the business performance domain before set out to identify its determinants (e.g. Otley, 1999; Kokkinaki and Ambler, 1999; Diamantopoulos, 1999). Such research work has been undertaken in the

areas of accounting (e.g. Fitzgerald et al., 1991; Eccles and Pyburn, 1992; Likierman, 1993; Kaplan and Norton, 1996; Ittner and Larker, 1998a,b; Otley, 1999), organisational science (e.g. Goodman and Pennings, 1977; Meyer and Gupta, 1994; March and Sutton, 1997), strategic management (e.g. Lenz, 1981; Dess and Robinson, 1984; Chakravarthy, 1986; Venkatraman and Ramanujam, 1986; Buckley, et al., 1988; Ashton, 1997), marketing (e.g. Bonoma and Clark, 1988; Herremans and Ryans, 1995; Srivastava et al., 1998; Shaw and White, 1999; Davidson, 1999; Clark, 1999, 2000; Kokkinaki and Ambler, 1999; Ambler, 2000; Doyle, 2000; Sheth and Sisodia, 2002; Ambler et al., 2004), new product development (e.g. Hart, 1993; Montoya-Weiss and Calantone, 1994; Griffin and Page, 1993, 1996; Robben et al., 1999), operations management (e.g. Dixon et al., 1990; White, 1994; Neely et al., 1995, 1999; Gunasekaran et al., 2001; Hudson et al., 2001), as well as exporting (e.g. Madsen, 1987, 1994, 1998; Cavusgil and Zou, 1994; Matthyssens and Pauwels, 1996; Styles, 1998; Shoham, 1998; Diamantopoulos, 1999; Katsikeas et al., 2000; Lages and Lages, 2004; Sousa, 2004).

The aforementioned theme of research includes various conceptual contributions (e.g. Campbell, 1977; Cameron, 1986; Venkatraman and Ramanujam, 1986; Eccles, 1991; Shoham, 1991; Al-Khalifa and Morgan 1995; Murphy, et al., 1996; Lebas and Euske, 1998) as well as frameworks, the multi-dimensionality of which serves the conceptual and operational delineation of performance (e.g. Keegan et al., 1989; Lynch and Cross, 1991; Kaplan and Norton, 1992; Morgan et al., 2002; Maltz, et al., 2003). The development of composite performance measures (e.g. Craig and Harris, 1973; Brown and Laverick, 1994; Zou et al., 1998; Diamantopoulos, 1999) and the emphasis on the choice and properties of the various metrics used, has attracted particular attention in the cross-disciplinary literature focusing on the operationalisation of success (e.g. Buzzel and Gale, 1987; Jacobson, 1987; Fortuin, 1988; Azzone et al., 1991; Szymanski et al., 1993; Schmenner and Vollmann, 1993; Meyer and Gupta, 1994; Bhargava et al, 1994; White 1996; Ghalayini and Noble, 1996; Neely et al., 1995; 1997; Anderson et al., 1997; Hauser and Katz, 1998; Clark, 1999; De Toni and Tonchia, 2001; Ambler et al, 2004). Recent advances in this particular theme of business performance emphasise an integrated approach to the design, development and/or management of performance measurement

systems (PMS) by focusing on the implementation of PMS in practice (see for example, Bourne et al, 2000; Neely et al, 2000; Evans, 2004; Garenzo et al, 2005).

Despite the various conceptual and operational contributions to the measurement of performance found across the different streams of business research, it is clear that what constitutes success and what is the "best" way to measure it, still remains an unresolved and challenging issue in the relevant literature (Griffin and Page, 1993; Katsikeas et. al., 2000). Although reaching consensus has not been easy for researchers, the foregoing work (collectively) has contributed substantially to the understanding of the notion of success in the broader business and export contexts. The next section in particular aims to shed more light into the issue of export success by highlighting several key areas in the relevant export performance literature.

#### **2.4 Export performance assessments: an overview of critical issues.**

Although "researchers have been examining export performance for nearly four decades" (Lages and Lages, 2004, p.36), the conceptualization and measurement of the elusive construct of export success has always been problematic in the export literature. The lack of consensus among researchers as to *which* aspects of performance should be measured, *how* it should be done (Styles, 1998) and *why* do it in this (or that) way (Diamantopoulos, 1998) is manifested in the multitude of performance measures adopted by relevant empirical studies (for a review see Katsikeas et al., 2000). The diversity of measures employed implies a problem- as opposed to theory-driven approach to export performance measurement (Shoham, 1998; Katsikeas et al., 2000) resulting in findings whose contribution to export theory advancement is questionable (Zou et al., 1998; Zou and Stan, 1998). The need for a proper delineation of the construct has lead to several recent attempts seeking to conceptualise the dimensions of export performance and guide the construct's operationalization (see Shoham, 1991; Thach and Axinn, 1994; Al-Kalifa and Morgan, 1995; Katsikeas and Morgan, 1996; Matthyssens and Pauwels, 1996; Diamantopoulos, 1999; Katsikeas et al., 2000). In addition to the conceptual delineation of the construct, the empirical measurements have evolved from early studies employing

uni-dimensional or single-item measures (see review by Gemünden, 1991) to multiple measures of performance (see review by Katsikeas et al., 2000). According to latter review, 66% of the studies have used multiple measures; clearly, using such measures has been more popular in comparison. More recently, research efforts have focused on proposing multi-dimensional, multi-item export performance measures that strive to capture the composite essence of success (see for example, Zou et al., 1998; Shoham, 1998; Styles, 1998; Lages and Lages, 2004). These composite scales "overcome the inherent limitations of single-item measures characterising much of early export performance research" (Diamantopoulos, 1999, p.445); moreover, they can facilitate comparisons of findings on the drivers of export success in different national settings, thereby helping guide export marketing research towards a direction that is "much less ethnocentric" (Katsikeas et al., 1998, p.326).

Collectively, the work mentioned above underscores several important areas relevant to the measurement of export performance that one needs to consider before developing a comprehensive framework for export performance assessments (see next chapter). Table 2.3 below summarises these critical areas and the associated issues requiring attention; the table is based on conceptual and review papers by Shoham (1991), Thach and Axinn (1994), Al-Khalifa and Morgan (1995), Katsikeas and Morgan (1996), Matthyssens and Pauwels (1996), Diamantopoulos (1999), Katsikeas et al (2000) and Sousa (2004). From table 2.3, it becomes evident why "there has been no uniform definition of performance in export marketing studies" (Styles, 1998, p.15). Remember that a lack of a broadly accepted export performance measure in the literature suggests the need to address three key issues introduced earlier (see section 1.1) namely, the export objectives pursued and their relative importance for firms, the translation of export objectives into export performance indicators and the contextual impact on assessments of export success. These three issues have not been adequately (if at all) considered in previous empirical attempts to measure export performance and are addressed by this study's conceptual framework. Table 2.3 provides a structure that facilitates the discussion around these important areas beginning with the export objectives (section 2.5), which is followed by the conceptual delineation of performance (see section 2.6).

**Table 2.3: Critical issues in export performance measurement**

<b>Key Areas</b>	<b>1. Export Objectives</b>	<b>2. Performance Dimensions</b>	<b>3. Performance Indicators</b>
<b>Description</b>	<ul style="list-style-type: none"> <li>• Financial</li> <li>• Non-financial</li> </ul>	<ul style="list-style-type: none"> <li>• Efficiency</li> <li>• Effectiveness</li> <li>• Adaptiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Financial</li> <li>• Non-financial</li> </ul>
<b>Issues for Consideration</b>	<ul style="list-style-type: none"> <li>• The export objectives firms pursue may differ</li> <li>• Differences may be evident in the number, combination and the relative importance of the objectives pursued</li> <li>• Such differences suggest that notions of success may vary among firms.</li> </ul>	<ul style="list-style-type: none"> <li>• Trade-offs among performance dimensions reflect on performance measures employed.</li> <li>• No single performance indicator is adequate to capture export performance.</li> <li>• Stakeholder-perspective may affect measurement.</li> </ul>	<ul style="list-style-type: none"> <li>• Existing performance measure classification is not clear enough to facilitate measure selection.</li> <li>• Any export objective could be linked to different measures; there is no consensus about the measures used.</li> <li>• The measures academics prefer to employ may not reflect export managers' preferences in practice.</li> </ul>

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(...table 2.3 follows from previous page)

Key Areas	4. Type of Assessment	5. Performance Dynamics	6. Time Frame
<b>Description</b>	<ul style="list-style-type: none"> <li>• Objective</li> <li>• Subjective</li> </ul>	<ul style="list-style-type: none"> <li>• Sources of advantage</li> <li>• Positional advantages</li> <li>• Market performance outcomes</li> <li>• Financial performance outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Static (short-term)</li> <li>• Dynamic (long-term)</li> </ul>
<b>Issues for Consideration</b>	<ul style="list-style-type: none"> <li>• Data availability (and/or accessibility) may be problematic with objective performance measures.</li> <li>• Managerial evaluations of success/failure based on objective measures need to be taken into account.</li> <li>• Important to examine “convergence” in assessments based on objective vs. subjective measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Export performance is a dynamic process.</li> <li>• Different performance indicators capture different performance dynamics.</li> <li>• Different performance indicators relate to different aspects of firm structure and behavior.</li> </ul>	<ul style="list-style-type: none"> <li>• Performance indicators should capture past, current and future performance.</li> <li>• Stakeholders’ performance orientation may affect the time perspective adopted.</li> <li>• Cross-sectional studies limit causal inferences about links among past, current and future performance.</li> </ul>

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(...table 2.3 follows from previous page)

Key Areas	7. Frame of Reference	8. Measurement Perspective	9. Unit (or Level) of Analysis
<b>Description</b>	<ul style="list-style-type: none"> <li>• Domestic market</li> <li>• Competition</li> <li>• Past performance</li> <li>• Own goals</li> </ul>	<ul style="list-style-type: none"> <li>• Reflective approach</li> <li>• Formative approach</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate</li> <li>• SBU</li> <li>• Export venture</li> </ul>
<b>Issues for Consideration</b>	<ul style="list-style-type: none"> <li>• Different performance indicators relate to different performance referents.</li> <li>• Adoption of internal vs. external frame of reference can result in different assessment of performance.</li> <li>• No single referent is superior to another when assessing performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Scale based on reflective (effect) indicators vs. formative (causal) indicators constituting an Index.</li> <li>• Measurement method should allow for likely trade-offs among export objectives' performance.</li> </ul>	<ul style="list-style-type: none"> <li>• Export performance assessments at different levels generate different insights on export success</li> <li>• Different performance indicators are appropriate for different levels of analysis</li> <li>• Control of extraneous variables (e.g. domestic market growth) is easier for some levels of analysis than others</li> </ul>



## **2.5 Distinction between financial and non-financial objectives and associated aspects of performance.**

While the assessment of business performance has been “a continuous challenge for both managers and researchers” (Maltz et al., 2003 p.187), the cross-disciplinary literature tends to agree in terms of acknowledging the multi-faceted nature of performance and advocating the need to maintain a broad view of company success (Lynch and Cross, 1991; Brown and Laverick, 1994; Crowther, 1996; Mathysens and Pauwels, 1996; Ambler and Kokkinaki, 1997; Evans, 2004). Such view reflects the fact that firms treat their markets as economic as well as strategic opportunities where not only financial but also strategic (competitive) goals are set; for example, gaining a foothold in international markets, increasing the awareness of product or company or responding to competitive pressures (Cavusgil and Zou, 1994). Thus, the literature makes a distinction between two principal aspects of performance, namely, (i) financial and (ii) non-financial performance (see for example, Keegan et al, 1989; Fitzgerald et al., 1991; Kaplan and Norton, 1992; Cavusgil and Zou, 1994; Sheth and Sisodia, 2002; Maltz et al., 2003). The former relates to the financial and the latter to the diversity of non-financial objectives (e.g. product quality, innovation, customer satisfaction, research and development of new technologies) firms may pursue to achieve financial success (see De Toni and Tonchia, 2001; Morgan et al., 2002; Evans, 2004; Rust et al, 2004). The term “objective” actually “implies neither a fixed standard nor a static level of performance” (Valentine, 1966, p.48). Given that business organisations tend to have strategic goals (e.g. market leadership and/or technological innovation) that help them gain or maintain a competitive position in the market (Goold and Quinn, 1990), business objectives are “the bridge between the broader and less precise statement of mission and strategy and the detailed, quantified performance measures applied to subsidiaries, divisions, operating units etc. They represent overall targets for achievement, whether corporate or lower business levels, which in the latter cases have to be set to reflect both the reasonable expectations of the individual businesses and, in aggregate, meet the corporate requirements” (Coates et al. 1993, p.15). Businesses objectives are usually linked to a specific time period within which they are supposed to be achieved (Kotler et al., 1999); in addition to short-

term there can be long-term objectives that may provide "a balanced type of motivation for managers than purely short-term profits" (Goold and Quinn, 1990, p.50). The fact that "the role and expectations of exporting can vary widely from one firm to another, even with firms with the same intensities or volumes of sales from exporting" (Thach and Axinn 1994, p.9) suggests that the number and combination of export objectives, their importance and the time period within which the former are achieved may differ across firms (Pennings and Goodman, 1977; Otley, 1999; Dixon et al., 1990; Simons, 1995; Cavusgil and Zou, 1994); nevertheless, the achievement of objectives is measurable.

The monitoring of the business objectives' performance in the literature is undertaken both i) financially and (ii) non-financially. The former measurement approach involves the use of profitability indicators capturing the achievement of financial objectives (see more in section 2.7.1); it conveys information relating to firms' financial performance, which is of interest to different parties such as investors, bankers, stock market analysts, researchers, the government and the business managers themselves (Crowther, 1996). Given that "in general a free market system measures success in currency" (Lehmann, 2004, p.73), such financial performance tends to attract greater attention in comparison (Coates et al., 1992; Ambler, 2000; Ambler et al., 2004).

The measurement of the non-financial objectives' performance can be linked to various different constituents such as customers (e.g. customer complaints, brand awareness and loyalty) and/or competitors (e.g. market share growth) and/or suppliers (e.g. delivery speed and reliability) and/or employees (e.g. attracting top talent, maintaining satisfaction) as well as company resources and capabilities (e.g. new patents) and/or processes (e.g. just-in-time manufacturing, time to market new products) and/or government regulators and communities (e.g. compliance with environmental regulations). Although the attainment of non-financial objectives' performance is tracked non-financially (e.g. see Azzone et al., 1991; Neely et al., 1997; Clark, 1999) it can be also assessed financially (see Srivastava et al., 1998; Doyle, 2000; Lenskold, 2003).

In light of the above, it seems that notions of success may vary depending on the number and combination of objectives assessed, how these are assessed and the stakeholders' perspective (e.g. employees, investors, customers, suppliers) adopted when interpreting the objectives' attainment (Ambler and Kokkinaki, 1997). The next discussion aims to address some of the complexity inherent in the notion of success by focusing on the conceptual underpinning of performance assessments (see below) while a discussion on the measurement of success follows immediately after (see section 2.7.1 and 2.7.2).

## **2.6 Performance dimensions: description**

In a context where the evaluation of company success "dominates current concerns of both evaluators and managers" (Cameron, 1986, p. 541), the conceptualisation of performance becomes necessary (Spriggs, 1994). In this respect there is an agreement across the literature (e.g. Venkatraman and Ramanujam, 1986; Cameron, 1986; Lewin and Minton, 1986; Walker and Ruekert, 1987; Bonoma and Clark, 1988; Bhargava, Dubelaar and Ramaswani, 1994; Al-Khalifa and Morgan, 1995; Clark, 2000; Katsikeas, et al., 2000; Morgan et al., 2002) that performance can be delivered along three core dimensions "considered to be of most interest to corporate and business unit managers" (Styles, 1998, p.14). From a marketing point of view, managers' evaluations of performance tend to reflect such a multi-dimensional perspective (Clark, 2000). Hence, this study adopts the conceptualisation of performance as reflected in the literature, which consists of the Efficiency, Effectiveness and Adaptiveness dimensions defined in table 2.4 below. These dimensions are *generic* characteristics of performance along which one could interpret the attainment of any organisational objective (Al-Khalifa and Morgan, 1995). An efficiency perspective "measures the amount of resources used relative to outputs in the process of acquiring inputs, transforming inputs, and disposing of completed outputs or services" (Pennings and Goodman, 1977, p.162). Effectiveness differs from efficiency in that "the former refers to input acquisition or output disposal levels while the latter adjusts those levels in reference to some cost or resource utilization unit" (Pennings and Goodman, 1977, p.163). Last, the adaptiveness dimension is reflected in measures that express relation between outcomes in a manner that indicates a

firm's ability to "adjust output performance to meet goals under varieties of environmental circumstances" (Hannan and Freeman, 1977, p. 110). Such differences among dimensions are reflected on the respective measures illustrated in table 2.4 below.

Specifically, performance measures linked to an efficiency orientation are characterised by short-termism (i.e. reflecting a static, internally-focused perspective) as opposed to measures of effectiveness that reflect a longer time period (i.e. a dynamic performance measurement perspective). An emphasis on the dimension of adaptiveness is likely to suggest an external focus (McKee et al., 1989) and dynamic measurements (e.g. new product market share growth); yet, an adaptiveness orientation could be also reflected in static, internally focused measures (e.g. % new product export sales) as shown in the following table 2.4.

While the three performance dimensions could be independent, complementary or conflicting, the literature documents trade-offs (e.g. Bonoma and Clark, 1988; Clark, 1999; Kokkinaki and Ambler, 1999) between "effectiveness (to what extent are objectives expected to be achieved in a given time frame?) and efficiency (what level of resourcing is thought necessary to allow such achievement?)" (Otley, 1999, p.369). In addition, it has been argued that the ability to maintain spare resources can help companies adapt in changing environments so as to achieve their objectives (Chakravarthy, 1986); in such environments, adaptiveness could be claimed to precede any efficiency and effectiveness outcomes (Walker and Ruekert, 1987).

Although it is difficult to find a definition for the notion of trade-offs in the literature, "the underpinning concept is that in a trade-off situation, high levels of performance over several performance types are not reached" (Filippini et al., 1998, p.383). Indeed, firms' strategies may often incorporate contradictory elements (Cameron, 1986), reflecting multiple (and even conflicting) objectives such as striving for profitability through lowering product costs as well as increasing product quality (Meyer and Gupta, 1994; Doyle, 2000).

**Table 2.4: Performance Dimensions**

Dimensions	Illustrative Definitions			Illustrative Measures
<b>Efficiency</b>	The relationship between performance outputs and the inputs required to achieve them. (Al-Khalifa and Morgan, 1995)	The relation between inputs and outputs, maximising the latter relative to the former (Bonoma and Clark, 1988).	The outcome of a business' programmes in relation to the resources employed in implementing them (Walker and Ruekert, 1987)	Doing things right (Drucker, 1974).  • <i>ROI</i> • <i>ROS</i> • <i>ROE</i>
<b>Effectiveness</b>	The degree to which the organisation's export goals are reached. (Al-Khalifa and Morgan, 1995)	The expected achievement of objectives in a given time frame. (Otley, 1999)	The success of a business' products and programs in relation to those of its competitors in the market. (Walker and Ruekert, 1987)	Doing the right thing (Drucker, 1974).  • <i>Export sales growth</i> • <i>Change in export market share</i> • <i>Change in customer loyalty</i>
<b>Adaptiveness</b>	The ability of the organisation to adapt to changes in its export environment. (Al-Khalifa and Morgan, 1995)	A firm's ability to transform itself in response to changes in the environment. (Chakravarthy, 1986)	The business' success in responding over time to changing conditions and opportunities in the environment. (Walker and Ruekert, 1987).	• <i>% Export sales from new products</i> • <i>Rate of on-time delivery from new products exported</i> • <i>New product export market share growth</i>

In such context, the aforementioned trade-offs among dimensions are reflected on the strategies export firms adopt to achieve their objectives because "no single strategy can be expected to perform well on all three dimensions no matter how well it is implemented" (Walker and Ruekert, 1987, p.19). For example, it has been argued that cost leadership and differentiation are mutually exclusive strategic options and trade-offs between them are implied (Porter, 1980). The former strategy in particular, is more likely to reflect an efficiency, short-term oriented performance perspective (e.g. achieving short-term profits) while the latter strategy is more likely to serve better a firm's long-term goals by say, focusing on product variety and increasing adaptation to different export markets.

Given that conflicting relationships among performance dimensions could be seen as reflecting performance trade-offs among the different objectives firms pursue, then any trade-offs among dimensions should also be reflected in the performance measures monitoring the achievement of the objectives pursued (Eccles and Pyburn, 1992; Anderson, Fornell and Rust, 1997). Acknowledging that "managers are using multiple measures of performance" (Clark, 2000, p.18), achieving an above average performance across different, conflicting objectives (e.g. short-term profitability vs. market share growth) is what actually differentiates "excellence" among firms (Chakravarthy, 1986). This statement is along the lines with the view that organisational performance and success is a paradox that "involves contradictory, mutually exclusive elements that are present and operate equally at the same time" (Cameron, 1986, p. 545). Managing to cope with simultaneous contradiction eventually assists companies to succeed in uncertain environments (Cameron, 1986). In a marketing context, it seems that such contradictions are well understood because managers have been found to have "a relatively rich framework for judging marketing performance, drawing on efficiency, adaptability and effectiveness to different degrees" (Clark, 2000, p.18).

Using such a "rich framework" to evaluate marketing success suggests a change in the existing "trends" in performance measurement. Indeed, the latter used to be dominated by a short-term (efficiency) perspective (Craig and Harris, 1973; Coates et al., 1992; Clark,

1999). Such short-termism is evident in a cross-cultural study conducted by Coates et al., (1993), where British firms were found to look at their performance from an investor's perspective using mainly efficiency-oriented (profitability) indicators such as returns to shareholders (EPS and ROE) and asset return (ROD). However, a shift has been reported from the efficiency to the effectiveness dimension suggesting that firms pay attention to their long run marketing performance too (Bonoma and Clark, 1988; Kokkinaki and Ambler, 1999; Ambler, 1999; Clark, 1999). Recently, it was also claimed that even financial markets are influenced by firms' non-financial performance (Low and Siesfeld, 1998) and "have already shown a desire to factor marketing performance into their assessments of future corporate performance" (Morgan et al., 2002, p.237).

In exporting, Katsikeas et al., (2000) report that most studies emphasised effectiveness and to a lesser extent efficiency; only few studies explored the adaptiveness dimension. Although, the emphasis management places on each of the efficiency, effectiveness and adaptiveness dimensions can influence the assessment of success (Ambler and Kokkinaki, 1997; Clark, 2000), there is a lack of relevant evidence from export practices (an exception is a study by Madsen, 1998). In light of the above, it was thought that this study should generate empirical evidence about the emphasis firms place on the existing set of dimensions when assessing their success (Morgan et al., 2002) as well as examine trade-off interactions among the performance dimensions firms focus on (Walker and Ruekert, 1987; Ostroff and Schmitt, 1993); such interactions may lead to the possibility that export researchers use conflicting measures (Matthyssens and Pauwels, 1996). Relevant evidence from export decision makers would certainly help the operationalisation of export performance. If, for instance, exporters were found to favour neither efficiency nor effectiveness when evaluating the attainment of their objectives, but view success mainly from an adaptiveness perspective, then the selection of export performance indicators aimed at monitoring a given set of export objectives should only reflect an adaptiveness orientation. In contrast, if an efficiency perspective was found to be more likely (e.g. Madsen, 1998), then emphasis should be placed on utilising efficiency-oriented performance metrics (see also relevant criticism in section 2.6.1). In addition to the above, the issue of performance trade-offs has implications for the

measurement approach (i.e. reflective vs. formative) adopted to capture export success; but this is discussed in section 2.7.7.

### 2.6.1 Performance dimensions: critique

Despite the fact that adoption of the three-dimensional delineation of performance proposed in the literature (e.g. Walker and Ruekert, 1987; Al-Khalifa and Morgan, 1995; Morgan et al., 2002) provides this study with a well-established conceptual context for the measurement and interpretation of export success, there are some concerns that need consideration. The ensuing discussion focuses on two issues that are inter-related; namely, the notion of trade-offs among performance dimensions and the relevance of the former conceptualisation to the study of export success. Specifically, the discussion questions whether the conceptualisation of performance into three dimensions exhibiting *trade-offs* among them reflects managerial practices. The decision makers' perspective is important in terms of influencing the measurement and interpretation of performance (Day and Nedungadi, 1994) and there is a lack of evidence about such practices in exporting (see section 2.6). Following a critique relating to the notion of trade-offs, the discussion stresses that export practitioners may not perceive export success in a manner that distinguishes between different and conflicting dimensions. By implication, using the former performance conceptualisation to interpret export achievement may not facilitate the study of *export* success.

The concept of trade-offs assumes conflicting relations among the different dimensions of performance and the measures that correspond to those dimensions (Ostroff and Schmitt, 1993). The idea can be traced back to the early operations management literature (i.e. manufacturing context) where it was initially discussed (e.g. Skinner, 1969). It was then suggested that a manufacturing unit (plant) cannot perform equally well on different objectives and should focus on a few performance measures, trading these off against measures that are less important. The notion of trade-offs has been also endorsed by disciplines other than operations management as mentioned above (e.g. Porter, 1980, Cameron, 1986). Moreover, from a marketing performance (e.g. Morgan et al., 2002) as



well as export perspective (e.g. Katsikeas et al., 2000), trade-offs among performance dimensions have been suggested to be an important area for further research.

Although the concept of performance trade-offs is widely acknowledged in the interdisciplinary literature, it may not always apply to all kinds of different contexts. For example, adaptiveness may be seen as a relatively more important dimension in increasingly dynamic (changing) environments (Walker and Ruekert, 1987; Katsikeas et al., 2000). In such context, focusing on adaptiveness may influence the achievement of any effectiveness goals firms may set, leading to a positive (rather than conflicting) relationship between adaptiveness and effectiveness. For example, some international firms that focus on adapting their products to meet changing customer needs locally may increase their market share relative to competition (Leonidou et al., 2002). The same may be the case for the relationship between adaptiveness and efficiency. Thus, some firms may manage to adapt in very uncertain environments by adopting internally focused strategies, meaning that they "may consider responding to erratic market decline by narrowing the product base and instituting selected efficiencies" (McKee et al., 1989, p.32). In this context, such firms may not necessarily perceive the relationship between adaptiveness and efficiency to be conflicting.

In addition to the above, Filippini et al., (1998) report that there are apparently, both high levels of compatibility as well as numerous performance trade-offs within a firm (in an operations management context). Performance improvement initiatives (programs) such as concurrent engineering and total quality management support the idea that different (and seemingly conflicting) performance goals (e.g. lower product costs and lead times vs. high product quality) can be pursued simultaneously (Ghalayini and Noble, 1996). Indeed, it was shown that it is possible for different elements of performance to be mutually enhancing (e.g. Mapes et al., 1997) thereby suggesting that the emphasis placed on the notion of performance trade-offs may need to be abandoned from performance operationalisations (De Toni and Tonchia, 2001).

Views expressed recently in a marketing context seem to convey a similar message when arguing that “[m]arketing must focus on delivering effective efficiency” (Sheth and Sisodia, 2002, p.349). The view that the relative importance placed on trade-offs among the attainment of different objectives may have to be discounted, is also supported by Buzzell and Gale’s (1987) work conducted at an SBU level; a link was established between a firm’s financial performance and its sales performance measured in terms of market share. Aiming for profitability, often reflects a short-term efficiency (input/output) performance orientation that is supposed to conflict with long-term (effectiveness) goals that firms may set (Coates et al., 1993; Ittner and Larker, 1998b); in contrast, aiming for market share growth captures a market performance outcome that may well reflect an effectiveness view of performance. The empirically determined link mentioned above suggests that sales performance (measured in terms of market share) can be a “legitimate” business objective for firms that pursue profit objectives too. In fact, the former seems to act complementary to (rather than against) the latter (i.e. note that there have been some objections such as Szymanski et al.’s (1993) about this market share-profitability relationship). Furthermore, it is possible that there can be antagonism between some aspects of organisational performance (e.g. shareholder returns and investments in new product development) while other aspects (e.g. a firm’s reputation and its financial performance) may complement each other (Meyer and Gupta, 1994). Therefore, *both* complementarities and performance trade-offs among the objectives pursued, the dimensions along which performance is assessed (and the measures used) may co-exist within a firm. Such inter-relationships (trade-offs and complementarities) may apply to the exporting field, too (Shoham, 1998; Styles, 1998). Given a context where complementarities as well as conflicts among efficiency, effectiveness and adaptiveness co-exist, export decision makers may not necessarily adopt the conventional view describing success in terms of three dimensions exhibiting trade-offs among them. By implication, the conceptualisation of performance into distinctly different (and conflicting) dimensions along which a firm’s performance could be interpreted may neither be realistic nor sufficient to explain exporters’ assessments of success.

Finally, one could also claim that the concepts of efficiency and adaptiveness can be "contained" within the broader notion of effectiveness thereby suggesting a conceptual overlap between dimensions. In fact, the notion of effectiveness (i.e. essentially the attainment of a firm's goals relative to expectations) could be applied in the sphere of the various efficiency (and adaptiveness) goals firms may have. For instance, a firm whose main performance goal is to minimise its input relative to output (i.e. strives for efficiency) could claim to be effective in its effort to be efficient. In this respect, Bonoma and Clark (1988) stressed that discussions of efficiency imply also effectiveness because no one would suggest that managers should become more efficient at inefficient actions. Moreover, the former overlap may be reflected at the operational level. Although the literature has clearly identified an efficiency orientation with static, short-term oriented indicators (e.g. ROI) and an effectiveness perspective with indicators (e.g. market growth) that measure performance changes over time (Eccles, 1991; Clark, 1999), such conceptual overlap can be problematic in terms of linking indicators to a specific performance orientation (e.g. see table 2.4 presented earlier). Suppose that an export firm looks at the percentage of its sales from new products exported. The latter measure reflects an emphasis on adaptiveness by indicating the firm's ability to respond to environmental changes through introducing new products successfully. Alternatively, the same firm may decide to assess its new product export sales growth (against expectations). In this respect, one could argue that the firm has now adopted an effectiveness (rather than adaptiveness) perspective because effectiveness implies the achievement of goals within a specific time horizon, such as doubling new product sales within two years. Consequently, capturing adaptiveness by measuring a firm's ability to respond to environmental changes through successful introduction of new products could be seen to reflect (or overlap with) an effectiveness orientation too. In addition, if the firm chooses to look at how its revenue from new product export sales (output) changed over time relative to the costs incurred (inputs), then one could not easily distinguish whether the firm's assessment reflects an efficiency (input/output) or adaptiveness orientation. Managers might also find the distinction between performance dimensions less than clear-cut at an operational level. Given that the three-dimensional conceptualisation of performance is meant to facilitate the measurement of performance,

any confusion that may occur at an operational level, would not help the case for using this set of dimensions to study export success.

Having considered the points mentioned above, there is indeed some reservation as to whether the three-dimensional framework serves its purpose, which is to facilitate the assessment of export performance. Such concern is reinforced by (i) the fact that most of the studies "took a unidimensional approach in the conceptualisation and measurement of export performance" (Katsikeas et al., 2000, p.499) and have not explored trade-off interactions among dimensions and (ii) the lack of empirical evidence on the performance orientations and metrics adopted in export practice (an exception is Madsen's (1998) study reporting that efficiency oriented, short-term performance perspectives tend to prevail among exporters). In fact, it is not clear whether practitioners view the existing performance dimensions as conflicting (i.e. exhibiting trade-offs among them) and how such conflicts actually influence assessments of export success in practice (i.e. the link between export objectives and performance measures utilised).

If for instance, export managers are found to make clear distinctions between efficiency, effectiveness and adaptiveness and consider all three of them to be highly important for their firms, then positive inter-correlations will result, suggesting complementarities (rather than conflicts) among dimensions. Such positive relationships would imply that it is possible for a firm's strategy to strive to succeed in different dimensions simultaneously (Chakravarthy, 1986) or even strive to succeed in one dimension and excel in all of them. Hence, the conceptual delineation of performance into three distinctly different perspectives along which export success should be assessed, would not be of much use considering that it would not make any difference to the actual assessment of export success, whether firms adopt the same or different performance orientations. By implication, the study of export success would not be facilitated if success is explained in a manner that distinguishes between export firms focusing on different dimensions or a firm's export achievement is interpreted along any single dimension among those mentioned above. The generation of relevant empirical evidence

from export practice would help evaluate how realistic and productive it is to employ the three-dimensional conceptualisation of performance in export performance assessments.

## **2.7 Issues relating to the measurement of export performance**

Shifting the emphasis from the conceptual underpinning of export performance to the construct's measurement, this section focuses on the performance indicators (see key areas in table 2.3).

### **2.7.1 Distinction between financial and non-financial performance indicators**

It was mentioned earlier (see section 2.4), that the notion of business performance entails both financial (economic) and non-financial (operational) aspects reflecting respectively the financial and non-financial objectives companies may pursue (see for example Kaplan and Norton, 1992; Neely et al., 2000; Katsikeas et al., 2000; Morgan et al., 2002). By implication, performance evaluations require financial and non-financial information to help draw the whole picture of a company's success. Financial information is "the most widely available information source on companies...[t]he extent of financial information that must be disclosed depends on whether the company is public, private, listed or unlisted. These requirements produce quantifiable data which, when collated, provide a number of performance measures" (Brown and Laverick, 1994, p.90). The American Accounting Association (AAA 1975) defines financial information as "quantitative measure that is expressed in the monetary metric resulting from the measurement of past, present and future economic events" (Mostaque, 2000, p.62). Despite the fact that a clear definition for financial/accounting performance measures could not be found (i.e. note that this study uses both terms inter-changeably), there is an implicit agreement in the literature that such measures provide quantitative information on past, current and/or future performance. Financial (economic or hard) measures (e.g. ROI) help translate "the messiness and uncertainties of managing complex divisions of labour into a web of seemingly neutral and objective calculations that render human activities visible and assessable" (Ezzamel and Willmott, 1998, p. 366); they are

employed to provide information about the financial achievement of companies. Financial measures are expressed both in monetary units (see Homburg and Fassnacht, 1999) and in non-monetary (but still quantitative) terms such as managerial perceptions of sales growth (e.g. Hart, 1993).

To the best of the author's knowledge, there is no definition relating to the non-financial (soft or operational) measures either, suggesting that there is no clear distinction in the inter-disciplinary literature between the two types of performance measures (i.e. financial and non-financial). Yet, there is a common assumption in the literature that non-financial indicators provide non-financial information that helps monitor the attainment of non-financial (or operational) objectives such as say, product quality, customer satisfaction and loyalty. While non-financial information is generally measured in non-monetary units (De Toni and Tonchia, 2001) one should not be misled to identify non-financial with qualitative information; non-financial measures (e.g. time to market) can be quantitative measures too (see Azzone et al., 1991).

However, it needs to be stressed that there are some concerns regarding the distinction made above; in fact, the classification into financial and non-financial measures is not ideal and does not necessarily facilitate the measurement of performance. To be more specific, note that any business objective could be linked to more than one performance indicator (see examples in section 3.2) and indicators that measure the *same* objective (for instance, export sales) are able to fit into both groups namely, financial and non-financial. Export sales in particular, could be expressed in terms of (monetary) value as well as volume (i.e. units sold) and even market share. In fact, some studies consider market share as a financial (economic) measure (e.g. Katsikeas et al., 2000) while other studies as a non-financial indicator (e.g. Homburg and Fassnacht, 1999; Clark, 1999). Also, the notion of brand equity (i.e. involving such non-financial aspects as customer perceptions and attitudes, preferences and choice intentions towards a particular brand) could be captured in non-financial terms as well as financially (see Kokkinaki and Ambler, 1998; Ambler, 2000). Furthermore, in an NPD context, an analysis of the existing measurements of NPD performance (see Robben et al., 1999) identifies measures

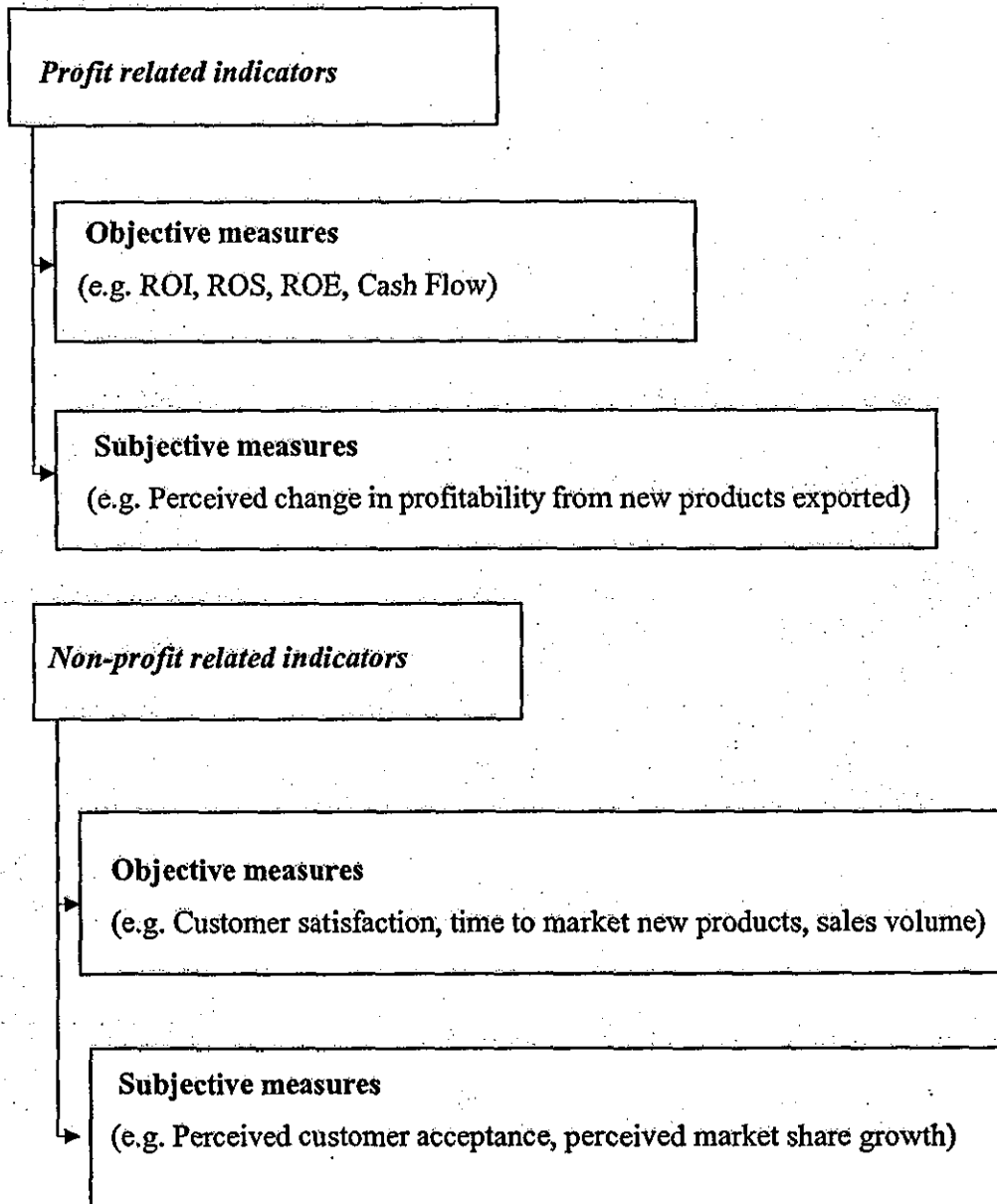
associated with more than one criteria of NPD success (i.e. financial, customer- and product-related criteria). For example, Robben et al., (1999) report that the market share measure is linked to both financial and non-financial (notably, customer acceptance) aspects of NPD performance. The former study also reports that the *same* indicator namely, short break-even time is linked to both financial and product-related NPD success; similarly, profit measures, keeping within budget and on-time launching measures are reported to relate to more than one criteria of NPD success. In light of the fact that a non-financial objective (e.g. export sales) can be captured by financial and non-financial indicators and some measures (e.g. market share) may be linked to both financial and non-financial performance domains, the classification into financial and non-financial categories does not suggest a distinction between two mutually exclusive groups of measures.

Given that such classification of indicators does not seem to be sufficiently clear, it may not facilitate researchers' export metrics selection, an issue that has been detrimental to export theory advancement (Zou et al., 1998; Lages and Lages, 2004). Therefore, it is questionable how useful it is to maintain the existing categorisation; while convenient, it remains simplistic and may confuse. A clear, theoretically anchored export measure classification (typology) would certainly help export researchers use "a common language" when measuring the attainment of export objectives (Katsikeas et al, 2000).

To be in line with the literature this study maintains the conventional terms (i.e. financial and non-financial) when referring to the objectives firms pursue (e.g. export sales, new product introduction, customer satisfaction are examples of non-financial objectives). However, it is also explicitly acknowledged that such categorisation (financial vs. non-financial) is not ideal when used to distinguish between different performance indicators. To overcome potential confusion, export indicators are placed into two different categories called, *profit* and *non-profit* (see examples in table 2.6 in section 2.7.3). The export performance indicators grouped into the former category capture the attainment of the financial objectives pursued, while the latter category includes indicators measuring the non-financial objectives' performance, accordingly. In this context, note that both

these aspects of performance can be assessed either objectively or subjectively (Homburg and Fassnacht, 1999). This is demonstrated in table 2.5 displaying the main types of performance measures used in the literature.

**Table 2.5: Classification of performance indicators.**





The objective and subjective approaches to performance measurement are defined and compared in section 2.7.2 (see below), before presenting evidence about the performance measures used by relevant studies in the export literature (see section 2.7.3).

### **2.7.2 Type of performance assessment: objective vs. subjective**

The literature distinguishes between two types of data based on their source; the primary (self-reported) data (i.e. collected directly from an organisation) and the secondary data, collected from sources external to the organisation (Venkatraman and Ramanujam, 1987). Primary data are either objective or subjective (perceptual) (e.g. Dess and Robinson, 1984; Hart, 1993; Mathews and Diamantopoulos, 1995). The former are provided by established internal systems/records or are systematically tracked by external agencies. The latter are managerial evaluations (judgments) of specific performance outcomes. Secondary data can also be both objective (e.g. annual reports compiled and sent to some agency) and subjective, such as perceptual evaluations of performance by industry experts (Venkatraman and Ramanujam, 1987).

Objective data are generated by objective measures while subjective data are provided by subjective (perceptual) measurements respectively. Most studies in a marketing context have not made a distinction between objective and subjective assessments (see Capon, et al., 1990) although both types of assessments present different advantages. The objective performance assessments in particular, are considered reliable because they allow researchers to compare firms without introducing the management's (subjective) point of view with regards to the variable in question (i.e. organisational performance). Thus, potentially biased judgments based on management's retrospective recall can be avoided when conducting performance comparisons (March and Sutton, 1997). However, objectives assessments can pose measurement problems too. Specifically, (i) it is not always easy to collect accurate, objective financial data; decision makers are often unwilling to provide them due to confidentiality reasons (Styles, 1998; Katsikeas et al., 2000). (ii) Also, the unit of analysis adopted (see more in section 2.7.9) makes it more difficult to collect objective data; to be more specific, company financial reports rarely

provide such data for their *export* ventures (Lages and Lages, 2004). Objective financial measurements are not typically available at the SBU level either, because they are computed from balance sheets that most firms do not provide at that level of analysis (Homburg and Fassnacht, 1999). (iii) Furthermore, there are business functions such as new product development, market development, R & D and personnel development that are critical to strategy success though they may not be “amenable to objective, quantitative measurement” (Govindarajan and Gupta, 1985, p.57). Although such performance is not usually measured in an export-related context, future studies may need to take it into account because “[e]xport performance considered from an explicit marketing frame of reference can result in restrictive and potentially misleading findings, as this assumes a *ceteris paribus* status to the remaining activities of the firm” (Katsikeas et al., 2000, p.497). (iv) With respect to conducting cross-firm export performance comparisons, objective measures may not be appropriate to use where different accounting practices apply (Lages and Lages, 2004); for instance, overhead allocation and depreciation may affect financial (profitability) measures such as ROI, ROA, EPS. (v) In addition, note that performance assessments are often idiosyncratic to the export firm and its context (Katsikeas, et al., 2000) and existing differences in terms of market, competition and technology characteristics may lead to cross-firm comparisons based on financial measures that do not have the same meaning across the various firms (see Lages and Lages, 2004). In this respect, it was reported that some exporters were even unable to decide on which financial measures they should employ (e.g. see Madsen, 1998). Also, (vi) using objective measures may affect findings because in most studies the cut-off point between export success and failure is set arbitrarily by the researcher (as opposed to export manager), often on the basis of the average of a sample drawn from a heterogeneous population of exporters (Matthyssens and Pauwels, 1996; Styles, 1998).

Bearing in mind that what one firm interprets as success, another may consider a failure (Lages and Lages, 2004), nearly half of the export performance-related studies have used subjective (perceptual) information (Katsikeas et al, 2000). Given that “a project or an export program is a success (or a failure) when the responsible manager, using his own criteria comes to this conclusion [then]...*perceived* performance is more important than

real performance" (Matthyssens and Pauwels, 1996, p.101, emphasis in the original). This study shares the same view; in fact, capturing export decision makers' (subjective) perspective of performance was considered important in a context where interpretations of success may differ (Kokkinaki and Ambler, 1997), when multiple objectives are pursued (Madsen, 1987; Meyer and Gupta, 1994) and the expectations of stakeholders (e.g. managers, stockholders, employees) may vary (Matthyssens and Pauwels, 1996). Placing greater emphasis on the managerial perspective when assessing export success is in line with the view that performance evaluations in a marketing context should reflect "management's satisfaction with the results of marketing activities" (Bonoma and Clark, 1988, p.64), while the concerns of other stakeholders are relevant only if they affect "performance or its measurement" (Shoham, 1998, p.61).

By contrasting objective and subjective responses, some studies reported that the latter do not actually correlate with the former (e.g. Sapienza et al., 1988; Jaworski and Kohli, 1993; Mathews and Diamantopoulos, 1995) and asked "questions concerning the presence of response bias" in subjective responses (Mathews and Diamantopoulos, 1995, p.835). However, high correlations between objective and subjective measurements are also reported in the literature; such findings suggest that both types of indicators are likely to measure the same construct (e.g. Dess and Robinson, 1984; Hart, 1993). Given that it is not absolutely certain whether subjective (perceptual) measures are suitable, unbiased surrogates of objective measures (Skarmas, et al., 2002), comparisons among the findings of relevant studies in a business context should be made with caution particularly when there has been no distinction in the type of performance measures used (Hart, 1993). In an export context, out of approximately one hundred studies reviewed by Katsikeas et al (2000), three quarters used objective measures, half of them used subjective measures and (about) a quarter employed both (i.e. probably due the evidence mentioned above that the two types of measures are correlated); from a sampling point of view, the former study suggested the need to complement objective with subjective performance indicators and examine "convergence" between the two types of assessment in exporting since "the relationship between objective and subjective export performance measures" (Katsikeas et al., 2000, p.501) has not been so far investigated.

### 2.7.3 Export performance measurement focus

Having made the distinction between financial and non-financial, objective, and subjective measurements, the attention now shifts to the export performance indicators used in the literature. In this section, the discussion relating to the measurement focus of export performance indicators is only general in nature (for an extensive discussion on export measures including any shortcomings they suffer from, see Katsikeas et al., 2000); the emphasis is actually placed on the time frame (see section 2.7.4) and frame of reference (see section 2.7.6) export performance assessments reflect (see critical issues in table 2.3).

Based on Katsikeas et al.'s (2000) review, the export performance indicators employed in the relevant literature are differentiated as follows:

#### *Profit-related performance*

- Export profit-related measures (e.g. export profitability, export profitability growth, export profit ratio)

#### *Non-profit related performance*

- Export sales-related measures (e.g. export sales volume, export sales turnover, export sales growth, export sales ratio, export sales ratio growth, export market share, export market share growth)
- Export product-related measures (e.g. new products exported, proportion of product groups exported, contribution of exporting to product development)
- Export market-related measures (e.g. export country/export market number, export market penetration, new export markets, contribution of exporting to new market development)
- Miscellaneous measures (e.g. years of exporting, number of export transactions, contribution of exporting to company reputation)
- Generic measures (e.g. perceived export success, achievement of export objectives, satisfaction with export performance, satisfaction with overall export performance).

The review study mentioned above suggests that the attainment of export objectives such as new products exported or new export markets has attracted little attention in the export literature. Instead, the measurement focus has been on export profit- (notably, export profitability, export profit growth, export profit ratio) and export sales-related indicators (notably, export sales ratio, export sales growth and volume); in fact, the latter are the most frequently used measures in the export literature. For illustration purposes, table 2.6 lists a sample of performance measures utilised by export-related studies including the most frequently employed export profit and export sales measures (according to Katsikeas et al.'s 2002 review). Note that the measures are also grouped in terms of the frame of reference and time horizon they reflect (see more in sections 2.7.4 and 2.7.6).

The diversity of export profit, export sales and product-related measures included in the table 2.6 demonstrates the fragmentation encountered in the export performance literature (Zou et al., 1998; Sousa, 2004) and explains why researchers find it difficult to reach an agreement on how to measure export success (Diamantopoulos, 1998). In fact, it can be suggested from this table that any export objective (e.g. export sales) can be assessed with more than one measure (e.g. export sales ratio, export sales growth) within a short and/or long-term horizon against different performance referents (see below).

**Table 2.6: Export performance measures**

	<i>Profit</i>	<i>Non-profit</i>	
	<i>Export profit-related metrics</i>	<i>Export sales-related metrics</i>	<i>Export product-related metrics</i>
<i>Time frame</i>	<i>Frame of reference: Own plan</i>		
<b>Short-term</b>	Export profitability, Export profit ratio, Export profit margin, Contribution of exports to profits***	Export sales volume, Export sales turnover, Export sales transaction size.	New products exported, Contribution of exporting to product development, Export sales volume of new products.
<b>Long-term</b>	Export profitability growth, Growth of export profit margin.	Export sales growth**	Export sales growth of new products
	<i>Frame of reference: Competition</i>		
<b>Short-term</b>		Export market share	
<b>Long-term</b>		Export market share growth.	
	<i>Frame of reference: Domestic Market</i>		
<b>Short-term</b>		Export sales ratio*	Export sales intensity of product, Proportion of product groups exported.
<b>Long-term</b>		Export sales ratio growth	

\* most frequently used measure employed by 61% of the studies reviewed by Katsikeas et al 2000

\*\*second most frequently employed measure used by 44% of the studies reviewed by Katsikeas et al 2000

\*\*\* percentage of company profits due to exports

#### 2.7.4 Time frame

The time horizon employed in evaluations of export success varies and it could be claimed to reflect, "the timetable associated with marketing strategy actions and the time lag and cumulative effects required for these to impact outcomes" (Morgan et al., 2002, p.370). Relevant studies have used three distinct time perspectives to capture export performance: current, historical and future (Shoham, 1998; Katsikeas et al., 2000). The former perspective corresponds to static (short-term) performance indicators capturing the current outcome of past actions (Brown and Laverick, 1994), while historical and future frames are associated with dynamic (longer-term) evaluations capturing performance changes (Chakravarthy, 1986). The former table 2.6 shows the short- vs. long-term time horizon reflected in the different export measures employed in the literature; for instance, export sales performance evaluations can be conducted in the short-term (i.e. measuring export sales volume) and long-term (i.e. measuring export sales growth). Most research studies actually focused on current export performance, followed by those using historical time frames (Katsikeas et al., 2000). A future-oriented time frame has attracted little interest; it seems to be implicitly assumed that historical and current export success can be extrapolated into the future (Matthyssens and Pauwels, 1996) although the majority of relevant studies have used cross-sectional (as opposed to longitudinal) samples that do not help determine linkages between past, current and future performance (Katsikeas et al., 2000). In a marketing context where the emphasis is placed primarily on shareholders and their interests, a future-oriented time frame seems to be more important in comparison (e.g. Srivastava et al., 1998; Doyle, 2000; Sheth and Sisodia, 2002). Although the importance of the time frame employed in export performance assessments has been acknowledged in the literature (e.g. Matthyssens and Pauwels, 1996), its implications for the conduct of cross-firm export performance comparisons have not been adequately considered in earlier operationalisations of export success. For example, the relative emphasis firms place on the time horizon (i.e. short vs. long term) is likely to be context-specific (see more on such contextual influences in sections 3.5 and 3.5.1) and may reflect the export managers' particular view of export success (see Madsen, 1998). Thus, export firms' performance assessments may differ

depending on the emphasis export decision makers place on short vs. long-term considerations when assessing any export objective's performance (Shoham, 1998; Styles, 1998). This is demonstrated in the following chapter where the proposed export performance framework is discussed (see section 3.3). In this context, note that paying greater attention to short-term (static, predominantly accounting-based) performance indicators overlooks the dynamic, changing nature of success (Matthyssens and Pauwels, 1996) in exchange for serving shareholders' short-term (financial) returns (Coates et al., 1993). The latter practice tends to be identified with an efficiency view of performance (introduced earlier in section 2.6) and has been heavily criticised in the broader business performance literature (see section 2.7.5); such criticism also applies to the export performance context because it is relevant to the selection of export metrics (see below).

#### **2.7.5 Criticism against the exclusive use of short-term accounting indicators**

Historically, the measurement of business performance emanated from the accounting discipline and took place within a labour intense work environment (Chakravarthy, 1986). Business success was perceived mainly in financial terms and coincided with the traditional microeconomic concept of profit maximisation as the ultimate business objective (Styles, 1998). Decision-making and performance evaluation were thus "kept, as far as possible, in line with economic efficiency" (Ezzamel, 1992, p.25). Due to the accounting domain's traditional link with the evaluation of company performance, earlier attempts to measure success focused predominantly on accounting-based indicators, the use of which has been instrumental to performance assessments (Ghalayini and Noble, 1996; Clark, 1999). For instance, accounting profit "appears to be widespread both in North America and the UK, although it is by no means the most widely used measure" (Ezzamel, 1992, p.25). As technological changes replaced labour with capital, companies were forced to compete on multiple fronts such as innovation and new product introduction, high product and service quality, low costs, on-time delivery, brand development, customer acquisition and retention (Otley, 1994; Clark, 1999; Ambler, 1999a,b; Tonchia, 2000; Sheth and Sisodia, 2002). Consequently, traditional accounting-based financial management controls became "increasingly peripheral to fundamental



needs of contemporary organisations" (Otley, 1994, p. 289). Managers needed additional assistance from non-financial indicators so as to collect essential information relating to operational performance (e.g. time to market new products, low defect rates, delivery speed rates, brand awareness, customer satisfaction and loyalty) to help them maintain company competitiveness (Ittner and Larcker, 1998a; Clark, 1999; De Toni and Tonchia, 2001).

Against this background, traditional accounting-oriented performance assessment practices attracted severe criticism (e.g. Hayes and Abernathy, 1980). It was argued that purely cost-oriented measurement practices lack the strategic focus required to achieve market success (Skinner, 1971) and could not serve firms in increasingly competitive environments where non-financial objectives are also essential for success (Ittner and Larcker, 1998a). The interdisciplinary literature actually refers to such accounting-oriented measurement practices as being historically focused (Dixon et. al., 1990) and reflecting only past performance (Eccles, 1991; Brown and Laverick, 1994). In this respect, it was pointed out that, "financial reports are usually closed monthly. Therefore, they are lagging metrics that are a result of past decisions" (Ghalayini, 1996, p.67). Given that decision-making requires forward estimates, "historical records may be unhelpful or misleading" (Ezzamel, 1992, p.38).

In addition to questioning the accounting measures' ability to provide managers with the means to deliver future company success, further criticism in the literature emphasised the fact that such indicators are short-term oriented (Hayes and Abernathy, 1980; Ezzamel, 1992), inward looking rather than externally (customer and competitor) focused (Kaplan and Norton, 1992) and do not facilitate continuous improvement (Fortuin, 1988; Lynch and Cross, 1991). Indeed, short-term goals such as "this year's financial results may be boosted to the detriment of long-term competitive position" (Goold and Quinn, 1990, p.50). In this respect it was also argued that a company's emphasis on budgetary control "stresses financial objectives and usually concentrates only on the coming twelve months. It does not deal with the company's progress relative to its competitors; it does not cover non-financial objectives that may be important to the eventual achievement of

secure profitability and competitive strength; it pays no explicit attention to longer-term goals and objectives; and it does not generally take account of social objectives such as health and safety, the physical environment, etc.” (Goold and Quinn, 1990, p.44).

As well as considering the exclusive use of short-term accounting indicators as outdated, the literature also points out that such financially-focused assessments reflect only part of a firm’s picture and fail to provide information on problem causes (Ittner and Larker, 1998a). For example, ROI (return on investment) or ROE (return on equity) cannot be claimed to identify specific areas that need management attention because “profit as a performance measure can only reveal that there is a problem, but provides little about the nature and the reasons for that problem” (Ghalayini and Noble, 1996, p.67). Moreover, profit “may even be irrelevant in some organisations; for example, in the service and the public sector, profit is not the central ultimate objective” (Globerson, 1985, p.639).

While there is no doubt about the importance of financial goals (and measures) for the assessment of business success (Kaplan and Norton, 1992), the over-emphasis on short-term financial indicators is considered harmful to the extent that it could even undermine the competitiveness of the industry (Hayes and Abernathy, 1980). The above comments expressed in the inter-disciplinary literature clearly reflect concern for the fact that assessments of company performance may encourage the attainment of short-term gains at the expense of effectiveness (i.e. the attainment of important company goals in the long run); for that reason, it was suggested that financial performance indicators should be accompanied by “other measures of strategic and competitive position that will give a more rounded overall view of the business” (Goold and Quinn, 1990, p.50).

#### **2.7.6 Frame of reference**

Using a performance referent in a business context reflects the fact that the nature of performance assessments is inherently relative; the former term refers to the performance standard set (or perspective adopted) “against which outcomes are actually assessed by managers” (Morgan et al., 2002, p.370). The various business stakeholders (e.g.

stockholders, managers, employees, customers) may hold widely different views regarding business objectives, performance expectations and performance referents employed (Morgan et al., 2002). With respect to managers in particular, Day and Nedungadi, (1994) report that they pay selective attention to their environment, utilising either internally oriented (e.g. firms' own goals) or externally oriented performance referents (e.g. firms' competitors and/or customers). In export marketing, relevant studies have used both internally and externally oriented referent frames (Matthyssens and Pauwels, 1996). In fact, four referents are noted namely, domestic market performance, temporal (i.e. referring to past performance), industry (e.g. competitive benchmarking) and firms' own goals (Katsikeas et al., 2000; Sousa, 2004). Table 2.6 above illustrates different performance referents reflected when different export measures are utilised; for instance, export sales performance could be measured against domestic market performance (e.g. using the export sales ratio), competition (e.g. using export market share) or own plan (e.g. using export sales volume). Although, there is no evidence to suggest that a particular referent is superior to any other, Katsikeas et al.'s (2000) review concludes that the most commonly used referents among studies are, domestic market performance followed by past performance, then industry and last, firms' own goals; yet, "various researchers adopt more than one frame of reference *simultaneously*" (Matthyssens and Pauwels, 1996, p.100, *emphasis in the original*). The attention paid on internal vs. external frames of reference may differ among firms (Morgan et al., 2002; Ambler et al., 2004) and is likely to be influenced by the contextual factors found in a given business context (see more in section 3.5 and 3.5.1). Moreover, there can be different performance evaluations for any export objective, depending on the differential attention exporters pay to the performance referents utilised (e.g. own plan vs. competition). For instance, it is shown in the former table 2.6 that an objective such as export sales could be assessed against competitors (e.g. by using export market share) and/or domestic market performance (e.g. by using export sales intensity). This is an issue that has not been adequately considered in earlier operationalisations of export performance and can have implications for the conduct of inter-firm export success comparisons particularly when multiple objectives are involved. Further discussion about the performance referents' involvement in assessments of export success follows in the

next chapter where the export performance assessment framework is presented (see section 3.3).

### **2.7.7 Multi-item measures and measurement perspective: criticism**

In addition to employing multiple performance measures to capture the different facets of export success, there have also been empirical attempts to develop and validate composite (multi-item) measures of export performance (e.g. see Cavusgil and Zou, 1994; Zou et al., 1998; Shoham, 1998; Styles, 1998; Lages and Lages, 2004) often combining up to four export profit- and export-sales related items (Leonidou et al., 2002). Examples of composite export performance measures are illustrated in table 2.7 below:

These empirical attempts to develop multi-item measures of export performance acknowledge the multi-dimensionality of export success (Matthyssens and Pauwels, 1996) as well as the fact that export firms may vary in terms of the emphasis placed on different dimensions (Shoham, 1998). Multi-item scales are considered superior to single item measures; the latter may be subject to fluctuations (Styles, 1998) while the former increase internal consistency reliability and decrease measurement error (Churchill, 1979). Although, the composite measures included in table 2.7 suggest methodologically sound improvements in an export performance assessment context (Diamantopoulos, 1998), an issue of concern (i.e. that also applies across the empirical export literature) is that these measures are typically imposed upon respondents; the latter being asked to describe their firm's performance along a set of indicators devised by researchers (as opposed to the exporters themselves). To be more specific, such multi-item measures suffer from a tendency noted in the export performance literature to select export performance indicators arbitrarily (Katsikeas et al., 2000). However, there is little empirical evidence to support the assumption that the indicators researchers utilise to capture export success (e.g. see table 2.6 earlier) are consistent with those export managers prefer to use in practice (Matthyssens and Pauwels, 1996).

**Table 2.7 Multi-item export performance measures**

<b>Export performance</b>			
<i>Dimensions</i>			
EXPERF scale (Zou, S., Taylor C.R. and Osland, G.E., 1998)	<i>Financial export performance</i>	<i>Strategic export performance</i>	<i>Satisfaction with export venture</i>
	<i>Three items:</i> Export profit, Export sales volume, Export sales growth	<i>Three items:</i> Contribution of venture to global competitiveness, Global strategic position, Global market share.	<i>Three items:</i> Satisfaction, Perceived success, Meeting expectations
Shoham, A., (1998)	<i>Dimensions</i>		
	<i>Export sales</i>	<i>Export profitability</i>	<i>Change in sales and profitability</i>
	<i>Five Items:</i> Export intensity, Export sales, Market share for most important market and product combination, <i>Satisfaction with</i> export sales, <i>Satisfaction with</i> export intensity	<i>Two Items:</i> Export profit margin, <i>Satisfaction with</i> export profit margin.	<i>Seven Items:</i> <i>Five-Year Change in:</i> export intensity, export sales, market share for most important market & product combination, export profit ratio. <i>Satisfaction with Five-Year</i> <i>Change in:</i> export intensity, export sales, export profit margin.
Cavusgil, T. and Zou, S., (1994) Also Styles, C., (1998) (refined C&Z's scale)	<i>Dimensions</i>		
	<i>Item 1:</i> Achievement of Strategic goals (weighted sum of seven items)	<i>Item 2:</i> Perceived success of export venture (single item)	<i>Item 3:</i> Annual export sales growth (%) over five years
STEP scale Lages, L.F. and Lages, C.R., (2004)	<i>Dimensions</i>		
	<i>Satisfaction with Short-term performance improvement</i>	<i>Short-term exporting intensity improvement (One year period)</i>	<i>Expected Short-term performance improvement (One-year period)</i>
	<i>Satisfaction with:</i> Export sales volume, Export profitability, Market share, Overall export performance	<i>Improvement in the:</i> (%) Export venture to total sales volume, (%) Export venture to total profitability	<i>Expected improvement in:</i> Export venture's sales volume, Export venture's profitability. Achievement of the venture's objectives, Satisfaction with the export venture

Instead, it has been acknowledged earlier (see sections 2.7.4 and 2.7.6) that firms' performance assessments may differ depending on the performance referent employed (Katsikeas et al, 2000; Morgan, et al, 2002) and/or the emphasis placed on short- vs. long-term considerations (Styles, 1998; Shoham, 1998).

Despite the statistically sound methodological underpinning of the aforementioned multi-item scales (see also relevant concerns below), the lack of an empirically based rationale underlying the multiple items selected, does nothing to prevent fragmentation in the measurement of export performance (Zou et al., 1998) as well as existing doubts about the validity of the resulting knowledge on the drivers of export success in the literature (Katsikeas, et al., 2000); hence one may question how productive it is to utilise such composite scales for export performance comparisons in different research contexts.

An additional methodological issue of concern relating to the construction of the composite export measures mentioned above is that the latter are based on reflective (effect) indicators (Styles, 1998). The reflective measurement perspective has been widely acknowledged in the relevant scale development literature (e.g. Churchill, 1979; Gerbing and Anderson, 1988; Spector, 1992) but has been criticised recently in exporting. Specifically, Diamantopoulos, (1999, p.454) argued that the adoption of a reflective perspective is "neither inherently superior nor necessarily the most appropriate measurement model. A formative approach to constructing multi-item measures (i.e. indices) is also potentially [if not more] attractive for modelling complex constructs such as export performance". The key difference between using a reflective (effect) and formative (causal) approach to capturing export performance concerns the causal priority between the latent variable and its indicators; it is briefly explained below (for a detailed discussion, see Diamantopoulos, 1999).

From a reflective measurement point of view, the assumption is that any changes in a theoretical construct will cause changes in *all* the indicators that measure it. Thus, given a variable of interest such as export performance (called EXP) and one indicator (e.g. export intensity) called IND, then the relationship between the (observed) indicator and

the (latent) EXP variable is represented by the following equation:  $IND = a EXP + e$  (where  $a$  is the expected effect of EXP on IND and  $e$  is the measurement error for the particular indicator).

If three indicators (say, export intensity, export profitability and export sales growth) were used to measure the variable EXP, then the same relationship would apply. Specifically:  $IND1 = a1 EXP + e1$ ;  $IND2 = a2 EXP + e2$ ;  $IND3 = a3 EXP + e3$

Note the assumption of linearity and no correlation between  $a$  and  $e$  (Styles, 1998). Thus, any change in the theoretical construct EXP would reflect on *all* its three (observed) indicators. By implication the adoption of a reflective perspective for the measurement of export performance suggests that there should be positive inter-correlations among the export indicators employed (Diamantopoulos, 1999).

Unlike the reflective (effect) perspective, the formative (causal) approach to measurement suggests that the (latent) EXP variable is defined (or formed) by its indicator(s). A formative specification suggests an index (Bollen and Lennox, 1991). Using the same example for convenience, the relationship between EXP and its three indicators is now specified as:  $EXP = b1 IND1 + b2 IND2 + b3 IND3 + z$  (where each  $b$  is the expected effect of each IND on EXP and ( $z$ ) is a disturbance term). Any change in *any* of the indicators (IND) will also change the latent variable EXP. By implication, the adoption of a formative measurement perspective does not require positive relationships among the export performance measures employed (Diamantopoulos, 1999).

As already noted, the multi-item (composite) scales available to the export researchers imply a reflective approach to measurement where the observed variables (i.e. export indicators employed) should exhibit positive inter-correlations (i.e. complementarities). However, the export literature acknowledges trade-offs among the existing efficiency, effectiveness and adaptiveness performance dimensions (see section 2.6); such trade-offs may result in conflicting (as opposed to complementary) relationships among the export performance indicators utilised (Matthyssens and Pauwels, 1996), which contradicts the assumption underlying adoption of a reflective (causal) perspective. Given that the latter

is unlikely to accommodate for the fact that “good performance in one dimension may mean sacrificing performance on another” (Styles, 1998), a formative specification seems to be more appropriate for constructing multi-item measures of export success. Such formative scales allow for performance trade-offs among export objectives pursued (Dimantopoulos, 1999) and have the potential to facilitate the conduct of cross-firm performance comparisons in different research settings/country contexts (for more information on formal procedures for assessing the quality of multi-item indices constructed from formative measures see Diamantopoulos and Winklhofer, 1999).

### 2.7.8 Performance dynamics

Recent developments in the strategic management (Wernerfelt, 1984; Porter, 1985; Day and Wensley, 1988; Prahalad and Hamel, 1990; Grant, 1991; Amit and Schoemaker, 1993; Teece, Pisano and Shuen, 1997) and marketing literatures (e.g. see Day, 1994; Hunt and Morgan, 1995, 1996; Srivastana et al., 1998) called attention to the resource-based view (RBV), a theory of competitive advantage that had yet to be integrated in exporting (Katsikeas et al., 2000; Balabanis et al., 2004). Indeed it is only recently that the contribution of various capabilities and resources (see below) to the achievement of competitive advantage in export markets was investigated (e.g. Morgan et al., 2004). In light of such advances in the inter-disciplinary literature, export performance could be viewed as a four-stage dynamic process consisting of, (i) sources of advantage (resources and capabilities), (ii) positional advantages, (iii) market- and (iv) financial-performance outcomes (Katsikeas et al., 2000; Morgan et al., 2002; Kaleka, 2002; Morgan et al., 2004). An account of what each particular stage may entail follows:

*Sources of advantage* can be of two types: “*resources*, representing assets controlled by the firm that are used as inputs to organizational processes; and *capabilities*, concerning the firm’s ability to combine, develop and use its resources in order to create competitive advantage” (Kaleka, 2002, p.275). With respect to the former type of source, Morgan et al. (2002) suggests there can be financial, physical, human, legal, organisational, reputational, informational and relational resources. In an export context, Kaleka (2002)



highlights four areas of resources for an export firm: physical assets (e.g. modern technology equipment, production capacity), scale of operation (e.g. turnover, number of employees employed in export operations), financial assets (funds allocated to export operations), and export experience (e.g. length of time exporting, number of ongoing ventures, export market knowledge).

From a marketing point of view, the second type of source (i.e. capabilities) was claimed to include individual, single task, specialised, functional and organisational capabilities (Morgan et al, 2002). In exporting, a firm's competitive capabilities include informational (e.g. acquisition of export market information, ability to make contacts in export markets), customer relationship building (e.g. understand requirements of customers, establish and maintain business relationships in export markets), product development (e.g. modifying, improving existing products, developing new products for export markets), pricing, communication and supply chain (e.g. identification of supply sources, building strong relationships with suppliers) (Kaleka, 2002; Morgan et al, 2004).

The identification, development, protection and deployment of such resources (Amit and Schoemaker, 1993) through competitive strategies (Day, 1994) leads to *positional advantages* for a firm relative to its competitors; these positions of advantage refer to product, service, price, cost, image and delivery (Morgan, et al., 2000) and reflect the fact that the locus of a firm's competitive advantage is in the market place (Porter, 1985; Kay 1993). Different resources and capabilities can be linked to different types of export positional advantages. For example, Kaleka's (2002) study examined cost, service and product advantages in exporting and linked empirically cost advantage to physical resources, supplier and customer relationship capabilities; service advantage was linked to financial resources, informational and customer relationship capabilities while a product advantage was linked to physical resources, scale resources, product development and customer relationship capabilities.

The reaction to realised positional advantages achieved in the market place, results in *superior market performance* including customer perceptions (e.g. brand awareness,

perceived quality), customer behaviours (e.g. purchase decisions), sales responses (e.g. sales volume, revenue) and market share (Morgan et al., 2002). In turn, any export market performance outcomes will result into *financial performance* measured conventionally in terms of cash flow, revenue or profit margin (Bharadwaj et al., 1993; Kaplan and Norton, 1992).

Each of the aforementioned stages of export performance should reflect different indicators (see more in section 3.2). While the development of indicators that are relevant to each stage is necessary (Morgan et al., 2002), the diversity of the respective performance information export firms may utilise suggests how difficult it is to provide a framework that would allow for valid cross-firm performance comparisons to take place.

#### **2.7.9 The unit (or level) of analysis**

Last among the critical export performance assessment related issues included in table 2.3, is the unit of analysis adopted when studying export success. It was thought appropriate to discuss the unit of analysis here (rather than in the research design chapter), because the former is implied throughout the next chapter dealing with how export performance is proposed to be assessed.

Organisational performance has been studied at an aggregate (corporate) level of assessment (e.g. using financial reports) as well as a disaggregated level looking for example into the direct production costs associated with a particular product (March and Sutton, 1997). Different performance indicators are appropriate for different levels of analysis (Cooper and Kleinschmidt, 1995). In an export context, adopting different levels of analysis may generate different insights on export success. Relevant studies have actually focused on the corporate (firm), the SBU (strategic business unit) and the export (product-market) venture as their unit of analysis. A study that focuses on the corporate level, usually "seeks for success determinants describing the overall export activity of a firm that generates various export ventures over time. The adoption of an export venture level, focuses on performance determinants of a particular product/market combination

(Matthyssens and Pauwels, 1996, p.96). When a firm exports two products into the same market (or when the same product is exported into two markets) then this is considered as two separate export (product-market) ventures (Cavusgil and Zou, 1994).

Although the selection of the firm as the unit of analysis has been more popular in comparison, there has been criticism against such selection (e.g. Cavusgil and Zou, 1994; Katsikeas et. al., 2000). Relevant arguments focus on the link between export success and its antecedents (e.g. marketing strategy and environmental-organisational factors) and question whether the former link is explained better when the export firm is the unit of analysis. These arguments maintain that focusing on the export venture makes more sense; they are summarised below.

(i) Performance variations exist across different export (product-market) ventures of the same firm. Given that both success and failure co-exist in the same firm, one could not assume that the same export marketing strategy (at the firm level) leads to the same results in all export ventures. Therefore, the individual product-market venture must be more suitable to use as a unit of analysis in order to obtain a more precise measurement of the export marketing-performance relationship (Cavusgil and Zou, 1994).

(ii) Aggregating all export (product-market) ventures' performance at the overall firm level discounts the variability of performance at the venture level (Katsikeas et al., 2000). Moreover, the environmental impact on export performance was claimed to be more appropriate to examine at the export venture level rather than the corporate level because environmental factors may differ across different ventures (Madsen, 1987). Also, potential export success determinants at the firm level (e.g. organisational culture, risk-taking climate) could be "considered as contextual conditions for the different ventures. The influence of these factors on the export performance is hard to understand, unless one studies different ventures within one company" (Matthyssens and Pauwels, 1996, p.97). In this respect, it has been proposed to investigate pairs of export ventures (i.e. success and failure) selected from each export firm (Madsen, 1989).

Nevertheless, the corporate level could not be easily dismissed because there are several limitations associated with the use of the export venture too (see arguments below). Given that a similar debate has taken place in a NPD (new product development) context involving the company vs. project levels of analysis, some of the arguments expressed in that literature (notably by Cooper and Kleinschmidt, 1995) are also integrated below, as they can, by analogy, be adapted to help the selection of the most relevant unit of analysis in an export context. Collectively taken, the arguments against the export (product-market) venture consider such level as: first, impractical to use because it can not offer accurate estimates of a firm's overall export performance; second, inadequate to capture relationships between important export performance drivers and the actual performance; third, insufficient to provide a long-term view of export success. Specifically:

(i) The conclusions drawn from cross-firm success comparisons based on export ventures' performance may not be valid. Indeed, success at the venture level can be somewhat different from success at the firm level. Specifically, a large exporter can have a string of successful new product-market ventures; yet, these may be relatively small operations that add only incrementally to the firm's total operation that can be mediocre overall (Cooper and Kleinschmidt, 1995).

(ii) Also, it was claimed that it is difficult to provide an accurate estimate of a firm's overall export performance, unless a sample of export ventures per export firm is analysed (Katsikeas, et al., 2000). This is not easy to apply as explained by the following example. Let us assume that a firm exports two products in the same market (i.e. two ventures), and these two product ventures share the same product development process, distribution and promotional costs. In this context, it can be very difficult to measure objectively (and determine the costs associated with) each individual venture's performances; for instance how could one (manager or researcher) calculate each venture's ROI (and subsequently link it to some antecedent variables too)? Bearing in mind that export firms' venture performance assessments are not likely to rely on objective indicators (Madsen, 1998; Lages and Lages, 2004), it would be essentially

impractical to focus on capturing the performance of an export firm's ventures when the same firm may export hundreds of different products to a great variety of export markets.

(iii) Firm specific advantages such as knowledge gained through experience can be enhanced with both successful ventures and failures (Mathyssens and Pauwels, 1996). In fact, a firm's future success may rely on organisational learning, a process that is expressed at the firm level rather than a venture involving one particular product and an export market (Cavusgil and Zou, 1994; Mathyssens and Pauwels, 1996). Indeed, there can be company practices that are not apparent at the export venture level but are important to success. For instance, a firm's strategic emphasis on product innovation can be an important antecedent of export competitiveness and success but could not be assessed at the (product-market) venture level. Also note that focusing on the firm level would make it easier for a study to control for any extraneous variables such growth of domestic market (Katsikeas et al., 2000).

(iv) From a methodological perspective, a research design that favours the use of pairs of export ventures (successes-failures) from each firm (Madsen, 1989) so as to study the impact of contextual (e.g. organisational, managerial or export related) characteristics on export venture performance (Mathyssens and Pauwels, 1996), would be objectionable when such likely drivers of success will be common to both the successful and failed ventures selected (Cooper and Kleinschmidt, 1995). For instance, let us assume that a pair of export ventures (success-failure) is selected from each firm of a study's sample, in order to examine how a characteristic such as the export firms' organisational culture and climate (e.g. Dunn et al., 1994) impacts on export ventures' success. Also, suppose that only half of the firms included in the sample are influenced by a culture that emphasises clear organisational values and goal orientations. Hence, one half of the successful (and failed) ventures would appear to have taken place within the particular cultural context studied and the other half of successes (and failures) would not. In this context any impact of culture on export success may not emerge in the subsequent analysis (i.e. it may be cancelled out) just because of the nature of the research design (Cooper and Kleinschmidt, 1995). Had the study used the same sample of exporters but focused on the

corporate rather than the venture level, the research implications relating to the effects of culture and climate on export performance could well be different.

v) Furthermore, recent developments in the assessment of marketing performance describe the latter as a four-stage process that includes resources and capabilities, positional advantages, market and financial performance outcomes (see Morgan et. al., 2002). Assets such as an export firm's resources and capabilities are found at an aggregate (firm) level (see Kaleka, 2002) but can affect performance at the individual venture (product-market) level; hence, the corporate level of analysis facilitates investigation into the drivers of firms' success and allows for a more "comprehensive" assessment of success. For instance take firms' adaptiveness; the ability to adapt is important in changing environments (Chakravarthy, 1986) and can be manifested in strategic initiatives involving responses to competition and/or new product and market development (Styles, 1998). The adaptiveness of firms could not be easily assessed at the venture level; in this respect, it could be argued that the venture level would only offer a limited picture of an export firm's performance.

(vi) Also, it could be claimed that the emphasis on the performance of export ventures is less than optimum, as the ventures provide little, if any, insight into the overall, long-term performance of an export firm (Katsikeas et al., 2000). While this may be less of a problem when the interest is on short-term export performance only (e.g. see Lages and Lages, 2004), it certainly contrasts with suggestions in the literature for a dynamic (long-term) assessment of export success (e.g. Matthyssens and Pauwels, 1996). Indeed, when studying "the corporate export activity, one should look at the long term management of the various export ventures a company is engaged in" (Matthyssens and Pauwels, 1996, p.96) an insight which is provided only when the focus of investigation is the improvement of the overall performance of a firm.

To conclude, recall that this study's aim is to develop and test empirically an export performance assessment framework that will facilitate the conduct of valid performance comparisons across firms and help the study of export success. Although an investigation

at the export venture level can yield interesting insights into what drives success at that particular disaggregate level (e.g. see Cavusgil and Zou, 1994), the aforementioned aim is better served by focusing on the aggregate (rather than the venture specific) picture of export success. Thus, in light of the arguments discussed above, the export firm was thought to be the appropriate unit of analysis for this research.

#### 2.7.10 The role of the context in export performance assessments.

In addition to the above key issues relating to export performance assessments (see table 2.3) it is important to bear in mind that an organisation "is in a constant renegotiation with its environment and constituents. It is a dynamic environment" (Euske et al., 1993, p.295). This statement suggests that an organisation is subjected to different contextual factors. Such factors can influence an organisation's planning goals (Ambler and Kokkinaki, 1997) and strategies (Cavusgil and Zou, 1994) and may also influence how the attainment of such goals will be assessed (Day and Nendugadi, 1994; Evans, 2004). For example, it has been suggested that "assessments of a firm's performance need to account for differences in industry (market) conditions" (Lenz 1981, p.139). While the empirical literature in exporting has highlighted a number of internal (firm-specific) and external (environment-specific) factors acting as predictors of *actual* (i.e. achieved) success (for reviews, see Schlegelmilch and Ross 1987; Madsen 1987; Aaby and Slater 1989; Gemünden 1991; Chetty and Hamilton 1993; Cavusgil and Zou 1994; Leonidou, Katsikeas and Piercy 1998; Zou and Stan 1998), it has yet to be appreciated that contextual factors are also likely to affect how managers *assess* their firms' success. In fact, little attention has been paid to "the idiosyncrasies of the exporting organisation and the environmental factors surrounding the export activity" (Katsikeas, et al., 2000, p.505) thereby resulting into such conventional practices (mentioned earlier in chapter 1) as to "impose" -without justification- any set of measures on respondents and ask them to rate their firms' performance (Matthyssens and Pauwels, 1996; Katsikeas, et al., 2000). However, it has been acknowledged in the export literature that "there may be interactive effects between performance measures and the location of either the origin market or the destination market" (Thach and Axinn, 1994, p.12); this suggests that performance

assessments may vary among firms (Ambler and Kokkinaki, 1997; Katsikeas, et al., 2000) that often operate in several different product markets and face multiple export market environments (Zou and Stan 1998).

The role that the context (internal and external) may play in performance assessments has been acknowledged in the marketing literature too (e.g. see Day and Nedungadi, 1994; Kokkinaki and Ambler, 1999; Clark, 1999; Ambler et al., 2004). According to Morgan et al (2002) there are eight such potentially influential contextual factors; four internal (company-specific) and four external (environmental). The former group includes antecedents such as information availability (concerning the ease with which performance data can be collected), corporate performance monitoring requirements (concerning performance information corporate management requires), SBU autonomy (concerning the flexibility general/marketing managers have in terms of influencing the relevant information provided) and stakeholder power (concerning the influence different stakeholder groups exert in the selection of performance referents/standards firms set). Furthermore, Morgan et al (2002) point out a group of environmental factors that might be important for performance assessments: environmental uncertainty (referring to the predictability of the environment where managers operate), industry dynamics (concerning the time periods found between the different stages of the marketing performance process), competitor attributes (referring to characteristics, behaviors and structure of competition in an industry) and customer attributes (involving the characteristics and concentration of the customer base). In light of the fact that assessments of export performance may be influenced by the context (Madsen, 1987), the role of the latter has to be explicitly considered when assessing export success. This role is likely to be multiple (Morgan et al., 2002) and associated with aspects such as the importance of the export objectives pursued, the differential attention paid to the frames of reference and time horizons employed when assessing export success (see more in the next chapter, section 3.5 and 3.5.1).



## 2.8 Summary

Following the definition, purpose and importance of business performance measurement, this chapter presented an overview of the business performance literature; then, it focused on several key issues relating to the assessment of export performance and highlighted limitations of earlier export performance operationalisations. The discussion included issues relating to export objectives, performance dimensions, financial and non-financial export performance indicators, the type of assessment employed, the dynamics of performance, the time frame, the frame of reference, the contextual factors, the measurement perspective and the unit of analysis adopted in export performance assessments. The insights gained from this review contributed to the development of the comprehensive conceptual framework of export performance assessments presented in the next chapter.

## **CHAPTER 3**

# **CONCEPTUAL FRAMEWORK**

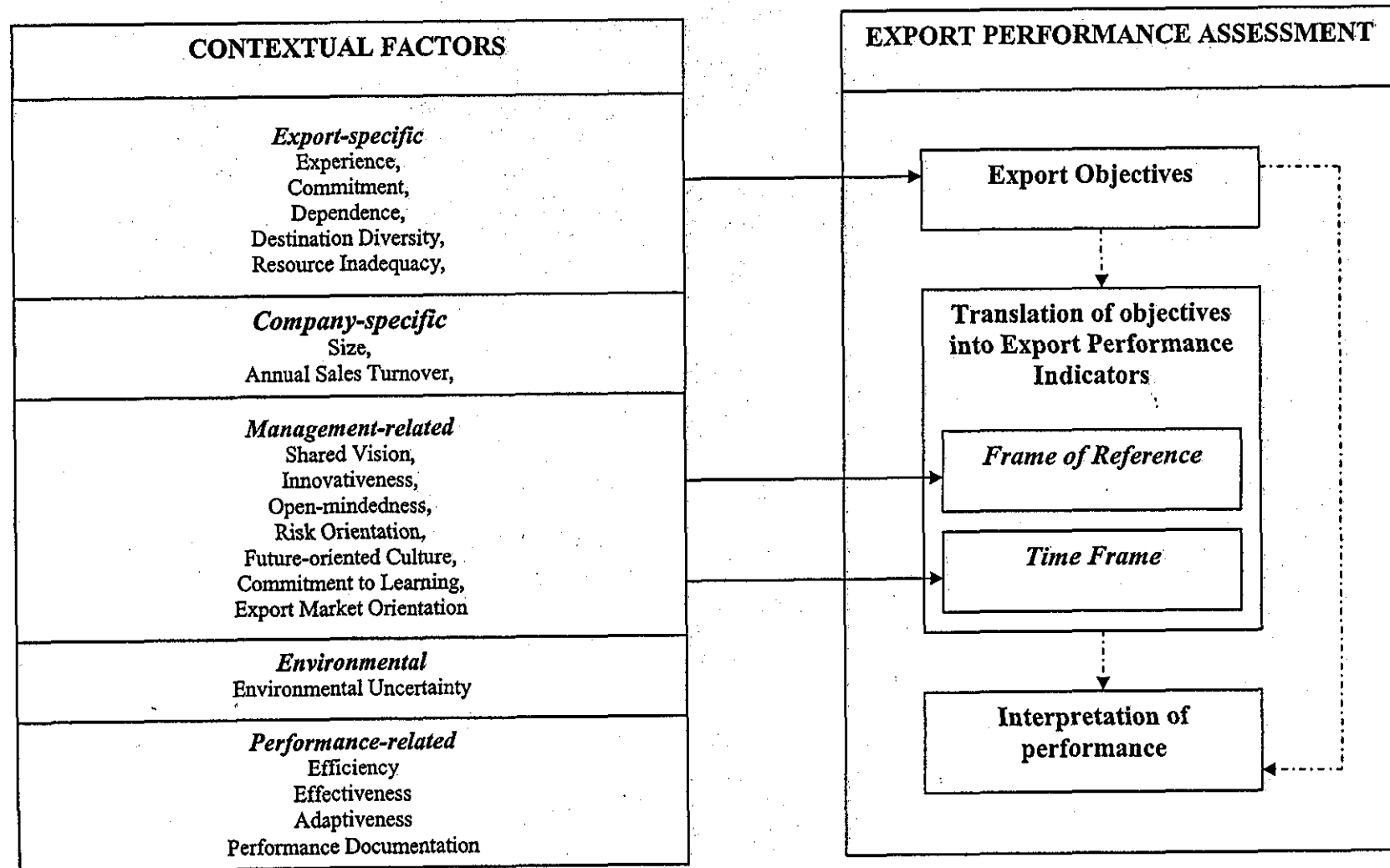
### **3. THE ASSESSMENT OF EXPORT PERFORMANCE: CONCEPTUALISATION**

The focus of this chapter is on the conceptualisation of export performance assessments. The chapter starts with the rationale underlying the framework; it continues with a detailed discussion of its different parts and a brief introduction to the Analytic Hierarchy Process (AHP) method used. The chapter concludes with several hypotheses involving contextual factors and export performance assessments.

#### **3.1 Introduction to the conceptual framework.**

The literature review pointed out several key issues to be taken into account when operationalising export performance (see table 2.3) as well as limitations of earlier operationalisations of the construct (e.g. see section 2.7). A lack of a comprehensive approach to the assessment of performance is evident in the literature and does not help the conduct of valid export success comparisons among firms (Zou et al., 1998). A new approach to the conceptualization of export performance assessments is clearly needed. This should acknowledge the multi-faceted nature of the construct (Kaplan and Norton, 1992; Matthyssens and Pauwels, 1996) in terms of the multiple and differentially important export objectives firms may pursue (see section 3.2) as well as the different performance dimensions along which, the attainment of any export objective could be interpreted (see section 2.6). In addition to integrating past knowledge relating to the performance measurement of export objectives (e.g. see section 2.4 and 2.7.3), such conceptualisation needs to reflect advances in the broader conception of organizational performance evident in the resource-based view of competitive advantage (see more in section 2.7.8), a theory that has to be integrated in exporting (see Morgan et al, 2004); moreover, it needs to address the issue of performance trade-offs among objectives (see section 2.6) and take into account the likely influence of contextual factors on exporters' assessments of performance (see section 2.7.10). Last, in response to recent calls for better measures of marketing performance (Ambler et al, 2004), the development of a new measure of export performance should be "relevant to management needs and implementable in different corporate contexts" (Morgan et al. 2002, p.366).

**Figure 3.1: CONTEXTUAL FRAMEWORK FOR THE ASSESSMENT OF EXPORT PERFORMANCE**



Against this background, insights from the exporting, strategy, marketing performance, accounting, operations management and operational research literatures have been integrated in order to contribute to the development of a comprehensive conceptual framework for the assessment of export success. This is shown in Figure 3.1 offering an overview of the assessment of export performance in context. The framework consists of two main components (parts) and addresses three key questions (see below).

Starting from the right (see Figure 3.1), the framework offers a representation of export performance assessments. It draws attention to three inter-linked aspects constituting the process of a firm's export performance assessment. Specifically, the first stage involves (i) the export objectives a firm sets and pursues; it is followed by the second stage namely, (ii) the translation of objectives into export performance indicators and leads into the third stage involving (iii) the interpretation of export performance. Figure 3.1 actually shows that interpretations of export performance result from the mode of assessment (i.e. the emphasis on the frame of reference and time frame) employed to track the attainment of export objectives. Moreover, such interpretations are directly influenced by the export objectives pursued (see more in the relevant conceptualisation presented in section 3.3).

To be more specific, the first conceptualisation (see section 3.2 below) involves the issue of export objectives (see (i) above); it strives to shed light into the complexity of export success by modelling multiple export objectives. In fact, a theoretical link between export objectives and measures is developed as an attempt to help understand export performance assessments and offer an answer to *what* aspects of performance to measure (Diamantopoulos, 1998). The second conceptualisation (see section 3.3) develops a link between objectives, their translation into export performance indicators (see (i)-(ii) above) and the interpretation of export performance (see (iii) above). This particular conceptualisation aspires to provide an answer to *how* the attainment of export objectives should be assessed (Styles, 1998). It proposes the translation of export objectives into indicators by looking into the emphasis placed on the frame of reference and time frame involved in the evaluation of any export objective's attainment; it leads to an index that aims to facilitate valid cross-firm export performance comparisons.

On the left (see Figure 3.1), the conceptual framework includes groups of contextual factors (five groups altogether) whose role in the assessment of export performance is likely to be influential (see more in section 3.5 and 3.5.1). Specifically, Figure 3.1 explicitly depicts links between the contextual (antecedent) variables (shown on the left) and the export performance assessment (shown on the right of Figure 3.1) notably, the relative importance of export objectives and the relative emphases placed on the frame of reference and time horizon utilised when translating objectives into export indicators. In line with the study's research objectives (see section 1.2) the contextual variables' involvement in the proposed framework (see relevant hypotheses in section 3.5.1) helps address the final key question namely, *why* the assessment of export success should be conducted in a specific (i.e. the proposed) way (Diamantopoulos, 1998).

The conceptual framework is discussed below, starting with the export performance assessment (shown on the right side of Figure 3.1) and the issue of export objectives.

### **3.2 Export performance assessment: Export objectives.**

Acknowledging the multi-faceted nature of export performance (Cavusgil and Zou, 1994; Styles, 1998; Zou et al., 1998) and the fact that the "there is little guidance to researchers regarding which aspects of performance to measure" (Diamantopoulos, 1998, p.3), the next conceptualisation attempts to model export objectives and explain the complexity surrounding export success' multidimensionality (see key issues in section 2.4). This is achieved with the construction of a matrix called Performance Dimensions/Performance Continuum (PD/PC) which seeks to represent all different kinds of export objectives as expressed by their various measures (see figure 3.2). The PD/PC matrix is capable of accommodating different export objectives and their performance assessments. Specifically, it links export objectives, export performance measures and the underlying (generic) dimensions and stages associated with any performance assessment (see also Morgan et al., 2002).

Note there are several implicit assumptions behind the construction of the PD/PC matrix; they derive from the literature review and are: (i) export performance is a multi-dimensional phenomenon (see section 2.3) and (ii) a dynamic process (see section 2.7.8); also (iii) any set of export performance indicators may reflect different export objectives. In this context, while *different* export indicators can be used to assess the *same* export objective (see for example the export sales objective in table 2.6 in section 2.7.3), any export objective can be described by (a) the different performance *dimension(s)* its assessment reveals and (b) the *stage(s)* of the performance continuum that its various measures capture.

Figure 3.2 illustrates the basic thinking behind the PD/PC matrix for the export sales objective as reflected in different performance indicators. Note that these are purely illustrative as different export sales-related performance measures (e.g. export intensity and export market share) could also be included in the PD/PC matrix. Similarly, the matrix can readily be applied to other types of export objectives (e.g. export profit and customer satisfaction) and their associated measures. The reason is that, as will be explained below, the axes of the PD/PC matrix reflect the *generic* characteristics of *any* export performance indicator.

The PD/PC matrix actually suggests that any export objective's assessment may reflect different performance dimensions as well as capture different performance dynamics. The pair of axes composing this matrix is described below.

**Figure 3.2: Performance Dimensions (PD/PC) Performance Continuum Matrix: an example using Export sales**

<i>Performance Continuum</i>	<i>Performance Dimensions</i>		
	<i>Efficiency</i>	<i>Effectiveness</i>	<i>Adaptiveness</i>
<i>Sources of Advantage</i>		<ul style="list-style-type: none"> <li>(%) Export Sales invested in R&amp;D relative to last year</li> </ul>	
<i>Positional Advantages</i>	<ul style="list-style-type: none"> <li>(%) Export Sales Delivered On-time</li> </ul>	<ul style="list-style-type: none"> <li>Change in Export Sales Cost relative to competition</li> </ul>	
<i>Market Performance Outcomes</i>		<ul style="list-style-type: none"> <li>Change in Export Market Share</li> </ul>	<ul style="list-style-type: none"> <li>Export Sales Growth from new products</li> </ul>
<i>Financial Performance Outcomes</i>	<ul style="list-style-type: none"> <li>Export Sales Margin</li> </ul>	<ul style="list-style-type: none"> <li>Change in Export Sales Margin</li> </ul>	<ul style="list-style-type: none"> <li>Export sales revenue from new products relative to plan</li> </ul>

*Performance Dimensions*

Figure 3.2 above suggests that using any set of export performance indicators to capture export success would reflect three core performance dimensions namely, efficiency, effectiveness and adaptiveness (see relevant definitions in table 2.4). In a marketing context, managers have been found to assess performance drawing on all three dimensions to different degrees (Clark, 1999; 2000). Depending on the emphasis placed on each particular performance orientation export firms' performance assessments may differ. The PD axis of the matrix allows for such differences among export firms because



it accommodates for any set of performance measures firms may employ. Specifically, the emphasis placed on a particular set of export measures to monitor any given set of export objectives will ultimately, highlight the (specific) performance orientation(s) that explain(s) how a firm is looking at its export success. In addition, the interplay among the aforementioned performance dimensions (Al-Khalifa and Morgan, 1995) may result into trade-offs among the different measures utilised; although managers may be required to “perform well on multiple dimensions, actions taken to improve one measure may lead to short term declines in other performance measures” (Ittner and Larcker, 1998a, p. 229). Yet, further information on the three-dimensional conceptualisation of performance adopted here and the potential trade-offs among dimensions and associated performance measures can be found in section 2.6. This is to avoid repetition on an issue that has been discussed in detail earlier.

#### *Performance Continuum*

Drawing on recent developments in the strategic management (Wernerfelt, 1984; Porter, 1985; Day and Wensley, 1988; Prahalad and Hamel, 1990; Grant, 1991; Amit and Schoemaker, 1993; Teece, Pisano and Shuen, 1997) and marketing literatures (e.g. see Day, 1994; Hunt and Morgan, 1995, 1996; Srivastana et. al., 1998), export performance could be seen as a four-stage dynamic process consisting of, (i) sources of advantage (resources and capabilities), (ii) positional advantages, (iii) market- and (iv) financial-performance outcomes (Katsikeas et al., 2000). As mentioned earlier (see section 2.7.8), such process-based view of performance has been already adopted in a marketing performance assessment context (see Morgan et al. 2002) but can largely reflect the exporting context too (e.g. Kaleka, 2002; Morgan et al, 2004). Thus, this study proposes a multi-stage (dynamic) perspective of export success thereby reflecting the view that “both the conceptual and operational definitions of export performance should depend on the more general and inclusive definitions of firm and marketing performance” (Shoham, 1998, p.60). To be more specific, the second axis of the PD/PC matrix (see figure 3.2) represents *the stage* in the performance continuum captured by a particular export performance indicator.

As Hunt and Morgan (1995, p.13) point out, "competition is the constant struggle among firms for a comparative advantage in resources that will yield a market place position of competitive advantage and thereby, superior financial performance"; hence, the Performance Continuum (PC) explicitly accounts for "possible linkages between firm competencies, business strategies and performance measures" (Thach and Axinn, 1994, p.8). Table 3.1 below describes the stages in the performance continuum and also provides illustrative examples of measures relevant to each stage of the continuum; yet, more research is needed on measures firms adopt across the different performance stages (Morgan et al., 2002) so as to help populate the PD/PC matrix.

The focus of any export firm's performance assessment can be placed across the four stages of the performance continuum; the relative attention paid to each stage will be reflected in the specific performance indicators associated with that particular stage. Given that *any* export indicator can reflect different performance dynamics (stages), it could be argued that any *set* of export indicators may reveal information concerning (a) the characteristics and types of the export firm's resources and capabilities based processes and/or (b) the firm's positional advantages on the export front comprising aspects of value offered to customers and related costs relative to competition, and/or (c) performance related to financial outcomes created by market-based performance outcomes. In this context, note also that there is a distinction between leading and lagging indicators (Ambler, 2000); the former refer to performance drivers (e.g. see (a) and (b) above) and the latter to outcomes (see (c) above). Illustrative examples of indicators corresponding to the different stages of the Performance Continuum are shown below.

**Table 3.1: Performance Continuum**

Stages	Illustrative Definitions		Illustrative Measures
<p><b>Sources of Advantage</b></p>	<p style="text-align: center;"><i>Resources</i></p> <ul style="list-style-type: none"> <li>• The individual resources of the firm include items of capital equipment, skills of individual employees, patents, brand names, finance, etc. (Grant, 1991)</li> <li>• Those tangible and intangible assets which are tied semipermanently to the firm, at a given time (Wernerfelt, 1984).</li> <li>• Firm specific assets that is difficult or impossible to imitate (Teece, Pisano, Shuen, 1997)</li> </ul>	<p style="text-align: center;"><i>Capabilities</i></p> <ul style="list-style-type: none"> <li>• Information based tangible or intangible processes that are firm specific and are developed over time through complex interactions among the firm's resources. (Amit &amp; Schoemaker, 1993)</li> <li>• Complex bundles of skills and collective learning, exercised through organisational processes that ensure superior co-ordination of functional activities (Day, 1994)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Number of patents registered</i></li> <li>• <i>Percentage of full-time employees engaged in exporting</i></li> <li>• <i>Investment in NPD as a % of export sales</i></li> <li>• <i>Time to market</i></li> <li>• <i>Market information systems-related expenditure.</i></li> </ul>
<p><b>Positional Advantages</b></p>	<ul style="list-style-type: none"> <li>• Positional superiority based on the provision of superior customer value and/or the achievement of lower relative costs (Day and Wensley, 1988).</li> <li>• The realised export strategy of the firm concerning the value delivered to export customers and the costs incurred by the firm relative to its competitors (Katsikeas, Leonidou and Morgan, 2000).</li> </ul>		<ul style="list-style-type: none"> <li>• <i>Product quality</i></li> <li>• <i>Production cost versus competition</i></li> <li>• <i>Order processing lead time</i></li> <li>• <i>Delivery speed</i></li> <li>• <i>Rate of defects</i></li> <li>• <i>Quality of after sales service</i></li> </ul>

<p><b>Market Performance Outcomes</b></p>	<ul style="list-style-type: none"> <li>• The consequences of customer behaviour that are considered desirable by firms. (Srivastava, Shervani and Fahey, 1998).</li> <li>• They are customer and competitor responses to the firm's realised export positional advantages. (Katsikeas, Leonidou and Morgan, 2000).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Brand image</i></li> <li>• <i>Change in Customer satisfaction</i></li> <li>• <i>Percentage of customer retention</i></li> <li>• <i>Export market share</i></li> <li>• <i>Export sales growth</i></li> </ul>
<p><b>Financial Performance Outcomes</b></p>	<ul style="list-style-type: none"> <li>• They are the reward from past advantages after the current outlays needed to sustain or enhance future advantages have been paid (Day and Wensley, 1988).</li> <li>• The economic costs and benefits to the exporting firm of the achieved level of export market performance (Katsikeas, Leonidou and Morgan, 2000).</li> </ul>	<ul style="list-style-type: none"> <li>• <i>ROI</i></li> <li>• <i>ROE</i></li> <li>• <i>EPS</i></li> <li>• <i>ROS</i></li> <li>• <i>ROCE</i></li> </ul>

Locating different export indicators at the different stages of the performance continuum is also consistent with recent trends in the marketing metrics literature suggesting “a general move away from ultimate financial output measures such as profit and sales and toward measures earlier in the input - to - output sequence...that in turn lead to financial outputs” (Clark, 1999, p.717). More specifically, the Performance Continuum (PC) dimension of the matrix, incorporates a well-established view in the literature (e.g. Buzzel and Gale, 1987; Szymanski et al., 1993; Anderson et al., 1997) indicating that market performance outcomes are antecedents of financial performance outcomes. The matrix is also in line with developments in the operational and production management literature where it has been argued that firms have moved from output (financial) measures to process based (operational) measures (e.g. quality, cycle time, delivery, reliability) in order to be able to remain competitive in the market place (Euske et al., 1993). Such important process based factors are called critical success factors (CSF) in the relevant literature and they are related to “the few areas where things *must* go right for the business to flourish” (Globerson, 1985, p.640, emphasis in the original).

By proposing a link between export objectives and export performance indicators, the PD/PC matrix provides researchers with conceptual guidance regarding *what* to measure. In fact, the matrix should be able to assist researchers’ export measure selection when evaluating the attainment of *any* export objective(s). However, more research is needed on the measures export firms use to capture different stages of performance (Morgan et al., 2002) so as to be able to populate all the boxes in the PD/PC matrix. In addition it is important to look into the relationships among such measures and the associated performance dimensions (Morgan et al., 2002) because the multidimensionality of export success may lead “to the possibility that measures conflict in nature” (Mathysens and Pauwels, 1996, p.105). Potential trade-off interactions among efficiency, effectiveness and adaptiveness (see PD axis) may also reflect in measures included in the PD/PC matrix and foster selection of conflicting indicators; in this respect, relevant evidence from export practice would be useful in terms of helping deal with the important issue of performance trade-offs (see more in section 2.6).

### **3.3 Export performance assessment: Translation of export objectives into indicators and interpretation of performance**

Shifting attention from the modeling of export objectives to their translation into indicators and the interpretation of export performance (see Figure 3.1), the following conceptualisation aims to answer *how* performance can be actually assessed. Bearing in mind the multidimensionality of success (Morgan et al., 2002) already acknowledged above (see section 3.2), it has been argued that “to attempt to find a generally valid operationalization of export performance would... probably be erroneous” Madsen (1987, p.183). The present study nevertheless maintains that it is possible to find an *approach* to operationalising export performance (i.e. a broad scheme capable of accommodating different export objectives and modes of assessment).

Note that the conceptualisation suggested below has several underlying assumptions that derive from the literature review. Specifically, at any one time, (i) different exporting firms follow strategies aimed at different (and perhaps conflicting) export objectives (see section 2.5), (ii) within an export firm, different objectives have differential importance that may change over time (see sections 1.1 and 2.5), (iii) the attainment of any export objective can be measured by using different performance indicators (e.g. see table 2.4); (iv) export firms' performance assessments may differ depending on the emphasis placed on the frame of reference (see section 2.7.6) and time frame (see section 2.7.4) employed when assessing the attainment of any export objective; hence, v) the incorporation of managerial (subjective) evaluations (see section 2.7.2) of the actual levels of attainment is needed to help interpret export success (see more below).

The conceptualisation consists of two key matrices corresponding to the translation of export objectives into measures and the interpretation of export performance respectively (see conceptual framework in Figure 3.1) followed by the development of a composite measure of export performance (an index); this computation of the index is based upon the information provided by these two matrices. The first matrix is the Performance

Measurement (PM) Matrix (see figure 3.3 below) which describes the *objective* (actual) performance measurement of a *particular* export objective in a specific context. Given a particular objective of interest (e.g. export sales), the attainment of this objective can be comprehensively described by the frame of reference (i.e. own plan versus competition) and time perspective (i.e. static vs. dynamic) involved. The dimensions of the matrix reflect the view that "performance is a relative concept defined in terms of some referent employing a complex set of time based and causality based indicators" (Euske and Lebas, 1998, p.338) and that "performance relative to competitors is at least as important as performance relative to one's own expectations" (Eccles and Pyburn, 1992, p.41). In other words, the PM Matrix "urges a *dynamic* assessment of performance indicators relative to internal and external goals" (Matthyssens and Pauwels, 1996, p.109, emphasis in the original). In this context it has been also argued that a dynamic assessment "expresses the standard as a rate of expected improvement" (Globerson, 1985, p.644) which may lead to continuous improvement for the adopters of this type of assessment; in contrast a static assessment can only fix a performance standard at a certain level. Figure 3.3 below illustrates the application of the PM Matrix to the export sales and export profit objectives; however, the matrix can be readily applied to *any* export objective pursued by an export firm since its dimensions are generic rather than objective-specific (Matthyssens and Pauwels, 1996).

Depending upon the emphasis a decision maker places on the dimensions of the matrix, the assessment of export performance will reflect a preference for particular performance measures. Indeed, figure 3.3 demonstrates the fact that *multiple* performance measures can be associated with a *single* export objective. Thus, a firm may be overly concerned with competition and pay particular attention to, say, export market share while showing less interest in, say, export sales intensity. Similarly, another firm may be more concerned with short-term performance and, hence, place more emphasis on export profit level, while downplaying longer-term indicators such as export profit growth.

**Figure 3.3: The Performance Measurement (PM) Matrix: Export Sales and Export Profit Objectives.**

Time Frame	Frame of Reference					
	Own Plan		Competition		Domestic Market	
	Sales	Profit	Sales	Profit	Sales	Profit
<i>Static</i>	Export sales level	Export profit level	Export market share	Relative export profitability	Export sales intensity	Export profit intensity
<i>Dynamic</i>	Export sales growth	Export profit growth	Change in export market share	Change in relative export profitability	Change in export sales intensity	Change in export profit intensity

The attainment of the export sales and export profit objectives as described by the PM Matrix is subject to managerial *interpretation* leading to satisfaction/non-satisfaction with performance (Bonoma and Clark, 1988; Madsen, 1998). Satisfaction is defined as the *subjective* evaluation of *actual* attainment of a given export objective. Thus, depending on how export managers evaluate the actual attainment levels within the PM Matrix for a given export objective, the extent of satisfaction/dissatisfaction may differ. For example some managers may be overly concerned with competition and thus, place more emphasis on, say, export market share and less emphasis on, say, the absolute export sales level. Similarly, other export managers may be more concerned with short-term performance and thus, almost ignore longer-term indicators such as export sales growth. What this means is that even if the actual (*objective*) performance levels of attainment measured on all indicators (i.e. the entries in the PM matrix) are identical, different export managers/firms might exhibit *different* degrees of satisfaction/dissatisfaction with the *same* export objective; in other words, managers' interpretations of performance may well differ (Ambler and Kokkinaki, 1997; Kokkinaki, and Ambler, 1999). What this also means is that in order to interpret managers' subjective evaluations of (i.e. satisfaction with) export performance one needs to know the "underlying assumptions" namely, the



relative *emphasis* placed on static versus dynamic considerations (time perspective) and absolute versus relative performance (frame of reference) by the managers concerned (Madsen, 1998); such emphasis is likely to be a function of the organizational and environmental context in which the firm operates (Thach and Axinn, 1994). Consequently, satisfaction with a given objective can be expressed as follows:

$$\text{Satisfaction} = f(\text{Attainment level, Time perspective, Frame of reference}) \quad (1)$$

Thus, in the example of Figure 3.3, satisfaction with the attainment of the export sales objective can be modeled as:

$$\text{Satisfaction with Export Sales} = f(\text{Sales Level, Sales Growth, Market Share, Change in Market Share}) \quad (2)$$

Having established export management's satisfaction with a *particular* export objective, any notion of "success" or "failure" with regard to this objective cannot be determined without knowing how *important* the objective is for the firm in question. The concept of importance acknowledges that a company's effort was deliberately and primarily directed towards achieving *that* particular objective, as opposed to less important goals on which the company can afford to under-perform; for example, for a given firm, at a given time, export sales may be a more important objective than export profits. Consequently, it is the *relative* importance of each one of these export objectives along with export managers' satisfaction levels that will determine whether export performance should be classified (or interpreted) as success or failure; again, objective importance is likely to be a function of organizational and environmental factors (Matthyssens and Pauwels, 1996).

This leads to the Success/Failure (SF) Matrix as shown in figure 3.4 below, representing the interpretation of export performance (see conceptual framework in Figure 3.1 above).

Figure 3.4: The Success-Failure (SF) Matrix

<i>Satisfaction with Export Objective</i>	<i>Importance of Export Objective</i>	
	<i>Important</i>	<i>Not Important</i>
<i>Satisfaction</i>	Success	Apparent Success (Type I error)
<i>Dissatisfaction</i>	Failure	Apparent Failure (Type II error)

The dimensions of the SF Matrix capture on the one hand, the relative importance of different objectives and, on the other hand, managers' satisfaction with these objectives as determined previously by the evaluation of the PM Matrix. Both importance and satisfaction can, in principle, be measured on a continuum (see for example, Cadogan and Diamantopoulos, 1998; Diamantopoulos and Souchon, 1998). Yet, the construction of the SF Matrix is based on a dichotomous representation of each dimension; this is purely for illustration purposes. The key message from the SF Matrix is that notions of "success" and "failure" lack specific content, unless *both* the level of satisfaction with the attainment of export objectives *and* the relative importance of the said objectives are taken into account. More importantly, the matrix shows how two types of error can be made by an outsider (e.g. a researcher), when looking at export management's self-reported satisfaction with the attainment of different export objectives; both types of error, arise as a *direct* result of failure to account for the relative importance of different objectives. The first type of error (Type I error), occurs when high reported satisfaction levels with an unimportant objective are interpreted as indicators of export success; here, the researcher –inadvertently– overestimates the firm's overall export performance when aggregating/combining across different export objectives. The second type of error (Type II error), occurs when low reported satisfaction levels with an unimportant objective are seen as indicators of failure; in this case, the firm's overall export performance is likely to

be underestimated. The *net* effect of these errors is difficult to predict; however, it cannot be automatically assumed that they will cancel each other out.

The potential confounding impact of Type I and Type II errors on inferences of export success/failure becomes immediately apparent if one accepts that different firms may place different importance on different export objectives. To illustrate this problem, consider two exporters A and B and assume that their self-reported satisfaction levels in relation to four export objectives (say, export sales, export profit, new market entry and customer loyalty) are identical. Conventional wisdom would interpret this situation as indicating equal overall performance for A and B (e.g. equal scores on a summated scale comprising the four export objectives). However, as the respective SF matrices in figure 3.5 show, this interpretation is not warranted. In fact, export firm A has attained all its important objectives, while firm B has not; to argue that both of them are equally “successful” is clearly questionable.

**Figure 3.5: Illustrative SF matrices for two export firms**

**Export Firm A**

	<i>Importance of Export Objectives</i>	
<i>Satisfaction with Export objectives</i>	<i>Important</i>	<i>Not Important</i>
<i>Satisfaction</i>	<ul style="list-style-type: none"> <li>• Export Sales</li> <li>• Export Profit</li> </ul>	<ul style="list-style-type: none"> <li>• New Market Entry</li> </ul>
<i>Dissatisfaction</i>		<ul style="list-style-type: none"> <li>• Customer Loyalty</li> </ul>

**Firm B**

	<i>Importance of Export Objectives</i>	
<i>Satisfaction with Export objectives</i>	<i>Important</i>	<i>Not Important</i>
<i>Satisfaction</i>	<ul style="list-style-type: none"> <li>• New Market Entry</li> </ul>	<ul style="list-style-type: none"> <li>• Export Sales</li> <li>• Export Profit</li> </ul>
<i>Dissatisfaction</i>	<ul style="list-style-type: none"> <li>• Customer Loyalty</li> </ul>	

From the above it becomes evident that the relative importance of export objectives needs to be *explicitly* accounted for, when undertaking inter-firm performance comparisons. If it is accepted that (a) export firms may pursue more than one export objective and (b) the importance of export objectives may vary between firms, then it is a logical consequence that inter-firm comparisons of export performance cannot be legitimately undertaken with respect to any *one* export objective (and by extension, to any *one* export performance measure). Rather such comparisons must be undertaken at an *aggregate* level so that the specific *set* of export objectives pursued by each export firm is taken into consideration. Therefore export performance (or success) is proposed to be captured in terms of the following *composite* measure:

$$P = \sum_{i=1}^n I_i \times S_i \tag{3}$$

where

P = overall export performance

I<sub>i</sub> = importance attached to objective i (i = 1,...n)

S<sub>i</sub> = management's reported satisfaction with the attainment of objective i (as determined by the application of the PM matrix – see Figure 3.3 earlier).

Note that the composite *index* of export success (see equation (3) above) suggests a formative approach to measurement thereby allowing for performance trade-offs among export objectives (see more in section 2.7.7). Also note that the case of firms pursuing a different number or a different set of export objectives can be accommodated in equation (3) by selectively setting relevant importance weights (i.e. the *I*'s) to zero. Furthermore, different types of export objectives (i.e. financial and non-financial) can be incorporated in the assessment of overall performance as neither the PM or SF matrices are specific to a particular type of objective. Note also that, since *P* is partly determined by the value of *S* and *S* is partly determined by the *actual* attainment level (see equation (1) earlier), the position of the firm on "objective" performance measures is reflected in *P* (albeit indirectly). Finally, it is worth noting that from equation (3) it is possible to systematically trace back the effect of any export objective on overall export performance via the SF and PM matrices.

### 3.4 Using the proposed conceptualisation for export performance comparisons.

Although the following discussion is not directly relevant to the conceptual framework shown in Figure 3.1, it helps introduce the operationalisation of the proposed composite measure (index); remember, the proposed index is aimed to facilitate the conduct of valid inter-firm comparisons of export success. It was shown previously (see figure 3.3) that, given a particular export objective of interest (e.g. export sales), the attainment of that objective could be comprehensively described by (a) its *frame of reference* and (b) the *time perspective* involved. Hence, differences between two firms in terms of the assessment of the export sales (or any other) objective could be potentially manifested in the *mode* of assessment employed (i.e. the frame of reference and the time frame utilised). Such differences can directly affect the interpretation of (satisfaction or not with) performance as explained in section 3.3 (see equation (2) above). By implication, valid performance comparisons between two firms in terms of their export sales objective's attainment would not be possible if one has no knowledge about the *relative emphasis* these firms place on the frame of reference and/or the time horizon when assessing this particular objective. According to the equation (3) shown above (see

section 3.3) valid performance comparisons between two firms pursuing a *set* of export objectives also require knowledge about the *relative importance* each firm places on each export objective pursued. In light of the above, the conduct of valid success comparisons across export firms requires from researchers to establish first, (i) which of the export objectives assessed carries more weight (or is more important) in export managers' performance assessments and then, (ii) which mode of performance assessment (e.g. see figure 3.3) is the most preferable. To illustrate the point, this study has selected and studied a set of three (financial and non-financial) objectives namely, export profit, export sales and NPI (new product introduction). While the former two objectives have been measured extensively in export related studies, the third is rarely measured (see reviews by Katsikeas et al., 2000; Sousa, 2004). Nevertheless, the selection of the third objective is justified on the grounds that "the product and its performance are key to any export marketing strategy" (Katsikeas et al., 2000, p.498), an importance that is further indicated by the fact that a whole branch of the marketing literature, namely the NPD, is devoted to its study (e.g. Hart, 1993; Griffin and Page, 1996).

To be able to undertake valid cross-firm export performance comparisons in a context of multiple and different export objectives (Madsen, 1987; Cavusgil and Zou, 1994), it was considered particularly appropriate to apply the multi-criteria problem solving methodology called AHP (Saaty, 1980). This is because the AHP is capable of addressing the different aspects of the export performance measurement problem, simultaneously. To be more specific, this approach helps establish any importance weights required (see equation (3) above) and, thus, allow one to rank export objectives in terms of their relative importance for the firms compared; in addition, it allows the determination of the relative emphasis placed on both the frame of reference and the short vs. long-term considerations involved when assessing *any* given set of export objectives. The AHP is a versatile tool borrowed from the operational research literature and is discussed in detail in the methodology chapter (see section 4.1 and 4.2).

### 3.5 Contextual impact on export performance assessments.

Shifting attention to the left side of Figure 3.1, the conceptual framework acknowledges that the context may play a key role in export performance assessments (see also relevant discussion in section 2.7.10). Although the empirical export literature has underscored an extensive number of internal (firm-specific) and external (environmental) variables acting as *drivers* of export performance (for reviews, see Schlegelmilch and Ross, 1987; Madsen, 1987; Aaby and Slater, 1989; Gemünden, 1991; Chetty and Hamilton, 1993; Cavusgil and Zou, 1994; Leonidou et al, 1998; Zou and Stan, 1998), scant attention has been paid to contextual factors affecting *assessments* of export performance (Katsikeas et al, 2000). The conceptual framework (see Figure 3.1) suggests an attempt to model potential antecedents to export performance assessments. This is because the study seeks to explain likely inter-firm differences in the assessment of export performance (such as those shown in figure 3.3). Bearing in mind that prevailing organisational and industry-specific factors may always change (Morgan et al, 2002), the framework strives to ensure that any contextual influences will be reflected in assessments of export success.

Specifically, the study will explore the explanatory power of the antecedents included in the Figure 3.1 in relation to (i) the relative importance placed on a set of export objectives and the relative attention paid to (ii) the frame of reference and (iii) the time horizon when translating export objectives into measures that track the objectives' attainment. In fact, nineteen (19) factors culled from the literature are used as likely antecedents to the assessment of export success (see hypothesized relationships below). The former are clustered into five different groups altogether (see table 3.2 below). Taken collectively, the 19 antecedent variables included in Figure 3.1 constitute a representative account of the different *groups of factors* composing the context within which export performance and its assessment may take place (i.e. export-, company-, management-, environment and performance-related factors). Table 3.2 below shows the broad categorization of contextual factors employed. This categorization largely derives from the export literature relating to the determinants of export success (e.g. see reviews by Aaby and Slater, 1989; Chetty and Hamilton, 1993; Zou and Stan, 1998; Leonidou et al, 2002). It

reflects the view that what might affect performance might also affect how performance is going to be evaluated (Day and Nedungadi, 1994; Clark, 2000) and including factors such as the organizational structure, strategy or markets served (Thach and Axinn, 1994). This is also consistent with the argument that managerial perceptions of competitive advantage and success tend to be influenced by aspects of the environment past experience taught managers they cannot afford to overlook in order to succeed (Day and Nedungadi, 1994).

**Table 3.2 Contextual antecedents of export performance assessments**

<b>Contextual Factors</b>	<i>Controllable</i>	<i>Non-controllable</i>
<i>Export-specific</i>	Export Commitment Export Destination Diversity Resource Inadequacy	Export Experience Export Dependence
<i>Company-specific</i>		Firm's Size Annual Sales Turnover
<i>Management-related</i>	Shared vision Innovativeness Open-mindedness Commitment to learning Future-oriented culture Risk orientation Export market orientation	
<i>Environmental</i>		Environmental Uncertainty
<i>Performance-related</i>	Efficiency Effectiveness Adaptiveness Performance Documentation	

To be more specific, the framework shown in Figure 3.1 acknowledges that export performance assessments may take place within a context composed of various internal (firm-specific) and external (environmental) factors (Chetty and Hamilton, 1993; Zou and Stan, 1998). The emphasis on internal factors namely, export-, company-, management-



and performance-related (see table 3.2 above) is in line with the resource-based theory of competitive advantage adopted by this study (see section 3.2), which views company performance in terms of sources of advantage (resources and capabilities), positional advantages, market and financial outcomes. The emphasis on external factors derives from the fact that the environment can determine not only export-marketing strategies (Cavusgil and Zou, 1994) but also the evaluation of the strategies' success through shaping managers' perceptions of competitive advantage (Day and Nedungadi, 1994).

In addition to the above, the proposed framework acknowledges that performance assessments can be subject to both non-controllable and controllable contextual factors. This particular categorization of the antecedent factors (see table 3.2) has been also adopted from the literature pertaining to the drivers of export success (see Zou and Stan, 1998). Specifically, non-controllable are those factors that export managers can do little about; for example, an export firm's age or experience as well as factors such as cost of labour and capital, exchange rates, government regulations and commercial policies, domestic and export market demand. In contrast, factors that are more likely to be under an export firm's control are called controllable (Zou and Stan, 1998); these may include the products produced, the export channels used, the export markets entered, the export policy, the organisational culture or values encouraged and so on (see table 3.2). The quest for determinants that may explain inter-firm and inter-country variations in export performance assessments should include both controllable and non-controllable factors as both types may have an impact on assessments of export success (see hypothesised relationships in section 3.5.1 below).

The development of formal hypotheses linking the context to different aspects of export performance assessments (see (i)-(iii) above) was considered necessary. The hypotheses serve this study's purpose, which is to explore the explanatory power of the antecedent variables incorporated in Figure 3.1. The hypothesized relationships are presented in the following section and illustrate how contextual factors idiosyncratic to firms may account for differential assessments of export success (Katsikeas et al, 2002).

Bear also in mind that this study intends to investigate *additional* relationships between the context and *each* export objective's performance assessment (i.e. relationships at a disaggregate level of assessment). These relationships are implied in Figure 3.1 but not explicitly stated in the hypotheses section below. This empirical investigation (at a disaggregate level of assessment) is consistent with the *exploratory* character of the study; the intention is to contribute to the better understanding of the notion of export success by offering richer evidence on exporters' performance assessment practices.

### 3.5.1 Hypothesised relationships

Based on the literature, an assortment of twenty-four (24) relationships have been hypothesised linking nineteen (19) contextual factors to the dependent variable of interest (i.e. the assessment of export performance). Some variables (e.g. export commitment, innovativeness, efficiency) have been used more than once to demonstrate that some contextual factors may have *multiple* impact on assessments of export success.

Although the framework acknowledges potential contextual effects on export objectives and their translation into export indicators, note that a direct causal link between the context and performance interpretations is absent (see Figure 3.1). This is in line with the conceptualization discussed earlier in section 3.3, arguing that such interpretations are a function of the export objectives' relative importance, the level of attainment and the mode of assessment (i.e. the frame of reference and time frame) utilized when assessing success. This study regards the impact of the context on the interpretation of performance as an "indirect" one that is, through the relative importance of export objectives and the emphasis on the specific frame of reference and time frame used (see again section 3.3). Thus, there is no hypothesis linking the context to the interpretation of export performance. Indeed, the aim is to investigate only direct links between antecedent variables and the assessment of export success (see hypotheses below).

The conceptual framework shown in Figure 3.1 proposes that (i) the relative importance placed on the export objectives, (ii) the relative attention paid to the frame of reference

and (iii) the relative preference for a short- vs. long-term horizon when translating export objectives into performance indicators are all likely to bear the influence of the context. The following discussion focuses on the potential influence of different contextual factors (found across the five groups shown in Figure 3.1) on the relative importance of export objectives studied.

*The relative importance of export objectives.*

Table 3.3 summarises the hypothesised relationships (8 altogether) that are going to be discussed below.

**Table 3.3: Hypotheses involving the relative importance placed on export objectives.**

Contextual characteristic	Relationship	Export Objective
H1a. Export Experience	(+)	Export Profit
H1b. Export Commitment	(+)	New product introduction
H1c. Export Destination Diversity	(+)	New product introduction
H1d. Firm's Annual Sales Turnover	(+)	New product introduction
H1e. Resource Inadequacy	(-)	New product introduction
H1f. Innovativeness	(+)	New product introduction
H1g. Environmental Uncertainty	(+)	Export Sales
H1h. Efficiency	(-)	New product introduction

It has been pointed out that "organisational and environmental factors may influence the importance placed upon performance goals" (Dunn, et. al, 1994, p.139). Take for instance export experience. In view of the fact that such experience has been linked to export success (see Zou and Stan, 1998), it could be claimed that in general, experienced exporters "are likely to do better than firms that are just starting" (Aaby and Slater, 1989, p.21). This should be due to the heterogeneity of the export environment and markets that may require "more knowledge from managers than do homogeneous markets" (Miller, 1992, p.165). Given that export goals can differ among firms (Cavusgil and Zou, 1994; Madsen, 1998), such differences should be also evident among firms whose export

experiences vary (Shoham, 1998). For instance, one would expect inexperienced firms at an early export stage to be more interested in gaining experience along with a foothold in export markets and less demanding in terms of their export profit targets; in contrast, experienced exporters should be able to place more emphasis on their export profitability. Therefore, it is proposed that:

*H1a: The greater the export experience, the higher the relative importance placed on the export profit objective.*

In addition to export experience, the commitment exporters show to their operations may influence the relative importance placed on the objectives pursued. Export commitment has attracted attention in the literature and been linked to export performance (Zou and Stan, 1998; Leonidou et al, 1998). It seems that committed exporters strive hard to succeed in their export activities (e.g. see Cavusgil and Zou, 1994). Consequently, firms exhibiting high commitment to exporting would be also expected to take into serious consideration key issues associated with expansion and success in exporting, notably the products exported (Katsikeas et al, 2000; Leonidou et al, 2002). In fact, the introduction of new products is likely to be a rather more important consideration for committed exporters as opposed to firms that are less keen in this respect. It is expected that:

*H1b: The higher the export commitment, the greater the relative importance placed on NPI as an export objective.*

Export firms serving a wide diversity of markets (i.e. countries/regions) may attribute different importance to their export objectives in comparison to those firms whose export destination(s) are spread geographically in much narrower confines. For instance, the diversity of the markets exported to, may present firms with a variety of different market demands. Thus, the number of countries served may be associated with a greater necessity on behalf of an exporter to consider significant product-related issues such as adaptation/standardization (see Leonidou et al, 2002). To be able to meet the diverse

demands encountered, the former exporter is more likely to pay attention to the development and introduction of new products in comparison with firms targeting a limited number of export destinations. The argument is summarized in this hypothesis:

*H1c: The greater the diversity of a firm's export destinations, the higher the relative importance placed on NPI as an export objective.*

It has been stressed that “[f]urther international development of the firm is highly dependent on the allocation of resources to the right export ventures” (Madsen, 1998, p.91). Resources can drive competitive advantage in export markets (Kaleka, 2002). Export operations depend on such resources because the latter can assist the development of capabilities such as product adaptation (Leonidou et al., 2002) and/or strategy adaptation in volatile markets (McKee et al, 1989). Firms' higher annual sales turnover could be claimed to facilitate the accumulation of financial resources thereby providing firms with superior adaptive capabilities over less wealthy export competitors; thus, accumulated resources can help firms adapt in changing environments (Chakravarthy, 1986). By implication, export firms' higher annual sales turnover is likely to facilitate investments in new product development and introduction into the markets. In fact:

*H1d: The higher an export firm's annual sales turnover, the greater the relative importance placed on NPI as an export objective.*

In contrast, a lack of resources may compromise export firms' control over export channels by allowing firms' dependence on distributors (Bello and Gilliland, 1997; de Mortanges and Vossen, 2002) and also affect export performance (Cavusgil and Zou, 1994). Moreover, it is reasonable to expect a lack of resources to hinder export-related investments and adaptation via new product introduction to export markets. Therefore, the following hypothesis is proposed to be tested too:

*H1e: The higher an export firm's resource inadequacy, the lower the relative importance placed on NPI as an export objective.*

The notion of innovation has been linked to product development (e.g. Mahajan et al, 1990), firm performance (e.g. Calantone et al, 2002) and performance measurement (Ambler, 1999). A firm's innovativeness means openness to new ideas as an aspect of a firm's culture (Hurley and Hult, 1998). Innovativeness has been associated with change, adaptability and organizational survival in uncertain environments (Calantone et. al 2002); it may be manifested in the development of new products (Griffin and Page, 1996) and the pursuit of new market opportunities (McKee et al, 1989). Thus, it is reasonable to expect a relationship between the emphasis on innovativeness and the relative importance exporters attribute the introduction of new products in export markets.

*H1f: The higher a firm's innovativeness, the greater the relative importance placed on NPI as an export objective.*

Environmental uncertainty "concerns the predictability of the environment within which managers operate" (Morgan et. al., 2002, p.369) and was found to affect decision-making uncertainty and have an impact on export performance (Raven et al, 1994). When operating under changing, uncertain conditions, firms may favor adaptiveness in comparison to efficiency or effectiveness; actually adaptiveness could be viewed as a precursor of any efficiency and effectiveness outcomes (Walker and Ruekert, 1987; Katsikeas et al, 2002). To counteract increasingly uncertain environments firms may have to adapt by altering their strategies in order to achieve their objectives (McKee et al., 1989; Goold and Quinn, 1990). For example, firms may adapt by investing in new marketing strategies and/or new export market opportunities in order to be able to achieve their export sales goals. Indeed, it was argued that "if the objective is to improve sales performance indicators, special consideration should be given to the adaptation of marketing strategy" (Leonidou et al, 2002, p.64). Company adaptation under uncertainty can be facilitated by making investments from company resources (Chakravarthy, 1986). By implication, export firms would be expected to place greater emphasis on their export

sales targets under uncertainty, so as to be able to (at least) break-even and offset any costs incurred. It is actually expected that:

*H1g: The higher the environmental uncertainty, the greater the relative importance placed on the export sales objective.*

Remember that the three-dimensional conceptualization of performance suggested in the mainstream literature (see section 2.3.1) has been criticized in section 2.3.2. In fact it was pointed out that the extent to which export practitioners perceive the existing set of dimensions as conflicting (i.e. exhibiting trade-offs) has yet to be empirically determined. However, this study endorsed the former conceptualization because it helps the study's objectives. According to this three-dimensional view of performance, an adaptiveness perspective differs from an efficiency performance orientation. An adaptive organization in particular, has been claimed to be "deliberately inefficient. Efficiency is associated with a narrow scope of activities and attention, with little variation in standard practice (McKee, Varadarajan and Pride, 1989, p.21). In contrast, it could be argued that a firm's focus on adaptiveness may actually trigger investments in the development and introduction of new products to international markets; it often involves an initial outlay of money that is invested in anticipation of future profits (McKee et al, 1989; Nickell, 1995). The targeting of export markets can be more expensive relative to domestic markets; yet, returns on investment can be ambiguous (Hirsch, 1971; Kotabe and Helsen, 2001). Indeed, "[p]rofitability in foreign markets may be adversely affected by such factors as the capital tied to foreign transactions, additional costs of marketing abroad and difficulties in obtaining payment from overseas customers" (Leonidou et al., 1998, p.93). Therefore, new product development and introduction may become costly undertakings at the expense of short-term profits (Banks and Wheelwright, 1978). Such investments are not consistent with the notion of short-term economic efficiency; the latter translates into export firms that strive to maximise their short-term output relative to input (e.g. see Madsen, 1998). In fact, there should be a trade-off between the emphasis placed on maintaining efficiency and the relative importance attributed to new products. Thus:

*H1h: The higher a firm's emphasis on efficiency, the lower the relative importance placed on NPI as an export objective.*

Following the hypotheses pertaining to contextual effects on export objectives, the discussion now focuses on factors that are expected to affect exporters' relative attendance to their own export plan vs. competition when assessing success.

***The relative emphasis on the frame of reference***

A summary of the hypothesized relationships involving the relative emphasis placed on the frame of reference (8 altogether) is shown in table 3.4.

**Table 3.4: Hypotheses involving the *relative emphasis* on the frame of reference.**

<b>Contextual characteristic</b>	<b>Relationship</b>	<b>Frame of reference</b>
H2a. Export Commitment	(+)	Own plan
H2b. Export Dependence	(+)	Own plan
H2c. Risk Orientation	(+)	Own plan
H2d. Export Firm's Size	(+)	Own plan
H2e. Annual Sales Turnover	(+)	Own plan
H2f. Export Market Orientation	(+)	Competition
H2g. Efficiency	(+)	Own plan
H2h. Performance Documentation	(+)	Own plan

With respect to the frame of reference employed when assessing export success, it could be claimed that the selection of the own plan referent may be influenced by export-related characteristics such as a firm's export commitment and export dependence. Bear in mind that planning is considered to be important for export development (Diamantopoulos and Inglis, 1988; Leonidou et al, 1998) while export commitment has been also found to influence export success (Aaby and Slater, 1989; Zou and Stan, 1998). However, there could be no guarantee for the smooth execution of export firms' plans particularly when export operations are not unlikely to face adverse conditions involving risks (e.g. fluctuating exchange rates and market demand, political unsteadiness, new technologies,



changing customer preferences and/or increasing competition). In light of the necessity to counterbalance any risks involved, firms committed to export undertakings would be expected to place more emphasis on their export plans so as to make sure that these plans are carried out successfully and the targets met. By implication, committed exporters should be more likely to evaluate their success against their own export plans too. Based on the above, it is proposed that:

*H2a: The higher a firm's export commitment, the greater the relative emphasis placed on the firm's own export plan as a frame of reference.*

The above attention paid to own export plan might also characterise firms whose survival and prosperity is highly dependent on exporting. High export dependence (i.e. percentage of sales realised from exporting) indicates firms whose export operations contribute substantially to their prosperity. Such firms are not unlikely to attribute greater importance to the export activity in comparison to firms found at an early stage of internationalisation whose export engagement might only be experimental (Leonidou, 1995; Leonidou et al., 1998) or those companies whose exporting might contribute little relative to other options of international business involvement available to them (Thach and Axinn, 1994). In light of the importance export dependent firms are likely to attribute to the success of their export activities, it is possible that such firms would strive to be proactive and reduce any risk of failure by executing carefully designed export strategy plans. Furthermore, export dependent firms would be expected to pay particular attention to the implementation of their plans and monitor their accomplishment. For that reason, such firms should also be more inclined to use their own plans to evaluate their success.

*H2b: The higher a firm's export dependence, the greater the relative emphasis placed on the firm's own export plan as a frame of reference.*

In addition to the above, it has been pointed out that various organisational constituencies (e.g. senior managers, stockholders) can have different expectations about the desired performance criteria and may also favour the selection of different performance referents

(Chakravarty, 1986; Morgan et al., 2002). With regard to the selection of the frame of reference employed when assessing export success, it could be claimed that the former may be influenced by management-related characteristics such as an export firm's risk orientation. Although firms involved in exporting generally perceive lower risks in relation to the export activity (Leonidou, 1995), changing export market conditions suggest that export operations can be risky undertakings (Balabanis and Katsikea, 2003). In view of the greater risks that might be faced in export markets than selling at home (Leonidou et al, 1995), a willingness to take risks becomes a precondition for success in exporting; indeed, an entrepreneurial, risk taking behaviour has been linked to export performance (Balabanis and Katsikea, 2003). To counterbalance likely risks encountered, it would be expected from risk-taking firms to focus on their export plans and do all they can to realize them. As a result, risk-oriented exporters' performance evaluations would be also expected to reflect an emphasis on their own export plans, which are used as a referent to compare their success against. Therefore it is proposed that:

*H2c: The higher a firm's willingness to take risks, the greater the relative emphasis placed on its own export plan as a frame of reference.*

Furthermore, it has been noted that "smaller firms, lacking sufficient resources, are more likely to be found at the early stages of international business involvement, such as exporting as opposed to firms of larger size which often proceed to more advanced stages" (Leonidou, 1995, p.141). Indeed, in exporting, the majority "are small- to medium-sized private firms, some of which may lack appropriate export accounting mechanisms for reporting purposes" (Leonidou, et al, 2002, p.56). Yet, larger export firms and those having higher annual sales turnover are more likely to have established mechanisms to assist them in the implementation of their export plans; this is supported by Amblér et al's (2004) study in a marketing context, reporting that larger firms' tracking of performance is more frequent in comparison to smaller firms'. The fact that a large firm compares favorably to a small one in terms of performance measurement frequency is consistent with the larger firm's potentially greater earnings. Moreover, the most important and frequently collected measures are reported to be accounting measures

and the most common performance benchmark employed is firms' own business plans (Ambler et al, 2004). In light of the above, it would be expected that:

*H2d: The larger an export firm's size, the greater the relative emphasis placed on the firm's own export plan as a frame of reference.*

*H2e: The higher an export firm's annual sales turnover, the greater the relative emphasis placed on the firm's own export plan as a frame of reference.*

A characteristic that should be influential in terms of the selection of the frame of reference is the market orientation of exporters (see Cadogan et al, 1999; 2002a). Market orientation (including customer orientation, competitor orientation and inter-functional co-ordination) has been linked to company performance (Narver and Slater, 1990; Kholi and Jaworski, 1990; Cadogan and Diamantopoulos, 1998; Cadogan et al, 2002b). The construct has also been found to influence the attainment of both short- and long-term objectives (Balabanis et al., 1997). Given the fact that a market orientation implies an emphasis on competition, market oriented firms may monitor the attainment of their objectives by obtaining direct input from customer reactions and compare it against competitors' performance (e.g. Day and Nedungadi, 1994; Kokkinaki and Ambler, 1998). Market oriented exporters in particular, should be more inclined to focus on direct comparisons of their firms' performance versus their competitors'. The hypothesised relationship to be tested is that:

*H2f: The greater an export firm's market orientation, the greater the relative emphasis placed on competition as a frame of reference.*

There is "no empirical knowledge to suggest that the use of any particular performance referent is inherently superior to any other" (Morgan et al., 2002, p.370); any frame of reference such as own export plan (i.e. implying an internal focus) or export competition (i.e. implying an external focus) could be used to interpret the attainment of export objectives (examples of measures reflecting these two referents can be seen in table 2.6,

section 2.7.3). Having said that, firms adopting an effectiveness and/or adaptiveness perspective are less likely to be internally focused (McKee et al., 1989); in contrast, an efficiency orientation should reflect performance evaluations against an internal referent (Goodman and Pennings, 1981). The latter is evident in Madsen's (1998) study where the reported use of short-term, efficiency oriented export measures suggests an emphasis on an inward looking performance assessment perspective. Hence, it should be the case that:

*H2g: The greater an export firm's focus on efficiency, the higher the relative emphasis placed on own export plan as a frame of reference.*

It makes sense to expect that firms would find it more convenient to maintain an emphasis on assessing those aspects of performance for which their established control system has been generating (and documenting) information (Morgan et al, 2002). In this respect, one would also expect to be generally easier (and probably cheaper) for export firms to have started by collecting and documenting information on various aspects of their own performance rather than their competitors'. Therefore, it would also seem more convenient for firms to maintain gathering information primarily on a variety of aspects of their own export performance and only secondarily, on their competitors' performance. In such context, the documentation and emphasis of performance information for export performance assessments would not be evenly balanced. Such documentation is very likely to provide an abundance of information on a firm's own (past and future) export performance in comparison to competition. Bearing also in mind that firms are reported to place higher emphasis on internally generated (financial) performance indicators even when evaluating their marketing performance (Kokkinaki and Ambler, 1999), one would expect that established systems of performance documentation are more likely to emphasise the importance of export firms' own plan (as opposed to competition) when assessing the attainment of export objectives. The following hypothesis derives from the above argument:

*H2h: The greater the attention paid to a firm's performance documentation, the higher the emphasis placed on the firm's own export plan as a frame of reference.*

Contextual factors that are expected to influence the relative attention export managers pay to short- vs. long-term considerations when assessing export success, follow:

*The relative emphasis placed on the time frame*

Table 3.5 summarises the hypotheses linking the context to the exporters' preferences for a short- vs. long-term time horizon. These likely links are discussed below.

**Table 3.5: Hypothesised links relating to the emphasis placed on the time horizon.**

Contextual characteristic	Relationship	Time horizon
H3a. Shared Vision	(+)	Long-term
H3b. Innovativeness	(+)	Long-term
H3c. Open-mindedness	(+)	Long-term
H3d. Future-oriented Culture	(+)	Long-term
H3e. Commitment to Learning	(+)	Long-term
H3f. Efficiency	(-)	Long-term
H3g. Effectiveness	(+)	Long-term
H3h. Adaptiveness	(+)	Long-term

With respect to the time perspective adopted in assessments of export success, it should be noted that the accounting time span within which financial performance is often assessed (i.e. financial year-end) does not necessarily coincide with the wider time horizon that might be needed to evaluate the cumulative effect of a firm's marketing strategy performance (Morgan et al, 2002) or the attainment of a firm's long-term strategic goals (Goold and Quinn, 1990). In this context, a firm's culture could actually influence the use of a longer time frame in firms' assessments of export success. Specifically, if a firm's corporate culture is oriented towards planning ahead and encourages a long-term view (Kitchell, 1995), the export success would be more likely to be monitored by using indicators that allow for a dynamic assessment of performance (e.g. export sales growth, export profitability growth or changes in export market share). Hence, it can be proposed that:

*H3a: There is a positive relationship between an export firm's future-oriented culture and the emphasis placed on long-term performance assessments.*

The selection of a short vs. long time horizon could be also influenced by characteristics such as, a firm's shared vision/purpose, open-mindedness, commitment to learning and innovativeness; all four of them are suggested to reflect a learning orientation (see Callantone et al., 2002). To be more specific, a shared vision/purpose refers to an organisation-wide focus on learning and has been associated with increased market information generation, dissemination, learning and marketing strategy dynamism within organizations (Sinkula et al., 1997). Although "[i]t is not clear that organisational purpose can be portrayed as unitary or that the multiple purposes of an organisation are reliably consistent" (March and Sutton, 1997, p. 698), it was pointed out that a shared vision can co-ordinate the focus of various departments, enhance learning and give direction within organizations so as to enable the implementation of new knowledge (Calantone et al., 2002). In the same context, open-mindedness is associated with the willingness to, question old ways, evaluate a firm's operational routine and accept new ideas; commitment to learning refers to the degree that learning is valued and promoted in an organizational context (Sinkula et al., 1997). Last, a learning orientation facilitates firm innovativeness, a characteristic that is associated with "the organisation's willingness to change" (Calantone et al., 2002, p. 522), develop new products (Griffin and Page, 1996), improve its market position (Ambler, 1999) and survive in volatile environments (Hurley and Hult, 1998).

To sum up, organizations that invest in the development of a learning oriented culture (components of which have been mentioned above) strive to gather and communicate knowledge so as to be able to innovate and maintain their competitiveness; "[m]ost importantly, commitment to learning is associated with a long-term strategic orientation" (Calantone et al., 2002, p.516) aiming at gains in the long run. There is actually, evidence supporting the impact of such culture on performance; in fact, shared vision and clear

goal setting are claimed to have a positive influence on marketing effectiveness (Dunn et al, 1994).

Against this background there is the issue of short-termism in performance assessments (e.g. see Lages and Lages, 2004) that may arise from the reaction of “companies to the perceived attitudes of financial institutions and markets to financial risk and return” (Coates et al, 1992, p. 149); the former identifies with an efficiency view that restricts input (expenses) relative to output (Eccles, 1991). In this respect, it has been argued that pressure to improve short-run performance can seriously impede the achievement of long-range corporate goals as firms that pursue short-term profits often do so at the expense of long-term goals (Banks and Wheelwright, 1979). In contrast, exporters that strategically invest in the development of the aforementioned learning culture in order to remain competitive in the long run do not seem likely to compromise their long-term objectives in favour of short-term gains. In consequence, they would be expected to place higher emphasis on a longer time horizon when assessing their export success as opposed to adopting a short-termist approach. Hence:

*H3b: There is a positive relationship between a firm's shared vision, purpose and the relative emphasis placed on a long-term horizon.*

*H3c: There is a positive relationship between a firm's open-mindedness and the relative emphasis placed on a long-term horizon.*

*H3d: There is a positive relationship between a firm's commitment to learning and the relative emphasis placed on a long-term horizon.*

*H3e: There is a positive relationship between a firm's innovativeness and the relative emphasis placed on a long-term horizon.*

In light of earlier criticism (see section 2.6.1) about the extent to which the efficiency, effectiveness and adaptiveness performance dimensions are conflicting, independent or

complementary in practice, it has been acknowledged that more research is needed to determine whether the conceptualization of performance into the foregoing set of dimensions actually facilitates the interpretation of export success. Remember the former three-dimensional conceptualization (see section 2.6) has been adopted because it serves the purpose of this study; yet, the latter seeks evidence from export practice to address relevant concerns raised in section 2.6.1. Assuming that there are trade-offs between these performance dimensions, then export practices focusing on short-term performance evaluations would indicate an efficiency orientation that relies on static measures (e.g. see Madsen, 1998). Efficiency implies the notion of short-termism where an over-emphasis on short-term gains (profits) (Coates et al, 1992) becomes detrimental for investments into R & D and long-term growth (Banks and Wheelwright, 1979; Nickell, 1995). In this respect it has been pointed out, "the more a company emphasizes performance in the short-run as a determinant for reward, the greater the tendency for managers to favor the near term. However, if a company allocates equal emphasis to both short-term and long-term goals, decisions appear to put the short and long-terms in better balance" (Banks and Wheelwright, 1979, p. 116). By implication, a greater focus on efficiency in export performance assessments should be clearly manifested in a lower emphasis on a longer time frame.

*H3f: There is a negative relationship between a firm's emphasis on efficiency and the emphasis placed on a long-term horizon.*

In contrast, exporters' emphases on effectiveness and/or adaptiveness should represent a dynamic view of export performance (see section 2.6). Specifically, those exporters that place greater emphasis on the effectiveness and/or adaptiveness dimensions would be expected to assess their export success by attributing relatively higher importance on long-term considerations. Hence:

*H3g: There is a positive relationship between a firm's emphasis on effectiveness and the emphasis placed on a long-term horizon.*



*H3h: There is a positive relationship between a firm's emphasis on adaptiveness and the emphasis placed on a long-term horizon.*

In addition to the set of the (24) hypothesised relationships discussed above, remember from section 3.5 that this study's intention has been to also look for additional relationships that are implied in Figure 3.1. The empirical investigation for such links with contextual factors focuses on (i) an *aggregate* level of assessment that is, *across* export objectives (see chapter 7) as well as (ii) a *disaggregate* level so as to examine the relationship between contextual variables and the assessment of *each* export objective individually (see chapter 8). To be more specific the analysis at a disaggregate level explores the relationship between the context and the selection of (i) the frame of reference and (ii) the time frame employed when assessing the attainment of the export sales, export profit and NPI objectives. Such investigation is in line with this study's aim to offer rare insights into exporters' performance assessment practices and aid the understanding of the notion of export success.

Following the completion of this study's conceptualisation, the next chapter focuses on methodological issues relating to the operationalisation of the conceptual framework discussed above, the questionnaire developed for the survey undertaken, the sample of exporters surveyed and the data collected.

**CHAPTER 4**

**METHODOLOGY**

## 4. METHODOLOGY

This chapter deals with methodology-related issues and begins by explaining the AHP methodological approach employed to operationalise the proposed framework of export performance assessments. Subsequently, the discussion focuses on the research design. Following an introduction to the research design adopted, three main issues are discussed. First, the development of the measurement instrument including information sought and respondents targeted, method of administration and questionnaire type, variable operationalisation and questionnaire design. Second, the discussion focuses on the sampling frame utilized and third, emphasis is placed on providing a detailed account of the data collection undertaken on-line. Before looking into each of these issues in detail, it is important to understand first the AHP methodology used in the context of this study.

### 4.1 An introduction to an AHP approach to the assessment of export performance.

Remember that, *given* a particular objective of interest (e.g. export sales) the attainment of that objective can be comprehensively described by (a) its *frame of reference* and (b) the *time perspective* involved. This was demonstrated in figure 3.3 thereby reflecting the fact that any *single* export objective can be linked to *multiple* export performance indicators. To be more specific, the former figure suggests that the differential emphasis placed on the frame of reference and/or time perspective (see above) will determine different assessments of an export objective's attainment. For example, the attainment of the export sales objective can be assessed by comparing the firm's actual export sales against its planned sales or the export competitors' sales; moreover, such comparisons can be undertaken under a short-term (static) or a long-term (dynamic) perspective. In addition, bear in mind that export firms may strive for different export objectives (Madsen, 1987). Against this background, it was argued earlier (see section 3.3) that differences between exporters' performance assessments could be potentially manifested in (a) the relative *importance* placed on a set of export objectives, and/or (b) the relative

emphasis on the *frame of reference* adopted and/or (c) the relative preference for the *time perspective* considered when assessing success.

According to the proposed index of export success (see section 3.3), one needs to determine which of the export objectives pursued (i.e. export sales vs. export profit vs. NPI) is the most important (or weighs more) in export managers' performance assessments and which mode of assessment (i.e. frame of reference and time frame employed) is the most preferable. In fact it was suggested that the determination of such relative (weighted) importance is required to allow the conduct of valid cross-firm success comparisons. To determine such weights, this study adopted the analytic hierarchy process methodology (see section 3.4.1) called simply, the AHP (Saaty, 1980).

The AHP is a versatile and flexible methodology for multi-criteria problem solving. It is particularly useful for multi-attribute decision making that involves potentially conflicting objectives (exhibiting trade-offs) and/or multiple courses of action (Bogetoft and Pruzan, 1997). The AHP approach has been employed in a variety of disciplines for a variety of problems (Zahedi, 1986), including several marketing applications (Davies, 1999). Its key feature is that it enables the formalisation of our intuitive understanding of a complex problem (Dyer and Forman, 1991) in a way that "allows decision makers to set priorities and make choices on the basis of their objectives and knowledge and experiences in a way that is consistent with their intuitive thought process" (Dyer and Forman, 1991, p.75).

The AHP method is ideally designed to address (simultaneously) *all* the different aspects (see (a) - (c) above) involved in the assessment of export performance. Specifically, the application of the AHP helps link these different aspects mentioned (see (a) - (c) above) and establish priorities (weights) between alternatives by facilitating all the relative comparisons required. With the help of the AHP one can establish (in numerical terms) the relative importance of the export objectives assessed and thus, rank objectives in terms of importance. Furthermore, the former methodology allows one to take into account the mode of performance assessment adopted (the frame of reference/time frame

combination) when multiple export objectives are pursued; in fact, the AHP facilitates the determination of the relative emphasis placed on both the frame of reference (own plan vs. competition) and the time perspective (short vs. long-term horizon) used when export objectives are assessed. Further explanation about how the AHP method works follows.

The AHP structures a problem *hierarchically*, with the *overall goal* at the top, *criteria*, (and sub-criteria if desired) in the middle and *alternatives* at the bottom. The hierarchy can have any number of levels and elements at each level. However, the latter must fulfill the axiom of *homogeneity* suggesting that the elements included at each level have to be comparable (homogeneous) so as comparisons to be meaningful (see also limitations in section 9.6); “for the purpose of making a decision, the hierarchic structure is assumed to be complete” (Vargas, 1990, p.3); the hierarchy should include “criteria and sub-criteria that are independent, not redundant and additive (Rangone, 1996, p. 107). Once a hierarchy has been structured, the next step is to establish *priorities* among the elements at each level; this is done by a series of *reciprocal* comparisons by means of a bounded scale (see more in section 4.2.1) whereby “the decision maker evaluates (in a pairwise fashion) the relative importance, preference, or likelihood of each set of elements with respect to elements at the immediately higher level in the hierarchy” (Dyer and Forman, 1991, p.77). It is also important to mention here the axiom of independence, which assumes that “the weights of the criteria must be independent of the alternatives considered” (Vargas, 1990, p.3) and implies that “the criteria are mutually exclusive” (Partovi, 1994, p.29). Subsequently, a numerical algorithm is applied to calculate the *local priority* of each element (i.e. the relative importance of the element with respect to the “parent” element) as well as its *global priority* (the relative importance of the element with respect to the overall goal) as explained below (see section 4.2). Both local and global priorities are presented as fractions of 1.00; the overall goal at the top of the hierarchy is, by definition, assigned a global priority of 1.00 that is also its local priority.

#### 4.2 Assessing export success with the help of the AHP: an example.

To explain better how the AHP methodology works, an example is provided below, where a four-level hierarchy is developed with the help of *Expert Choice 2000* (EC 2000, Expert Choice Inc) software package (i.e. the computerised version of AHP). This hierarchy structures the assessment of export performance in terms of: (i) the *overall goal* (i.e. export performance), (ii) the *export objectives* considered (i.e. export sales vs. export profit vs. new product introduction), (iii) the *frame of reference* (i.e. own plan vs. competition) adopted and (iv) the *time frame* utilised (i.e. short vs. long-term) to evaluate the export objectives' attainment (i.e. note that while the EC 2000 software is able to accommodate for any number of export objectives, three export objectives were considered only for illustration purposes). The example aims to determine which of the three objectives is the most important with regards to the overall goal (i.e. export performance) as indicated by its weighted priority (see more in section 4.2.2). The Expert Choice 2000 undertakes computations to establish such relative weights (local and global priorities) for the (i)-(iv) mentioned above (see more on weighted priorities in section 4.2.1 below). Two firms (A and B) are used here to illustrate likely differences among exporters' performance assessment approaches and understand the implications of such cross-firm differences. The relevant AHP output is shown in figures 4.1 and 4.2.

Figure 4.1: The export performance assessment (AHP) output for firm A

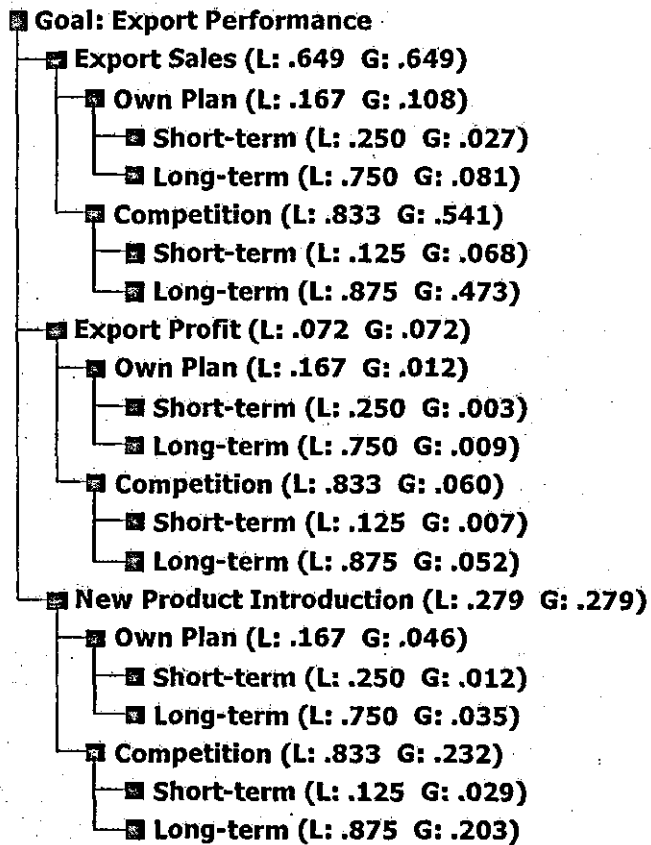
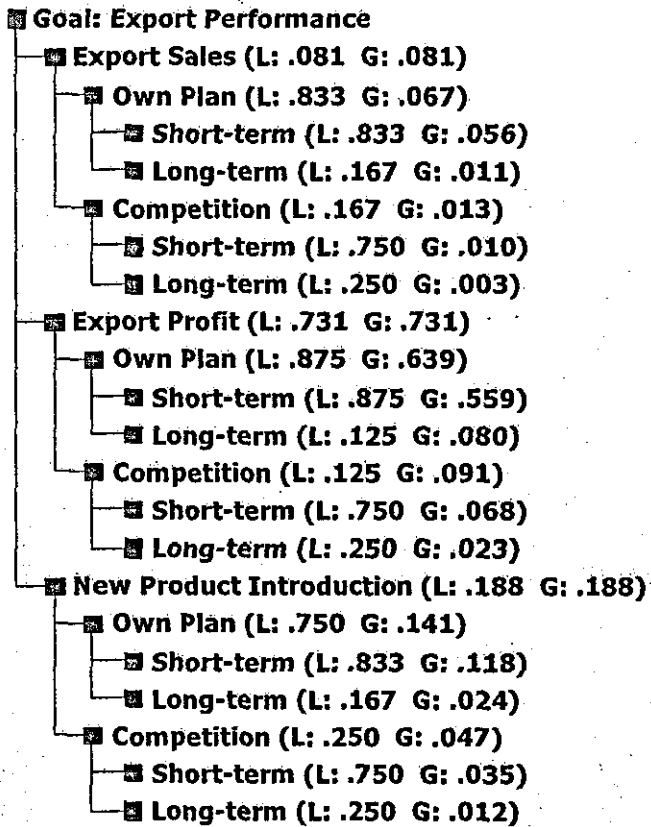


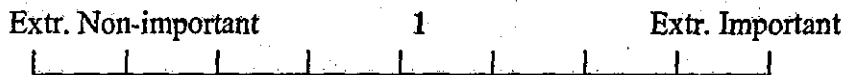
Figure 4.2: The export performance assessment (AHP) output for firm B





#### 4.2.1 Understanding pairwise comparisons and priority weights.

Before interpreting the AHP output for the firms A and B shown above, it is important to understand the notion of pairwise comparisons. These constitute an integral part of the AHP method and facilitate the estimation of priorities for the alternatives compared. Take for instance the export sales and export profit objectives. To enable the calculation of the *relative (weighted) importance* of export sales vs. export profit, the EC 2000 provides a graphic representation of the nine-point scale (see an example below) allowing pairwise comparisons between existing alternatives (i.e. export sales and export profit). The user is actually expected to indicate how much more (or less) important for a firm is the export sales objective *relative* to export profit. While the nine-point scale mentioned above acknowledges that there is “no such thing as negative importance” (Semon, 2001, p.9), the scale is symmetrical; thus, its middle value is one (1) and indicates that the two export objectives (export sales and profit) are *equally* emphasised (or have *equal* importance).



Values on the *right* side of (or above) the middle value indicate *higher* importance for the export sales objective; the last value on the right side of the scale indicates *extreme importance* for export sales relative to profit. Values on the *left* side of (or below) the middle value indicate *lower* importance for export sales (relative to profit); the first value in particular, on the left side of the scale, indicates *extreme non-importance* for export sales (relative to export profit) (see also a description about the relevant measure used in the questionnaire in section 4.5.3.1 below).

It should be also emphasised that pairwise comparisons with the AHP methodology assume a *reciprocal* relationship between alternatives (see Vargas, 1990). Specifically, the notion underlying pairwise comparisons is that alternatives are compared exclusively against each other, which means that each one of them is attributed with the reverse

importance/emphasis of the other. Hence, *any judgment* on the EC 2000 scale shown above has two interpretations. Say for instance, that the last value on the right side of the scale is used to express export sales' relative importance in relation to export profit's importance. The former value essentially reflects (i) an *extremely important* export sales objective in relation to export profit and also (ii) an *extremely non-important* export profit objective in relation to export sales. To express it in numerical terms, the outcome of a multiplication between the two alternatives' relative importance must be equal to one (1).

Relative (reciprocal) comparisons for any pair of alternatives (e.g. export sales vs. new product introduction) by means of the former bounded scale do not necessarily reveal how important each alternative is for the firm. This is particularly the case when more than two alternatives are compared (e.g. export sales vs. export profit vs. new product introduction). *If for example, an export firm considers its export profit objective to be extremely important relative to export sales, it could not be claimed that the former objective is the most important for that firm before the remaining comparisons with the foregoing new product introduction objective are made.* The relative (weighted) importance of all three export objectives for firms A and B are calculated after the pertinent pairwise comparisons are conducted and judgments entered into the EC 2000.

The EC 2000 (AHP) output for firms A (see figure 4.1) and B (see figure 4.2) shows the distribution of global and local (G and L) priority weights along the AHP hierarchy. Despite that both types of priorities derive from relative (pairwise) comparisons, they express different things. The global (G) priority weights reveal the relative importance of the different criteria (sub-criteria and alternatives) with respect to the overall goal (i.e. the export performance). Thus, the (G) priorities reflect the relative importance a particular firm places on (i) its export objectives and (ii) the mode of performance assessment (i.e. frame of reference and time frame) utilised when evaluating the attainment of the export objectives. Given that the (G) priorities are always presented as a portion of 1.00 (i.e. the overall goal's weight), the global (G) weights are distributed hierarchically from the goal (i.e. export performance) down to the lower levels of the hierarchy; specifically, to export objectives (i.e. export sales, export profit and new product introduction), the frame of

reference (i.e. own plan and competition) and finally the time frame (short and long-term). The following example (see table 4.1) shows how the (G) priority of firm A's export sales objective (i.e. with respect to the export performance goal) is distributed to the frame of reference and subsequently to the time horizons employed to evaluate the export sales objective's attainment.

**Table 4.1: Global priorities output for firm A's export sales objective**

FIRM A	Export Sales (G=.649)	
	Own plan (G=.108)	Competition (G=.541)
Short-term horizon	G=.027	G=.068
Long-term horizon	G=.081	G=.473

The (G) weight distribution for firm A's export profit and new product introduction objectives is similar to the export sales' distribution of global priorities shown above. Also, the sum of the export sales objective's (G=.649) and export profit's (G=.072) and new product introduction's (G=.279) priorities equals one (1.00); that is the weight attributed (by definition) to the export performance goal at the top level of the hierarchy (see figure 4.1).

The local (L) priority weights in the same AHP output reflect the relative importance of specific alternatives with respect to a criterion (called *parent node*) directly above them. In fact, it is the export objectives (2<sup>nd</sup> level), the frames of reference (3<sup>rd</sup> level) and the time horizons (4<sup>th</sup> level) that undergo pairwise comparisons (in this particular hierarchy) in order to determine their (L) priorities each with respect. In the example used here, the overall goal (i.e. export performance) (1<sup>st</sup> level of the hierarchy) is "parent" to the export objectives (2<sup>nd</sup> level). Similarly, each export objective becomes "parent" to two frames of reference (own plan and competition) (3<sup>rd</sup> level). Finally, each frame of reference is "parent" to two time horizons (short and long-term). The time frame is not a "parent" to any other alternatives because it represents the last (4<sup>th</sup> level) of the hierarchy developed.

In contrast to the (G) priorities, each local (L) priority weight is determined with respect to its parent node's local priority weight, which is (by definition) 1.00. The parent's (L) weight is divided (through pairwise comparisons) among the alternatives placed one level underneath the parent criterion. Thus, one can express (in numerical terms) the relationship between alternatives with respect to their parent criterion. For example, the relevant AHP output shown in table 4.2 below shows the relative preference for a short vs. long-term time horizon (4<sup>th</sup> level of the hierarchy) when assessing firm A's new product introduction's performance specifically against its own plan (3<sup>rd</sup> level of the hierarchy). For the particular assessment thus, Firm A places higher emphasis on a long-term (i.e.  $L=.750$ ) as opposed to a short-term ( $L=.250$ ) time horizon.

#### **4.2.2 Interpreting the AHP output for Firms A and B.**

Having explained the concept of pairwise comparisons, the derivation of global and local (G and L) priorities and how such priorities are distributed in an AHP hierarchy, firm's A and firm's B output (see figure 4.1 and figure 4.2 respectively) are compared; this is to illustrate potential differences in export firms' performance assessments and understand the implications of such cross-firm differences. It is obvious that for both firms the respective AHP outputs shown in figures 4.1 and 4.2 are identical; other than that, the global (G) and local (L) priorities for both models have different values. For firm A, the global priorities indicate that export sales ( $G=.649$ ) is the most important and export profitability ( $G=.072$ ) the least important export objective. Moreover, with respect to the export sales objective, the local priorities indicate that firm A primarily uses competition ( $L=.833$ ) as a frame of reference, paying much less attention to performance against its own plan ( $L=.167$ ).

Also, when evaluating its export sales performance versus competition, firm A takes a long-term ( $L=.875$ ) rather than a short-term ( $L=.125$ ) perspective. In contrast to firm A, the global priorities indicate that the most important objective for firm B is the export profit ( $G=.731$ ), while the least important is the export sales objective ( $G=.081$ ). Moreover, the local priorities show that firm B prefers to use its own plan ( $L=.875$ ) as

opposed to its competitors' performance ( $L=.125$ ) when evaluating the attainment of its export profit objective. With respect to the export profit assessment against its own plan, firm B adopts a short term ( $L=.875$ ) rather than a long-term ( $L=.125$ ) view.

It is obvious from the above, that the AHP approach enables an *explicit modelling* of the link between performance assessments on the one hand and export objectives on the other. Moreover, it allows *inter-firm* comparisons to be undertaken. This can be accomplished by looking at differences in global priority values for the various levels in the hierarchy. The following table 4.2 summarises both firms' highest global priorities presented in the respective AHP outputs earlier.

**Table 4.2: Contrasting the highest global (G) priorities for firms A and B**

Hierarchy	Firm A	Firm B
1 <sup>st</sup> Level (overall goal)	Export Performance	Export Performance
2 <sup>nd</sup> Level (criteria)	Export Sales G=.649	Export Profit G=.731
3 <sup>rd</sup> Level (sub-criteria)	Competition G=.541	Own Plan G=.639
4 <sup>th</sup> Level (alternatives)	Long Term G=.473	Short Term G=.559

Firm A places more emphasis on a long term (dynamic) assessment of its performance relative to competition and is primarily driven by a sales objective. In contrast, firm B places emphasis on a short-term (static) assessment of performance against its own plan and its most important objective is profit. Similar inferences can be drawn with respect to *any element at any level* of the hierarchy shown in the AHP model while analogous interpretations apply to all results pertaining to the AHP output of firms A and B.

### **4.3 Conclusive remarks**

This study uses the AHP methodology to model the link between performance assessments and export objectives. The AHP output shown above as an example, clearly demonstrates that different firms can have very different approaches to the assessment of their export performance (described by the frame of reference and time frame involved). By comparing the AHP "maps" of different firms (see example in table 4.2) conclusions can be drawn about how export firms' performance should be interpreted. The AHP approach is sufficiently versatile to enable the modelling of any number of export objectives and their (different) assessment modes thereby allowing for the "individuality" of export firms to be preserved in performance comparisons; such "individuality" has to be taken into account when assessing (and comparing) export success (see section 3.3).

The computerised version of the AHP approach (i.e. the EC 2000 software) also provides a useful feature, which allows one to examine the quality of the managers' input (this is captured by an "inconsistency ratio" that reflects how consistent are the pairwise judgements undertaken) and revise judgements if necessary (see more in section 6.3). Further details on the AHP can be found in Saaty (1980), Wind and Saaty (1980), Dyer (1990), Dyer and Forman (1991) and also Davies (1999).

### **4.4 Introduction to the research design.**

Having completed the presentation of the AHP methodology, this section focuses on the research design of the study. This is "the framework or plan for a study, used as a guide in collecting and analyzing data" (Churchill, 1999, p.98). The research design follows from the research objectives and facilitates the operationalisation of the conceptual framework presented in chapter 3. In fact, it serves the study's main purpose (i.e. the testing of the framework) by assisting in the provision of empirical insights into the particular research problem (i.e. the assessment of export success).

The research design includes issues relating to the development of the measurement instrument (information sought, respondents targeted, type of questionnaire and method of administration, variable operationalisation and questionnaire design), the sampling frame and the data collection (Churchill, 1999). Before discussing the foregoing methodological issues in detail, it is important to decide whether this study is better served with a cross-sectional or a longitudinal research design (Malhotra and Birks, 1999). A longitudinal design can have advantages over a cross-sectional design that involves the collection of data at a specific point in time (McDaniel and Gates, 2001); for example, the use of longitudinal data can help researchers capture the temporal character of and explore cause-effect relationships in export performance frameworks (Katsikeas et al, 2000). A downside associated with longitudinal studies is the fact that the generation of longitudinal data can be time consuming and incur considerable financial cost; this makes it difficult for a single researcher to study a business behavior longitudinally (Churchill, 1999; Katsikeas et al, 2000).

A cross-sectional design is likely to be less demanding in terms of money and time in comparison (Burns and Bush, 2000). This is certainly an advantage in cases where measure development procedures require a sample that is as representative as possible of the population for which a particular measure is intended (Spector, 1992) and when a representative sample should be used to allow the generalization of findings for (or inferences about) the population of interest (Hair et al, 1995). Cross-sectional designs have been employed extensively in different research contexts particularly when empirical evidence was needed to contribute to the incremental development of knowledge. For example, most of the earlier studies on market orientation are cross-sectional (e.g. Greenley, 1995; Cadogan and Diamantopoulos, 1998). This is also the case in exporting where cross-sectional designs have been by far the more popular option for data generation in comparison (Zou and Stan, 1998; Katsikeas et al, 2000; Sousa 2004).

In the context of this study, the aspiration is to resolve the problematic issue of export performance measurement in the literature; hence, the study's primary purpose is to empirically test the proposed framework that links the context to export performance

assessments and aims to facilitate the conduct of valid inter-firm success comparisons. A longitudinal research design could be ideal to capture how changes in the contextual factors affect the assessment of export performance over a period of time but this is not one of the immediate aims of this research study. Given that very little is actually known about such causal relationships between contextual antecedents and assessments of export success (Katsikeas et al, 2000), this research aims to establish the existence of such links first, as opposed to study their impact on export performance assessment practices over a period of time. Hence, a longitudinal design for this empirical study would be both more expensive and less useful in comparison to a cross-sectional design. Indeed, the fact that the study's main purpose is to test the proposed export performance assessment framework and also offer empirical evidence on the UK-based exporters' performance assessment practices, suggests the use of a randomly selected, sufficiently large sample of firms (see sample size requirements in section 4.6). A cross-sectional design can serve well the study's purpose under the circumstances. In addition, the fact that a randomly selected sample may consist of firms that are geographically widely dispersed suggests that a cross-sectional design would suit better a study such as this one whose resources (funding, time) are limited.

#### **4.5 The development of the measurement instrument**

The empirical testing of the proposed conceptual framework (see Figure 3.1) involves the collection of information with the help of a questionnaire. The development of the measurement instrument (questionnaire) plays a critical role in the process of primary data collection; the instrument should be "(1) providing the necessary decision making information, (2) fitting the respondent and (3) meeting editing, coding and data processing requirements" (McDaniel and Gates, 2001, p.383).

This study adopted Churchill's (1995) nine-step checklist as a guide for developing the questionnaire.



**Figure 4.3: Procedure for developing a measurement instrument\***

1.	Specify what information will be sought
	↓
2.	Determine type of questionnaire and method of administration
	↓
3.	Determine content of individual questions
	↓
4.	Determine form of response to each question
	↓
5.	Determine wording of each question
	↓
6.	Determine sequence of questions
	↓
7.	Determine physical characteristics of the measurement instrument
	↓
8.	Re-examine the above steps and revise if necessary
	↓
9.	Pre-test questionnaire and revise if necessary

\*Source: Churchill, G.A. (1995), "Marketing research: methodological foundations" 6<sup>th</sup> edition, Dryden Press, Fort Worth, p.397.

Although figure 4.3 suggests that there are several steps that should be sequentially taken in order to ensure a consistent and well thought out development of a measurement instrument (Aaker and Day, 1990; Tull and Hawkins, 1993; Churchill, 1995), these steps are inter-related. For example, the information sought influences the content of the questions asked and subsequently the wording employed, which in turn influences (but also can be influenced by) the question sequence (Tull and Hawkins, 1993; Churchill, 1995). To facilitate the presentation, note that the wording (see section 4.5.4.1) and the sequence of the questions asked (see section 4.5.4.2) are discussed before the form of response (see section 4.5.4.3). A detailed account of the questionnaire's development procedure is provided below starting with the information sought.

#### **4.5.1. Information sought and respondents targeted**

The first important step in the development of a questionnaire is to translate the research objectives into information requirements. Failing to specify the information sought with the questionnaire, suggests poor design reflected in instruments that are incomplete or lack relevance to the research purpose, thereby leading inevitably to measurement errors (Aaker and Day, 1990). The information (data) sought is guided by the research objectives defined earlier (see section 1.2) and determined by the conceptual framework (see Figure 3.1). To be more, the main aim of the data collection is to help: (1) determine the relative importance of the export objectives firms pursue with their export strategies, (2) document how export managers translate objectives into export performance measures as described by the relative emphasis on the frame of reference (own plan vs. competition) and the time perspective (static vs. dynamic) employed and (3) identify specific contextual factors that are linked to the dimensions of the PM and SF matrices presented earlier in the conceptualisation (see section 3.3).

Following the generation of items needed to measure all three aspects of export performance assessments shown in Figure 3.1 namely, the relative importance of the export objectives, the emphasis placed on the frame of reference and the time horizon (see more in section 4.5.3.1), the remaining information needed is guided by the hypotheses presented in section 3.5.1.

Figure 4.4 summarises all information the questionnaire seeks to gather; information about export performance assessment-related variables and also export-, company-, management-, environmental, performance-related and profile (demographic) characteristics. The operationalisation of the variables of interest is discussed in section 4.5.3

**Figure 4.4: Information sought with the questionnaire**

- *The assessment of export performance*
  - Relative Importance of Export Objectives.
  - Relative Emphasis on the Frame of Reference.
  - Definition of Short and Long-term time horizon.
  - Relative Emphasis on the Time Horizon.
  
- *Export-specific factors*
  - Export Experience.
  - Export Commitment.
  - Export Dependence.
  - Export Destination Diversity.
  - Export Resource Inadequacy.
  
- *Company-specific factors.*
  - Firm's Size.
  - Annual Sales Turnover.
  - Firm's Age.
  - Firm's Ownership Status.
  - Product Type.
  
- *Management-related factors*
  - Shared Vision/Purpose.
  - Innovativeness.
  - Open-Mindedness.
  - Risk Orientation.
  - Future-Oriented Culture.
  - Commitment to Learning.
  - Export Market Orientation.

- *Environmental factors*
  - Environmental Uncertainty.
  
- *Performance-related factors*
  - Performance Orientation (efficiency, effectiveness, adaptiveness).
  - Performance Documentation.
  - Satisfaction with the attainment of the export objectives.
  
- *Measures for validation*
  - Excellence in business (EXCEL)
  - Difficulty to complete the questionnaire (Response difficulty)

In light of the fact that the unit of analysis (an issue that has already been discussed in section 2.7.9) is the export firm, the information needed from exporters requires specialist knowledge about specific export objectives firms pursue, how their attainment is evaluated and how success is defined at company level. Consequently, it is important to be clear about where to get credible answers to relevant questions asked in the questionnaire and thus, about the particular respondents targeted (Tull and Hawkins, 1993). Specifically, lower ranking export personnel are less likely to have the specialist knowledge required to answer such questions as those mentioned above. Instead, middle-and/or senior-ranking export decision makers are more likely to constitute the group of respondents that are knowledgeable about how their firms assess export success. Hence, the respondents that are considered more appropriate to be targeted for the needs of this research study are, export managers, export directors, international marketing/sales directors and managing directors.

#### **4.5.2. Type of the questionnaire and method of administration**

Following the determination of the key information sought and informants targeted with the questionnaire, a researcher needs to specify how the data will be collected (Churchill, 1995). This decision refers to the type of questionnaire used and involves a choice

between structured vs. unstructured questionnaires. The former suggests that the questions asked to the subjects and the answers permitted are largely determined in advance. In contrast, the unstructured type contains questions that are only loosely predetermined and the respondents are allowed to reply to such questions by using their own words. The reason that this study used a structured questionnaire is twofold; first, the most important questions referring to export performance assessments involve pairwise comparisons and require specific answers (see sections 4.2.1 and 4.5.4.3). Second, it is quite simple and easy to tabulate and analyse the data gathered (Churchill, 1995).

Data collection also necessitates a decision on a method of administration of the questionnaire. Given the information needed, the population of interest and the type of questionnaire, the decision on the appropriate administration method took also into account characteristics such as questionnaire length, quality of the data sought, constraints such as cost and time to complete the survey (McDaniel and Gates, 2001). The former characteristics may differ across the various data collection methods such as telephone, interviews, mail, and electronic mail; thus, such characteristics play an important role in selecting one of the existing methods (see McDaniel and Gates, 2001; Malhotra and Birks, 1999). For instance, despite being a quick and relatively inexpensive way to collect data, a lack of anonymity during telephone interviews could lead to inaccurate responses in questions that a respondent might consider to be potentially sensitive (Churchill, 1999). Furthermore, telephone interviews used as a means of data collection have the disadvantage that they cannot handle well long questionnaires with many measuring items (McDaniel and Gates, 2001). Given the fact that the questionnaire entails a long list of (about a 100) measuring items, telephone interviews were thought to be less appropriate to use in the context of this study. Conducting the survey through personal interviews can be time consuming and expensive too (Burns and Bush, 2000). On top of that, both the interviewer's intervening role during personal interviews and a lack of anonymity may subject responses on potentially more sensitive questions (e.g. a firm's annual sales turnover or the emphasis placed on, and satisfaction with, specific export objectives) to bias (Churchill, 1999). Although personal interviews have high response rates because they take place with the consent of the respondents (McDaniel and

Gates, 1999), the survey's cost and time period may be increased dramatically. This is mainly due to the number of responses this study needs to generate (see an estimate in this section below) from a sample of busy export professionals that can be geographically spread across the UK (see more about the sampling frame in section 4.6) and whose commitments may require frequent traveling, often at short notice.

A mail survey could help overcome the limitations mentioned above. Given that there are established directories from which one could draw the sample (e.g. Dun and Bradstreet company lists), mail is a relatively low cost administration method that could be employed to facilitate the purpose of this study. Furthermore, the danger of exposing data to interviewer's bias is eliminated as mail surveys provide respondents with anonymity (Malhotra and Birks, 1999). The most important advantages for the present study are that mail surveys can handle longer questionnaires as "respondents [can] work at their own pace" (Churchill, 1999, p.310). The downside is that although there are suggestions in the literature on how to improve response rates (e.g. McDaniel and Gates, 2001; Diamantopoulos and Schlegelmilch, 1996), mail surveys in an industrial context are currently faced with seriously low response rates (Harzing, 2000; Diamantopoulos and Schlegelmilch, 1996).

To address the above concern, it was decided to consider on-line surveying as a method for data collection. This is because it seems to combine advantages associated with both telephone and mail surveys. For example, (i) the speed of obtaining responses, (ii) the follow-up ability to collect data from non-respondents, (iii) the ability to cover and reach large, widely spread target populations (iv) at low cost, (v) the ability to handle structured questionnaires having a long list of items as well as (vi) obtaining hard-to-recall information and (vii) offering freedom from bias of interviewer's effects (Mc Daniel and Gates, 2001). Additional time-related benefits reinforcing the attractiveness of the on-line administration of the questionnaire are the following. A questionnaire in electronic format can save time because there are established facilities on-line where (viii) it can be quickly developed (see more in section 4.5.4.4) as well as (ix) administered to a sample of firms selected on-line (see more in section 4.6), thereby avoiding the time consuming

conventional methods used (see more below). Moreover, (x) it is possible to download the collected data (automatically) into a spreadsheet saving considerable time from typing (and typing mistakes!). The use of on-line surveys for data collection has been researched and tested in different contexts such as multinational companies (e.g. Parker, 1992) and academic settings (e.g. Bachmann, Elfrink, Vazzana, 1996; Tse et. al., 1995; Schuldt and Totten, 1994). With respect to electronic mail (e-mail) in particular, it has been found that this is a very fast and cost effective communication tool that "eliminates postage, printing, and/or interviewer costs" (Schaefer and Dillman, 1998, p.379). While previous studies "report varied results when comparing the data quality of E-mail to mail surveys" (Schaefer and Dillman, 1998, p.382), there is evidence (e.g. Mehta and Sivadas, 1995) to support the argument that e-mail surveys can generate quality responses (Malhotra and Birks, 1999). This is not surprising because e-mail surveys allow repeat contact whenever this is considered necessary. Indeed, using e-mail to facilitate the direct communication between researchers and respondents can contribute to the clarification of specific queries the latter may have about the questionnaire. Consequently, it is possible for a researcher to obtain better information by assisting respondents if asked. Furthermore, e-mail could be useful when missing values are found in a completed questionnaire (although it could not be of much help if the researcher has promised anonymity to the respondents).

An issue that causes concern from a methodological point of view is the relative difficulty to find well-established and up-dated e-mail directories (analogous to mail directories) that could ensure non-biased samples for academic surveys. In response to this concern, it has been suggested to determine "how e-mail can be used in conjunction with other survey media to overcome the coverage problems of online sampling frame" (Dommeyer and Moriarty, 2000, p.49). To be able to reach and obtain responses from respondents without e-mail addresses that could not be able to reach otherwise, Schaefer and Dillman (1998) proposed the development of a standardised e-mail survey methodology based on a multimode (mixed-mode) strategy integrating the advantages of e-mail along with mail. Indeed, "techniques shown to be effective in standard mail surveys were also found to be appropriate for an e-mail survey" (Schaefer and Dillman, 1998, p. 378). Yet, a second concern is the fact that such work has been conducted in

different contexts (other than exporting). In fact that there has not been identified any cross-sectional quantitative research conducted on-line in the exporting field; also, there is neither (to the best of the author's knowledge) any established academic research methodologies about how to conduct large-scale (on-line) surveys of firms operating internationally. Hence, no previous studies could act as an example for the present study. On the negative side, therefore, is the lack of a well-tested methodology that could be used for the needs of this study. In any case, it could be argued that the use of e-mail can at least, facilitate the pilot testing of a questionnaire, because being "cheaper and faster than mail, e-mail lends itself to the pre-testing of survey instruments" (Weible and Wallace, 1998, p.21).

A third concern is that the relevant response rates can vary. For example, previous studies that compared e-mail to mail surveys presented *variations* in e-mail survey response rates; in many cases, mail surveys seem to have generated higher response, too. Table 4.3 includes examples of such response rates reported in the literature (in a context other than exporting).

**Table 4.3: Response rates achieved on-line in a context other than exporting.**

<i>Studies</i>	<i>Response rates</i>
Kiesler and Sproull, (1986) (E-mail & Mail)	67% & 75%
Schult and Totten, (1994) (E-mail & Mail)	19.3% & 56.5%
Oppermann, (1995) (E-mail & two Mail surveys)	48.8% & 26%, 33%
Tse et al, (1995) (E-mail & Mail)	6% & 27%
Bachmann et al, (1996) (E-mail & Mail)	52.5% & 65,6%
Tse (1998) (E-mail & Mail)	7% & 52%
Weible and Wallace, (1998) (E-mail, Web-form & Mail, Fax)	29.8%, 34.4% & 35.7%, 30.9%
Dommeyer & Moriarty, (2000) (E-mail attached & E-mail embedded)	8% & 37%



However, considering that industrial mail surveys suffer from low response rates and that the response rate for UK-based companies should be on average about 19.7% (Harzing, 2000), an increase in the sample size may be required to boost response. In this respect, an on-line survey seems to be more promising (relative to a mail survey). Indeed, if a researcher wishes to increase the sample size "is much less expensive to increase the sample size of an e-mail or Web form survey than it is to do so with mail" (Weible and Wallace, 1998, p.24). In this context, the fact that it should be easier to increase the sample size on-line, suggests that on-line surveying is also more likely to facilitate the reduction of sampling error in the findings (Diamantopoulos and Schlegelmilch, 1997). In addition, one could capitalise on the advancement of technology in on-line communications to achieve multiple contacts of personalised messages (free of charge) that may help raise the response rate (Diamantopoulos and Schlegelmilch, 1996; Schaefer and Dillman, 1998; Costes, 1999). For example, based on a sample of 2000 exporters of which say, 10% (or less) may respond to this study's survey, three contacts per firm (including the follow up) might be necessary to generate between 160 and 200 usable responses (see also section 4.6); hence, the amount of contacts required to pre-test the questionnaire and also help offset any low response may exceed 3000. A single researcher having limited resources would prefer to carry out such large number of contacts by e-mail because it allows him/her to reach a geographically spread cross-section of the population faster than mail and at a very low cost (i.e. no postage and printing costs would be involved).

To sum up, a mail survey do not seem to have any significant advantages in terms of response rate, time, data quality and cost over an on-line survey. Although the latter is still at an early stage and its potential has yet to be exploited in an international marketing context, the feedback for this on-line mode of data collection is already positive, the technology exists and the future prospects are promising (Malhotra and Birks, 1999; McDaniel and Gates, 2001). The potentials of this type of survey have to also be investigated in an export research context (Balabanis et al, 2004) particularly when on-line data collection could provide a solution to the current problem of low response by

facilitating sample size increases (when necessary). Besides the convenience of completing a questionnaire on-line (i.e. no physical handling and postage is involved), an on-line survey should be able to aid the collection of quality data by helping the identification of key informants (export decision makers) and ensuring anonymity (Schaefer and Dillman, 1998). In addition to the above advantages, it could save time from data entry (and correcting typing errors) without incurring additional expenses. Having considered the above and the resource limitations of this study, an on-line survey was thought to be the better option for data collection under the circumstances.

Although "many features of e-mail administration resemble those of mail administration" (Churchill, 1999, p.293), two issues that could have implications for the response rate need to be mentioned. First, Weible and Wallace (1998) pointed out a potential problem concerning the number of wrong e-mail addresses included in a given database. If the latter is high, it could affect response rates and hinder an on-line survey's timely completion due to the high number of e-mailed (contact) messages failing to reach their destination. Yet, an increase in the sample size as explained above can compensate for any negative consequences in terms of low returns. Second, on-line surveys have to rely on the researcher's assurance of confidentiality, particularly when sensitive issues are involved; indeed, completing and e-mailing back a questionnaire as an attachment is characterised by virtual lack of anonymity. Thus, confidentiality must be assured. Third, non-response bias would be difficult to estimate because the time difference between early and late respondents is minimal (Lajoinie-Bourliataux and Gauzente, 1999).

Having discussed the proposed data collection method, the next section discusses the operational definition of the variables included in the instrument before dealing with the design of the questionnaire administered on-line.

#### **4.5.3. Variable operationalisation**

Having outlined the specific information sought, this section looks into the content of the questionnaire and discusses the operationalisation of the variables of interest. The

presentation of all the variables operationalised begins with those relating to export performance assessments (see information sought in section 4.5.1). This is because these are placed first in the questionnaire used in the survey (see question sequence in section 4.5.4.2). The questionnaire can be seen in Appendix A.

#### 4.5.3.1 The assessment of export performance

In line with the research objectives (see section 1.2), the questionnaire first seeks to generate information relating to the study's main *dependent* variable namely, the assessment of export performance (see Figure 3.1). Remember that, given a set of export objectives, the measurement of export success requires the determination of (a) the relative (weighted) importance placed on the export objectives pursued, the relative emphases placed on (b) the frame of reference and (b) the time perspective involved when translating objectives into performance indicators (see relevant conceptualisation in section 3.3). Indeed, it was pointed out (see section 4.1) that differences among export firms' assessments of success could be manifested in the relative importance placed on the set of export objectives assessed and/or the relative emphases placed on the frame of reference employed, and/or the preference for short-term (static) vs. long-term (dynamic) considerations when evaluating the attainment of export objectives.

Given the adoption of the AHP (Saaty, 1980) used to operationalise the export performance assessment conceptualisation (see section 3.3), this study also adopted Saaty's, nine-point scale (see sections 4.2.1 and 4.2.2) to generate data and help *determine* the respective weights required for (a) – (c) above, namely the export objectives, the frame of reference and the time horizon underlying export performance assessments (see details on how such weights were computed in section... following the data collection). To be more specific, the development of this nine-point scale was aimed to facilitate pairwise comparisons (see more about them in section 4.2.2). The former scale allowed respondents to make comparisons between two entities and establish the entities' relative (weighted) importance.

In fact, respondents were asked to consider:

(i) *The relative importance of export objectives*

The relative importance attached to export sales versus export profit versus new product introduction objectives. A three-item measure was developed to facilitate explicit comparisons between export objectives. Based on a nine-point scale the three statements below are used to capture the relative importance exporters attribute to each pair of objectives compared (see question 1 in the questionnaire shown in Appendix A):

In your firm what is the *relative importance* placed on the following export objectives?

- Export sales relative to export profits
- Export sales relative to new product introduction
- Export profits relative to new product introduction

Using the nine-point scale introduced earlier (see again section 4.2.2) requires from respondents an understanding of what it means to think in *relative* terms when undertaking pairwise comparisons. An example may help recall the logic behind such comparisons. Take the 1<sup>st</sup> item above asking from respondents to use the scale to compare the importance of a firm's export sales objective relative to the export profit objective. The scale's middle value is five (5) and indicates equal importance (or emphasis) between the two alternatives compared (i.e. export sales vs. export profit). Judgments placed on the right side of the middle value (i.e. numerical values from 6 to 9), indicate *higher relative importance* for one of the alternatives (i.e. export sales is more important than export profit), while judgments placed on the left side of the middle value (numerical values from 4 down to 1), reflect exactly the reverse (i.e. export sales is less important than export profit). The value of one (1) in particular, indicates much less importance for, say, the export sales objective (in relation to export profit); the value of nine (9), indicates much more importance, for the export sales objective respectively.

Remember, respondents are asked to compare export objectives in pairs. Each comparison aims to determine how much more (or less) important each objective is, *relative to* the other (i.e. but *not* how important each objective is for the firm). Thus, any judgment placed on the scale mentioned above, reflects a *reciprocal* relationship between two export objectives. If, for instance, export sales receives a judgment of nine (9) in comparison to export profit, then export sales is considered to be a *much more* important objective for a firm, than export profit; also, the latter is assumed to be a *much less* important objective in relation to export sales. In contrast, if export sales takes the value of one (1), it means that it is a *much less* important objective in comparison to export profit; equally, the latter is considered to be a *much more* important objective relative to export sales (see also sections 4.2.1 and 4.2.2).

(ii) *The relative emphasis placed on the Frame of reference*

Similarly, respondents are also asked to use the nine-point scale mentioned above to indicate for *each* export objective separately, the relative emphasis placed on evaluating actual performance against export firms' own export plan vs. competitors' performance (see question 2 in the questionnaire shown in the Appendix A). A three-item measure is developed to facilitate relative comparisons between the two frames of reference (own plan vs. export competition) per export objective assessed. The three statements are:

When evaluating the attainment of your export objectives what is the *relative emphasis* placed on the following assessments?

- Sales performance against own plan versus sales performance against main export competitor(s).
- Profit performance against own plan versus profit performance against main export competitor(s).
- Rate of new product introduction against own plan versus that of main export competitor(s).

The selection of the former two referents reflects the view that "performance relative to competitors is at least as important as performance relative to one's own expectations" (Eccles and Pyburn, 1992, p.41).

*(iii) Definition of Short- and Long-term time horizons*

Furthermore, an open-ended statement asks respondents to indicate the actual time (in months) associated with their perceptions of the short- and long-term assessment of export performance (see question 3 in the questionnaire shown in Appendix A). In fact:

When assessing the attainment of your export objectives what is the *time horizon* you normally use?

- Short-term
- Long-term

The use of different time horizons reflects the non-static nature of success (Brown and Laverick, 1994; Eccles, 1991), thus enabling a dynamic assessment of export success (Matthyssens and Pauwels 1996).

*(iv) The relative importance placed on the Time horizon*

In addition to the above, for *each* export objective/frame of reference combination (six in all, reflecting three objectives times two frames of reference), respondents are asked to use the aforementioned nine-point scale to indicate the relative emphasis placed on short-versus long-term considerations. Two three-item measures are employed. The first measure captures the relative emphasis placed on a short- vs. long-term horizon for each export objective's assessment against the firm's own export plan (see question 4 in the questionnaire shown in Appendix A). This measure includes the following three statements capturing the export managers' relative preference for short- vs. long-term assessments of the export sales, export profit and new product introduction objectives against the own plan referent.

When assessing the attainment of your export objectives against your *own plan*, what is the *relative* importance of short- versus long-term considerations?

- Short-term export sales relative to long-term export sales.
- Short-term export profits relative to long-term export profits.
- Short-term new product introduction (NPI) relative to long-term NPI.

The second measure employed refers to comparisons against competition. It consists of three statements that are similar to those shown above; the only difference is that the phrase export competitors substitutes the phrase own plan highlighted above (see question 5 in the questionnaire shown in Appendix A).

This section dealt with variables relating to the assessment of export performance. The next sections focus on the *independent* variables placed in the left side of the contextual framework shown in Figure 3.1 and also variables reflecting company demographic characteristics.

#### **4.5.3.2 Export-specific characteristics**

The discussion starts with the five export-related antecedent factors included in the framework. These are export experience, export commitment, export dependence, export destination diversity and export resource inadequacy all of which have been used before in the literature (see for example relevant reviews by Chetty and Hamilton, 1993; Zou and Stan, 1998) and also to develop hypotheses for this study (see section 3.4). In line with the literature where export experience has been widely measured (e.g. Seifert and Ford, 1989; Katsikeas and Morgan, 1994), this study uses a single-item measure of the number of years a firm has been exporting to capture experience. The degree of a firm's commitment to exporting is measured by using three seven-point Likert type items (i.e. strongly disagree/ strongly agree variety):

- In our firm, export operations are carefully planned.
- Our firm's management is committed to exporting.
- Our firm commits substantial resources to exporting.

Following an exploratory factor analysis, Cavusgil and Zou (1994) found that commitment to export venture is one of the three characteristics influencing favorably export-marketing performance (at the export venture level). Also the same study found commitment to be positively related to aspects of marketing strategy such as price competitiveness and the level of support to foreign distributor/subsidiary. The three items shown above are slightly amended from those originally used by Cavusgil and Zou (1994) as this study's unit of analysis is the export firm (not the venture). Higher scores on the scale employed indicate higher commitment to exporting.

Export dependence is measured with a single item capturing a firm's export sales as a percentage of total sales (Diamantopoulos and Inglis, 1988) although it could also be measured as a percentage of the total profits derived from exporting as well as the number of product groups exported (Cadogan, 1997). The diversity of export destinations of the participant firms is determined by asking respondents to indicate the number of countries served by their firms' export operations (Cavusgil and Zou, 1994; Cadogan, 1997). A three-item seven-point Likert type scale measures the extent of deficiency in an export firm's capacity to engage in export activities and captures resource inadequacy. In fact, higher scores on the scale indicate a lack of management time, effort, personnel and financial resources necessary for export activities.

- Our firm's export expansion is limited by the time and effort that senior management can devote to exporting.
- Human resources limit our firm's ability to increase export activities.
- Our firm lacks the financial resources needed to expand our export efforts.

Unlike the previous four measures mentioned, this scale has not been used extensively in the export literature. Nevertheless, Bello and Gilliland (1997) found that firms with



inadequate managerial and financial resources were less likely to impose process controls and influence their foreign distributors' marketing methods and procedures.

#### **4.5.3.3 Company-specific characteristics**

The study employed several company-related variables (six altogether) such as firm's size captured in terms of number of employees and annual sales turnover, firm's age, firm's ownership status, type of products and respondents' status. Firm size is used as an independent variable in the proposed framework (see Figure 3.1) while the rest are demographic variables reflecting the participant exporters' profile. The above group of company-specific variables has been well used in the export literature to explain export behavior and/or describe the samples of firms taking part in cross-sectional studies (see for example review papers by Aaby and Slater, 1989; Chetty and Hamilton, 1993; Zou and Stan, 1998). All the relevant scales are taken from the literature without adaptations. Firm size, a factor that has been considered extensively in export research (e.g. Diamantopoulos and Inglis, 1988; Lages, 2000) is measured in terms of the sum of a firm's full- and part-time employees as well as an export firm's annual sales turnover. With respect to the profile variables mentioned, respondents are asked to report the year their firm was established in order to specify a firm's age. The respondent organisation's ownership status is determined by asking respondents to consider the following set of categories and report which one best describes their companies: (1) independent private firms, (2) independent public liability (PLC) companies, (3) subsidiary/affiliate companies and (4) division of a multinational company (Cadogan, 1997). A set of different categories including consumer goods, industrial goods and services helps collect data about export firms' type(s) of products.

#### **4.5.3.4 Management-related characteristics**

The proposed framework includes seven management-related factors whose role in export performance assessments is considered to be influential (see Figure 3.1). These are shared vision/purpose, innovativeness, open-mindedness, risk orientation, future-oriented

culture, commitment to learning and export market orientation. Such factors are “within the reach of management” (Cavusgil and Zou, 1994, p.13) so as to be manipulated beneficially for a firm; they can potentially offer interesting insights into the assessment of export success as discussed earlier (see hypothesised relationships in section 3.5.1).

Starting with the shared vision/purpose construct, a four-item seven point Likert type scale is used to capture the extent to which shared vision, purpose and goals exist within an export firm. The higher the scores, the higher the shared purpose and coherence in the firm. The measure was adopted from Sinkula et al, (1997) who found an organisation’s shared vision/purpose to be one of the three factors representing the learning orientation construct. The items are shown below:

- There is a commonality of purpose in our company.
- There is agreement on our organisational vision across all levels, functions and divisions.
- Employees are committed to the goals of our company.
- Employees view themselves as partners in charting the direction of the company

A four-item seven-point Likert type scale is used to measure the innovativeness of an export firm. Innovativeness is considered to be part of a marketing culture (Webster, 1993). Out of the four items shown below, the first three have been adopted from Webster’s (1993) marketing culture scale used in a service firm context. The fourth item (see below) was taken from a scale capturing excellence in business (Excel) developed by Sharma et al (1990) and used for validation purposes (see more in section 4.5.3.6). The item was added here because it refers to innovativeness at the top management level.

- In our firm all employees are receptive to ideas for change.
- In our firm we keep up with ideas for technological advances.
- Our firm is receptive to change.
- Our firm’s top management creates an atmosphere that encourages creativity and innovativeness.

Like shared vision/purpose, an organisation's open-mindedness is found to represent the learning orientation construct influencing positively marketing information generation and dissemination as well as changes in a firm's marketing strategy (see Sinkula et al, 1997). A three-item, seven-point Likert type scale is used to measure export firms' open-mindedness:

- We are not afraid to reflect critically on the shared assumptions we make about our customers.
- Personnel in our firm realise that the very way they perceive the market place must be continually questioned.
- In our firm we rarely collectively question our biases about the way we interpret customer information.

The scale was adapted from Sinkula's et al, (1997) scale used originally to measure the extent to which an export firm displays an open-minded approach to its customers and markets, by questioning established perceptions and assumptions. Also, a six-item, seven-point Likert type scale is used to measure the exporters' risk orientation:

- Our management provides enough incentives to work on new ideas despite the uncertainty of their outcomes.
- If you fail in the process of creating something new, our management encourages you to keep trying. Initial failures don't reflect on your competence.
- Top management in our firm believes that higher financial risks are worth taking for higher rewards.
- Top managers here encourage the development of innovative marketing strategies knowing well that some will fail.
- Top managers in our firm like to "play it safe".
- Our top management like to implement plans only if they are certain that they will work.

The scale is constructed from two quite similar scales. The first three items come from a three-item scale measuring the encouragement of risk taking as part of the organisational structure of high technology firms; the scale was used by Song and Parry, (1993) to capture management's attitude towards risky projects and new product failure. The remaining three items are taken from a five-item scale originally used by Menon et al, (1997) to measure risk aversion (for top management). In fact the latter scale measured the extent to which top management is willing/unwilling to accept a risk for occasional failure as in everyday business. Two items were dropped because it was thought they seek information already covered by the rest of the items.

A three-item seven-point scale is used to measure the extent to which the culture of export firms is future-oriented. The higher the score, the more a firm takes a long-term view of its future and plans ahead. The scale was used by Kitchell (1995) in an industrial marketing context and consists of the following items.

- Our firm values highly the ability to plan ahead.
- Our management is constantly planning for the future of the company.
- People here are encouraged to take a long-term view of their career with the company.

A four-item seven-point Likert scale is used to capture export firms' commitment to learning (see below). The scale was employed in Sinkula's et al., (1997) study to measure the extent to which organisations value learning as an instrumental approach for improvement, maintaining competitive advantage and organisational survival.

- Managers agree that our firm's ability to learn is the key to our competitive advantage.
- The basic values of our firm include learning as key to improvement.
- The sense around here is that employee learning is an investment not an expense.
- Learning in our organisation is seen as necessary to guarantee organisational survival.

This study also considers the export firms' market orientation, which suggests an important characteristic of a firm's culture because it is associated with performance (Cadogan and Diamantopoulos, 1998; Cadogan et al, 2002a,b). A ten-item, seven-point Likert type scale is used to capture export market orientation. This is essentially the summary scale for market orientation developed by Deshpande and Farley (1996) after a meta-analysis of three market orientation scales. The higher the scores the more market oriented a firm is. The items are:

- Our export objectives are primarily driven by customer satisfaction.
- We constantly monitor our level of commitment and orientation to serving export customer needs.
- We freely communicate information about our successful and unsuccessful competitor experiences across all business functions.
- Our strategy for competitive advantage is based on our understanding of export customers' needs.
- We measure export customer satisfaction systematically and frequently.
- We have routine or regular measures of customer service.
- We are more customer focused than our export competitors.
- We believe this business exists primarily to serve customers.
- We poll end-users at least once a year to assess the quality of our products and services.
- Data on export customer satisfaction are disseminated at all levels in this business unit on a regular basis.

#### **4.5.3.5 Environmental characteristics**

Shifting attention from the operational definition of the management-related variables to the external environment (see Figure 3.1), this section looks into the environmental uncertainty surrounding assessments of export success. Although an export firm's external environment includes both the domestic and the export environment, it was decided to focus only on the latter because the total number of questions in the instrument

had to be kept within reasonable limits. To capture environmental uncertainty, a nine-item, seven-point Likert type scale is used. It measures the degree to which a firm's export market is volatile and unpredictable. The scale was adapted from Celly and Frazier's (1996) study where the validity of the measure was found to be satisfactory. The above study investigated the extent of market volatility and unpredictability faced by channel members in a context of decision-making. The set of the nine items used is the following.

- It is a slowly changing environment.
- It is a stable environment.
- It is a certain environment.
- It is easy to monitor trends.
- Export sales forecasts are quite accurate.
- It is a predictable environment.
- It is a complex environment.
- There is sufficient information for export marketing decisions.
- The environment is full of surprises.

The next section looks into the performance-related variables operationalised in the context of this study.

#### **4.5.3.6 Performance-related characteristics**

This group consists of three variables namely performance orientation, performance documentation and satisfaction with the attainment of export objectives, the first two of which (see Figure 3.1) represent likely contextual influences in the evaluation of export success (see relevant hypotheses in section 3.5.1). With respect to the performance orientation variable, respondents are asked to indicate on a seven-point itemised rating scale format the importance their firms attach to the efficiency, effectiveness and adaptiveness orientations respectively. This is a profile variable representing a profile

multidimensional construct (see Law, Wong and Mobley, 1998) where each orientation is captured by a description (statement). The three statements are the following:

- The achieved output goals (e.g. shareholder value, profitability) relative to the inputs used to achieve them (e.g. time, cost, manpower).
- The achieved output goals (e.g. customer satisfaction, export sales) relative to expectations (as reflected in export plans).
- The firm's ability to adapt to the changing demands of the environment (e.g. new export market entry, new product introduction).

The higher the score corresponding to each statement, the more efficient and/or effective and/or adaptive an export firm is perceived to be. Moreover the performance orientation variable is used to confirm trends in the literature regarding the actual emphasis managers tend to place on performance dimensions when assessing performance (Clark, 2000). In fact, empirical data is sought to establish the extent to which firms give any consideration to effectiveness and adaptiveness dimensions or they are driven primarily by efficiency (Bonoma and Clark, 1988; Kokkinaki and Ambler, 1999; Clark, 2000). The performance orientation can be used in conjunction with the AHP output to identify inconsistencies between where a firm's main performance focus is claimed to be (e.g. effectiveness) and where it actually is (e.g. efficiency). In addition, it will be possible to establish whether there are trade-offs and/or complementarities among the former performance dimensions.

Export managers are also asked to use a four-item, seven-point Likert type scale to describe the degree to which existing forms of documentation adequately help assess their export firms' performance. Jaworski and McInnis (1989) used this scale to measure performance documentation in a marketing management control context. The items are slightly adapted to suit this study's export context because the measure has not been used before in exporting. Lower scores on the scale indicate that the present documentation cannot adequately facilitate a firm's export performance evaluation. The measure consists of the following items:

- Documents exist to measure our firms export performance after activities are complete.
- Our export performance can be adequately assessed using existing documents.
- Documents exist to assess our firm's export performance on most of our activities.
- Information about how our firm's export performance will be evaluated has been communicated to personnel involved in export operations.

Furthermore, the measurement instrument seeks information about the managerial evaluation of (satisfaction with) the attainment of each export objective studied. Specifically, respondents are asked to report their satisfaction with the export sales, export profitability and NPI objectives' attainment using a seven-point itemised rating type of scale format. The measure of this particular variable consists of three statements each of which captures the exporters' subjective evaluation for each export objective studied. The higher the score is, the greater the satisfaction with the attainment of a particular objective. Yet, as was the case with the performance orientation above, this measure captures a profile multidimensional construct where the three items are not added/combined (see also section 5.5.3). The reported satisfaction with the attainment of the export objectives is used to facilitate the calculation of the export success index introduced earlier in section 3.3.

#### **4.5.3.7 Measures used for validation**

Two more measures are also incorporated into the questionnaire. These measures seek to validate other research findings and may enable a greater interpretation of the data. Specifically, the study seeks to identify "excellent" firms (Sharma, Netemeyer and Mahajan, 1990) in order to provide a means of comparison with the proposed index of export success. Also, in light of the originality of the on-line survey used in this empirical study, an additional measure is included to capture the difficulty to respond to the questionnaire (see response difficulty below).



Starting with the measure of excellence in business (EXCEL), this is a fourteen-item seven-point Likert type scale measuring several managerial principles and practices claimed to be necessary (but not sufficient) prerequisites to an excellent performance. It has been adapted from an originally sixteen-item scale developed by Sharma et al, (1990) aiming to capture eight attributes of business excellence that were initially espoused by Peters and Waterman (1982). Corporate excellence is viewed as a constellation of company management principles and practices that lead to sustained performance (Sharma, et al, 1990). These are: (a) bias for action, (b) being close to customers, (c) autonomy and entrepreneurship, (d) productivity through people, (e) a hands on, shared, value driven system, (f) simple form and lean staff, (g) certain core centralised values, while some others are decentralised, (h) focus on what is known and done best as well as resist to conglomeracy. Two items have been dropped from the original (sixteen-item) scale. Specifically, the item pertinent to innovation ("our firm's top management encourages creativity and innovativeness") was placed along with the rest of the items that constitute the measure of innovativeness described in section 4.5.3.3. The second item was similar to the item used in the measure of risk orientation also described earlier in section 4.5.3.3 ("our management provides enough incentives to work on new ideas despite the uncertainty of their outcomes") and thus, was dropped altogether from EXCEL. The fourteen items are summed up to form an index of business excellence where the higher the score the more excellent the firm is considered to be; in fact, Sharma, et al. (1990) report score ranges from 16 to 112. The items are:

- Our firm has a small staff that delegates authority efficiently.
- Our firm's top-level management believes that its people are of the utmost importance to the company.
- Our firm instills a value system in all its employees.
- Our firm provides personalised attention to all its customers.
- Our firm's values are the driving force behind its operation.
- Our firm is flexible and quick to respond to problems.
- Our firm concentrates in product areas where it has a high level of skill and expertise.
- Our firm has a small but efficient management team.

- Our company develops products that are natural extensions of its product line.
- Our firm truly believes in its people.
- Our firm considers after-sales service just as important as making the sale.
- Our firm believes in experimenting with new products and ideas.
- Our firm believes that listening to what consumers have to say is a good skill to have.
- Our firm is flexible with employees but administers discipline when necessary.

This measure is included for validation purposes, that is to identify the -so called- excellent export firms (i.e. firms with higher scores in terms of excellence) and compare them with the results obtained by using the index of export success. Provided that the Excel measure is found to be reliable and uni-dimensional (see more in section 5.6.1) it is also intended to be used to identify modes of export performance evaluations practiced by "excellent" firms and compare them against the respective performance assessment modes of exporters that scored lower in terms of excellence. In this respect this validation measure would enable greater interpretation of the data.

Respondents are also asked to use a seven-point itemised rating type of scale format to report the perceived effort to complete the questionnaire used in the on-line survey. This response difficulty measure is adapted from Menon, et al, (1995) who used it in an academic context (i.e. undergraduate business course) to capture the perceived cognitive effort in answering a question. The measure consists of three statements each of which represents the difficulty in answering questions in terms of effort, time and thought respectively. Higher scores indicate higher difficulty. Yet, the scores of each of the three statements are not added/combined to capture an overall response difficulty. This is a profile variable (see also section 5.6.2). The measure is useful from a methodological perspective as it may indicate likely reasons for non-response thereby providing some idea about the validity/quality of the responses collected during the on-line survey.

This section dealt with the content of the questions asked and discussed the operationalisation of the variables incorporated in the questionnaire. An additional general point that needs to be made about the questionnaire's content before looking into

other substantive issues relating to its design (see next section), is the fact that particular care has been taken to avoid issues that might be considered sensitive. To be more specific, while the research topic itself is not deemed particularly sensitive, potentially sensitive questions pertinent to say, the firms' financial performance or the managers' age/academic qualifications have been avoided.

#### **4.5.4 Questionnaire Design**

The questionnaire design section contains four parts. The first part deals with the wording of the questions asked and the item polarity. This is followed by the second part dealing with the question sequence and the questionnaire's layout. The third part focuses on the form of response and type of scales used. The fourth part begins with a discussion emphasising the benefits modern technology offers in terms of the web-based development of questionnaires and concludes with a description of the questionnaire's physical characteristics. Before looking into each of these issues in detail, it has to be made clear from the outset that this study's survey has been undertaken on-line by using two versions of the same instrument (see more in section 4.5.5). The first is a web-based form and the second is a word format version sent as an e-mail attachment. Aside from some small differences in terms of physical characteristics (see section 4.5.4.4) the two versions of the questionnaire are similar (both can be seen in Appendix A).

##### **4.5.4.1 Question wording and item polarity**

Emphasis has been placed on the wording of the items incorporated in the measurement instrument. Were questions poorly worded, they may have been answered incorrectly or even refused an answer (Malhotra and Birks, 1999). The latter leads to "item non-response" while the former (i.e. incorrect answers) produces measurement error where a recorded score does not equal the true score of a respondent (Churchill, 1999). Instead, the measuring items had to be clear and easy to understand (not confusing) (see feedback received from the pre-test). Given the selection of the sampling frame of UK exporters, care was also taken for the selected questions to be able to apply across different export

firms (i.e. large or small, experienced or not, etc.) and help exporters to respond. To serve this end, any colloquialism, jargon and very lengthy items had to be avoided (Malhotra and Birks, 1999). In addition, questions needed to make sure that they were not ambiguous, offensive, leading or in any way, bias inducing (Churchill, 1999). In this respect, the fact that many of them had been adopted from the literature and they had been used before by previous studies was reassuring. Nevertheless, all measuring items have been put to test again by pre-testing the instrument (see section 4.5.5).

Questions should be either positively or negatively phrased (Malhotra, 1999). Thus, care has been taken to avoid using both positively and negatively phrased questions that may confuse respondents. While the negatively worded questions may need reversal of item polarity (De Vellis, 1991); such negatively worded items have been kept to a minimum in this study. In fact, the question items that needed re-coding are:

- (i) Question No 7 (Environmental uncertainty): All items except, items 7 and 9.
- (ii) Question No 8 (Organisational culture): Items 11, 16 and 17.

#### 4.5.4.2 Question sequence

It has been claimed that "a well organised questionnaire usually elicits answers that are more carefully thought out and detailed" (McDaniel and Gates, 2001, p.367). Indeed proper layout and flow that follows common sense guidelines are considered to be important prerequisites for a respondent friendly questionnaire and facilitate its completion (Burns and Bush, 2000). While a questionnaire needs to have a smooth, logical flow that facilitates understanding, there are no hard-and-fast principles to guide the researcher in this respect. However, it is generally agreed that a proper questionnaire sequence secures key information (i.e. relating to the research objectives) first and leaves questions for classification purposes, last (Churchill, 1999; McDaniel and Gates, 2001). The first questions are crucial in order to get the respondent in a responding mode rather than discourage him/her. Thus, it is considered good practice if the first questions are interesting, relatively non-difficult to answer and non-threatening, while more sensitive

questions (e.g. income or age) would be better to be “diffused” to the main body of the instrument (Churchill, 1999; Burns and Bush, 2000).

The exporters’ performance assessment practices are considered to be key information for this study (see research objectives in section 1.2). The study seeks to gather such information with the help of the AHP-related questions. These questions (four altogether) need from respondents to think in *relative* terms unlike the rest of the questions asked in the context of this study (e.g. questions related to contextual factors). In light of the fact that the export performance assessment-related questions require different mental effort to complete, they have been grouped together (Burns and Bush, 2000). Moreover, this group of questions has been placed first in (rather than at the end of) the questionnaire because it was intended to generate crucial information for this research. This type of format was considered appropriate to take advantage of the fact that respondents are not tired yet or even bored from answering.

The rest of the questionnaire utilises a different type of format referred in the literature as the sections approach (Burns and Bush, 2000); this is a simple way to organise a questionnaire into logically related sets (sections), each reflecting a different thematic entity (topic). Dividing the questionnaire into sections is a type of format that can be used to avoid confusing the respondent by changing topic before actually answering all questions related to a specific topic (Churchill, 1999). This approach is used to organise the management-related variables of the questionnaire that constitute its main body. Despite that no headings have been used to divide the questionnaire into different sections (e.g. organisational characteristics and so on), the items of the different contextual variables (e.g. risk orientation), have been grouped into pools of items reflecting individual thematic entities (e.g. organisational culture). The questionnaire includes three such pools of questions relating to different topics, namely, organisational culture, vision and learning, importance of exporting (see questionnaire in Appendix A). Specifically, the question relating to the organisational culture is composed by seventeen measuring items capturing variables such as shared vision/purpose, innovativeness, open-mindedness and risk orientation. The question on vision and learning (seven items in

total) incorporates two variables that is, future-oriented culture and commitment to learning. The question concerning the importance of exporting, consists also of two variables namely, export commitment and resource inadequacy captured by six items. In addition to keeping an order and maintaining a logical flow between topics, such groupings allow one to keep a long questionnaire as short as possible. Indeed, it has been suggested that most on-line surveys "should take less than 15 minutes to complete" (McDaniel and Gates, 2001, p.372) and an effort has been made to conform to the above suggestion (see questionnaire length in section 4.5.4.4). The questions pertaining to the topics mentioned above have been placed in the middle of the questionnaire. Other contextual variables in the main body of the questionnaire (e.g. market orientation, environmental uncertainty) remain separate, as it could not be possible to group them under one particular thematic entity. This is also the case for the Excel scale used to validate the proposed index. Those separate contextual variables and the former validation measure that do not reflect one specific topic and could not be grouped together, have been inserted either in between sections where it was possible for transition questions to be inserted or wherever the context allowed, so as to maintain the logical smooth flow in the main body of the questionnaire. Finally, the last part of the questionnaire was reserved for profile-related (classification) questions (Churchill, 1999) while the question about the difficulty to complete the questionnaire (response difficulty) has been placed at the end.

To summarise the sequence (layout) described above, export performance assessment-related questions have been placed first, questions relating to contextual variables and the Excel scale in the middle while classification and response difficulty questions at the end. Finally, respondents are thanked for their co-operation. Having also taken into account the fact that the questionnaire contains overall, 25 questions some of which consist of a large group of measuring items, an effort was made to place shorter questions after long questions in order to minimise monotony (this way it was thought that the questionnaire's layout would be less likely to discourage respondents from answering).

#### 4.5.4.3 Form of response and type of scales used

The majority of the questionnaire items demand closed-ended (itemised or fixed response) questions. The combination of a structured questionnaire with closed-ended responses, has subjected all respondents to the same set of questions and pre-specified alternative answers (Churchill, 1999). The fact that the answers are pre-specified suggests that the data collected are directly comparable thereby facilitating their statistical analysis (Malhotra and Birks, 1999). Closed-end type of answering has also been considered to be appropriate to make the present questionnaire easier to fill in and more respondent friendly (Burns and Bush, 2000). In contrast, open-ended questions are those where respondents are free to reply in their own words rather than select an answer that best describes their views from a set of pre-specified alternatives (Churchill, 1999). Indeed, respondents tend to be briefer in writing than speaking which makes open-ended questions rather less suitable for (self-administered) questionnaires (Malhotra and Birks, 1999). The latter type of questions also presents problems with data categorisation and coding that could potentially hinder the analysis of the data; thus, such questions have been kept to a minimum in this study. Nevertheless, some open-ended questions have been necessary. These require brief answers only (e.g. number of years that a firm has been exporting) although adequate space has been provided for the respondents to write. With respect to the multi-chotomous (i.e. one or more of the response alternatives need to be selected) measures involved (e.g. what are the main products produced by your firm), an open-ended option has also been included (i.e. other-please specify), so as to let exporters present their views. This option has ensured that the response alternatives have indeed been exhaustive.

The study has mainly used a mixture of Likert and itemised rating types of scale format. The former (i.e. five or seven response categories are typical) require from respondents to indicate the degree to which they agree or disagree with existing statements (Diamantopoulos and Schlegelmilch, 1997) while the itemised rating (seven point) scales have got bipolar labels such as not at all satisfied-very satisfied for respondents to indicate their reactions to objects of interest (Malhotra and Birks, 1999). Both the Likert

type and the itemised rating scales have been used extensively and successfully in marketing research (McDaniel and Gates, 2001). The majority of the variables in this study have been measured with seven-point scales (i.e. the variance of responses is greater) as the more the scale points the greater the reliability of a measure (Churchill, 2001).

While developing the measuring items, an effort has been made to use the highest possible level of measurement across the questionnaire, in order to allow greater flexibility in the exploitation of the data collected (Diamantopoulos and Schlegelmilch, 1997). In this respect the Likert scales were assumed to represent interval data (Churchill, 1999) while some open-ended questions employed (e.g. percentage of total sales derived from exporting) reflect ratio type of data.

An exception to the seven-point Likert type of scales used to measure most of the items in the questionnaire, are those items intended to collect data to feed the Expert Choice 2000 software. These have been measured with a type of comparative nine point rating scales as dictated by the Analytic Hierarchy Process (AHP) methodology underlying the aforementioned EC 2000 software. Generally, "comparative rating scales involve relative judgments because raters make their judgments of each attribute with direct reference to the other attributes being evaluated" (Churchill, 1999, p.406). This type of scale is essential when insights are needed into the *relative* thinking of respondents presented with alternatives (i.e. the constant sum scale is a good example, where the sum of points allocated to the alternatives should be equal to, say, one hundred). While the AHP requires comparative judgements to be made at the different levels of a hierarchically structured problem so as to rank existing alternatives in terms of their relative importance (in relation to each other) (Saaty, 1980; Davies, 2001), the actual scale used to facilitate comparisons differs from a constant sum scale.

Initially, the scale (see also section 4.2.1) can be perceived to be a normal itemised nine-point scale (not a comparative constant sum scale) extending from a "*much less important*" to a "*much more important*" value. Yet, remember that this scale has been



constructed to reflect the AHP logic underlying comparisons between alternatives. In this context the use of an itemised rating scale (see Diamantopoulos and Schlegelmilch, 1997) was not deemed appropriate; the export objectives' *relative* importance in an export performance assessment context could not have been assessed. Although comparative scales such as the one serving this study, require more judgment from respondents, they tend to eliminate any halo effects (i.e. repeat the same judgment when answering different items) often manifested in scaling (Churchill, 1999). In fact, it was felt that the comparative scale employed could *not* have led some respondents to a halo effect situation where all-three export objectives could have been indicated as important. With respect to this particular scale, when the first alternative is ranked as, say, *much more important* in relation to the second alternative, the latter is automatically assumed to be *much less important* (by the reverse amount) in relation to the first alternative. In this respect, the judgements made are reciprocal. In consequence, when dividing the numerical values corresponding to judgements attributed to the any two alternatives compared, the ratio derived will always be equal to (1) (for a more detailed explanation see section 4.2.1). Also remember from section 4.2.1 that the scale's middle value is one (1); this is when two alternatives are judged to be of *equal importance*. Therefore, the nine-point scale used for comparisons can be essentially constructed by two adjoined five-point scales whose extreme points can take the values of (1/9) and (9) respectively, while the middle value is (1). The construction of such scale is based on sound mathematics and the underlying algorithms have been found to reflect accurately respondent views when making relative comparisons (see Saaty, 1980). Indeed, the underlying rationale has been used to build decision-making tools with numerous applications such as the EC 2000 software serving this study. While further explanation of the mathematics behind the AHP method is outside the scope of this study, more information can be found in the works of Saaty, (1980) and Dyer and Forman, (1991).

#### 4.5.4.4 Questionnaire physical characteristics

The final stage of the questionnaire development has to do with its appearance. The questionnaire layout and physical appearance are key aspects (i.e. particularly in self-

administered surveys where no interviewer is present) and these must not be confusing or discouraging for the respondents (Malhotra and Birks, 1999). Therefore, the aim has been to produce a questionnaire that has clarity, it is easy to understand and follow. Also, it has to be pointed out once again (see section 4.5.4) that two versions of the questionnaire have been administered on-line. The first is a web-based version accessible on-line through a live (web-based) link. The second is a word format version of the same instrument (remember both versions are shown in Appendix A). Initially, the latter option was developed for those respondents that explicitly expressed a preference to receive the questionnaire as an e-mail attachment rather than accessing it on-line with the live link provided. However, later, both options (the web-based form and the word format (e-mail) version) have been readily available to the respondents (see different methodologies utilised in sections 4.7.1 and 4.7.2). Although a third option was also offered upon request (i.e. to receive the questionnaire by post, if the exporters wished to), there has been no particular adaptation in the questionnaire design for that purpose. Instead, a print-out of the questionnaire's word format version mentioned above was posted when requested (see response rates for each option in section 4.7.3). Having acknowledged the above, this section focuses on the physical characteristics of the two (on-line) versions of the questionnaire (i.e. web-based form and e-mail attachment). The discussion continues with an introduction to the software facilities used on-line for questionnaire design purposes followed by an account of the questionnaire's physical characteristics.

The web provides sites (e.g. <http://www.websurveyor.com>) that conveniently allow "the researcher to design a survey online without loading design software" (McDaniel and Gates, 2001, p.189). Taking advantage of such facilities, it has been possible to design (and access) the questionnaire on-line. The host has been Surveypro; this is a survey design web site that provided all the facilities and the space needed for the purpose of this study. To be more specific, Surveypro provides software facilities for the development of "instant Internet surveys" as well as the analysis of the data collected; it targets marketing research professionals and can be previewed at <http://www.surveypro.com>. Surveypro has accommodated the needs of this academic survey by granting permission to use their site for four months, free of charge! Within this time period, their facilities allowed the actual

development of the questionnaire (i.e. typing, entering questions, arranging format and final editing), publishing the survey on-line, accessibility through a live link (web address) especially provided for the needs of this particular survey, pre-testing, data collection on-line, automatic data entry in Excel format and even automatic basic statistical data analysis leading to an on-line detailed report with the results of the survey (descriptive statistics and summaries in terms of graphs and pie charts).

Having integrated different software tools, Surveypro has provided an extremely versatile on-line service that simplified the actual conduct of this research. Specifically, the development of the questionnaire was completed within ten days. The on-line measurement instrument's format was decided quickly, as one could easily choose from a number of alternative formats to suit each question. For instance, it has been possible for a multiple choice question to be built either in a format that offers the respondent the opportunity to choose his answer from a drop down menu, or by placing "radio buttons" in front of each alternative (whereby the respondent can click whichever answer(s) he/she feels is (are) correct). Moreover, it has been possible to "force" respondents, to give only one answer -if needed- as the software has allowed the designer/researcher to establish in advance the number of "correct" answers each question can accept. Instant amendments of the relevant questions as well as a chance to see and test the final version of the on-line questionnaire before the respondents actually see have been provided, too.

Practically all aspects of an instrument, such as content, format and length are perceived to influence the response rate (Diamantopoulos and Schlegelmilch, 1996). However, the questionnaire's colour has not been found to affect response rates in mail surveys (Diamantopoulos and Schlegelmilch, 1996; Malhotra and Birks, 1999). While it might be the case that the colour of the questionnaire (and its length) influences the completion rate of an on-line survey (Lajoinie-Bourliataux and Gauzente, 1999), there has been (to the best of the author's knowledge) no empirical evidence to pinpoint a specific colour as more preferable to another. Despite that the web-site providers offered the option of different colours for the questionnaire, such option was not available to this particular survey (such "stylistic choices" were probably not provided free of charge). Therefore,

the web-based version used a neutral combination of dark text against white background (Lajoinie-Bourliataux and Gauzente, 1999), which is the default option provided by the host (Surveypro). Given that there is no evidence to suggest that the choice of a different colour could dramatically increase the on-line survey's response rate, the aforementioned restriction for the default option is not necessarily considered a downside.

Furthermore, there is no empirical evidence to suggest that the colour/length of the word format version of the questionnaire sent as an e-mail attachment is likely to drive respondents to use the respective web-based version (should the latter was of different colour/length). Yet, it has not been an objective of this study to test such hypothesis; thus, the same neutral combination of dark text against white background has also been chosen for the e-mail (word format) version of the instrument. Space has also been used efficiently and the word format version has been kept within seven, single sided A4 pages of well-spaced text, using ten (10) font size (against white background) so as to reduce any colour/length influence between the two versions (in the unlikely event that it exists). In addition, the scales that appear in both versions have not been numbered so as to avoid the cluttering of the questionnaire that could potentially have delayed or even deterred respondents. Moreover, it is important that both versions of the instrument maintained a reasonable length and ensured readability so as not to put off busy professionals from completing the questionnaire (Malhotra and Birks, 1999). Indeed, the printout of the word format version that just exceeds seven (7) pages of A4 paper cannot be considered too long. Also, the instructions (in both on-line versions) have been concise and kept simple, and bold letters have been used to make them stand out. In short, although the general appearance of the word format version slightly differs aesthetically from that accessed in the web (see Appendix A), the design and layout of both versions are essentially the same (also see positive feed-back received in the pre-testing of the instrument in section 4.5.5).

To improve the appearance of the instrument, the web "etiquette" (established for user protection) has also been taken into account; this suggests that non intended or non-requested contacts are generally considered as a violation of the web's rules and of

private life (Lajoinie-Bourliataux and Gauzente, 1999). Bearing this in mind as much as possible information about the survey has been openly given to all exporters targeted. The purpose has been to lend credibility to the study in order to prevent any initial adverse reaction against the actual survey. In fact, such information included the name and address of the researcher presented in the cover page of the instrument and the Loughborough University's logo; that has been technically possible to place in the word format version only. Additional information including the title, name, contact address of the supervisor and the source that provided export company/export managers' e-mail addresses (see sampling frame selection in section 4.6) have also been availed to the respondents when the survey's "cover letter" was e-mailed to them (see more below).

#### **4.5.5 Questionnaire pre-testing and response rate**

With regards to the instrument's structure and layout discussed above, an effort has been made to ensure both ease of completion as well as that the study's specific information requirements are met before the actual questionnaire pre-test begins. This "involves conducting a dry run of the survey on a small, representative set of respondents in order to reveal questionnaire errors before the survey is launched" (Burns and Bush, 1999, p.370). Pre-testing is vital for an empirical study's success; it tests how the questionnaire "performs under actual conditions of data collection" (Churchill, 1999, p. 364).

There is generally an agreement that the pre-test should be conducted on a sample similar to the target population (Diamantopoulos et al, 1994) and also a suggestion that a questionnaire should be pre-tested twice before using it in the actual study. The first pre-test should better be undertaken with the help of respondents similar to those targeted, while the second pre-test should also be carried out with the same administration method decided for the main survey; this is to be able to identify any problems unique to the method employed (Churchill, 1999). Having acknowledged the above, a second pre-test was not considered necessary in the context of this study; it was thought that a single pre-test undertaken on-line could help the researcher (i) obtain adequate (and quick) feedback from exporters about the measurement instrument as well as (ii) assess the suitability of the Internet as an administration method.

To be able to achieve the former objectives (see (i) and (ii) above), the pre-test was based on a random sample of 320 export firms drawn from the same sampling frame called the *British Exporters' Directory* (see section 4.6) utilised for the main survey as suggested by Churchill (1999). Bearing in mind that to the author's best knowledge, this is the first study on export performance to be conducted via an online survey, the aim was to draw an adequately large sample from the former database in order to test the instrument used and also examine the efficacy of the proposed data collection method. Given the currently low response rates of industrial mail surveys, it was thought that the above sample would ensure a broader representation of export firms and also the feedback needed to facilitate the initiation of the main survey on-line.

#### *Improving the response rate*

Different suggestions have been made in the literature about the improvement of survey response rates (e.g. see Jobber and Saunders, 1989; Diamantopoulos and Schlegelmilch, 1996; Churchill, 1999) including assurance of anonymity and confidentiality, personalised cover letter, monetary incentives, telephone pre-notification and follow-ups. Given the fact that the number of contacts made with potential respondents influences expected response rates (Jobber and Saunders, 1989), an effort has been made to maintain a high number of contacts during the pre-test (see method employed below) as well as the main survey (see section 4.7.1). However, the telephone has not been used for prenotification and follow-up contacts because export managers are often out of office due to extensive travelling; this tends to lower the efficacy and increase the cost of using the telephone as a means of contact (e.g. see Cadogan, 1997). Despite that response rates can be improved with some kind of reward such as prepaid monetary incentives or gifts (Yu and Cooper, 1983; Jobber and Saunders, 1989), it was considered to be too expensive to use such rewards in the context of this study. Instead, a form of non-monetary incentive namely, a summary of the study's main findings was offered as an option to the respondents of the main survey (see section 4.7). Anonymity and confidentiality were promised to all respondents so as to encourage answers to the questions asked and prevent erroneous responses from occurring. Personalised messages

were e-mailed to all the managers whose identity was revealed to the researcher (see method employed next) because personalization might have helped response rates (Yu and Cooper, 1983; Diamantopoulos and Schlegelmilch, 1996). An example of such message acting as cover letter can be seen in Appendix B. With respect to the follow-up (see more below), it was not practically possible to use personalised messages (reminders) due to the anonymity the web-based questionnaire offered to the respondents. To stimulate participation from respondents, the (cover letter) message combined emotional, egotistic and social utility appeals. For example, emphasis was placed on how critical one's expertise and participation is for the success of this particular research and the researcher's doctorate. The message's social utility appeal was reflected in the emphasis placed on the academic purpose of the survey and the university as a sponsor of it. In addition to the university sponsorship mentioned, the message also provided more credibility to the survey by including the supervisor's title, name and address as well as the source that facilitated access to the exporters' e-mail addresses.

*Method employed for the pre-test and the actual response rate achieved*

A detailed account of the method employed to carry out the pre-test is offered next. The following table summarises the method of contacting the sample of export firms drawn for the pre-test, the method of administering the questionnaire and the method of returning the questionnaire.

**Table 4.4: Methods used to carry out the pre-test**

Method of contact	<i>E-mail</i>
Method of questionnaire administration	<i>E-mail, Post (optional)</i>
Method of response	<i>Web form, E-mail attachment, Post</i>

Starting with the method of contact, the approach included two stages called, first and second contact (see flowchart in figure 4.5). The first contact stage aimed to inform, elicit participation and screen out the e-mail addresses of potential respondents. This has been attained by (a) emailing the firm using the address listed in the sampling frame and

explaining the purpose of the study and (b) asking for the e-mail address of the relevant respondent (i.e. export manager or director). Assuming that the e-mail address was provided, the second stage was aimed to direct managers to a web page (hosted by the Surveypro system) containing the questionnaire. This stage involved (c) sending a second e-mail asking the identified manager to complete the questionnaire on-line (in the web or as an e-mail attachment) and (d) sending e-mail reminders as a follow-up. As mentioned above examples of the e-mail messages eliciting participation and directing respondents to the web page used for the needs of the pre-test can be found in the Appendix B.

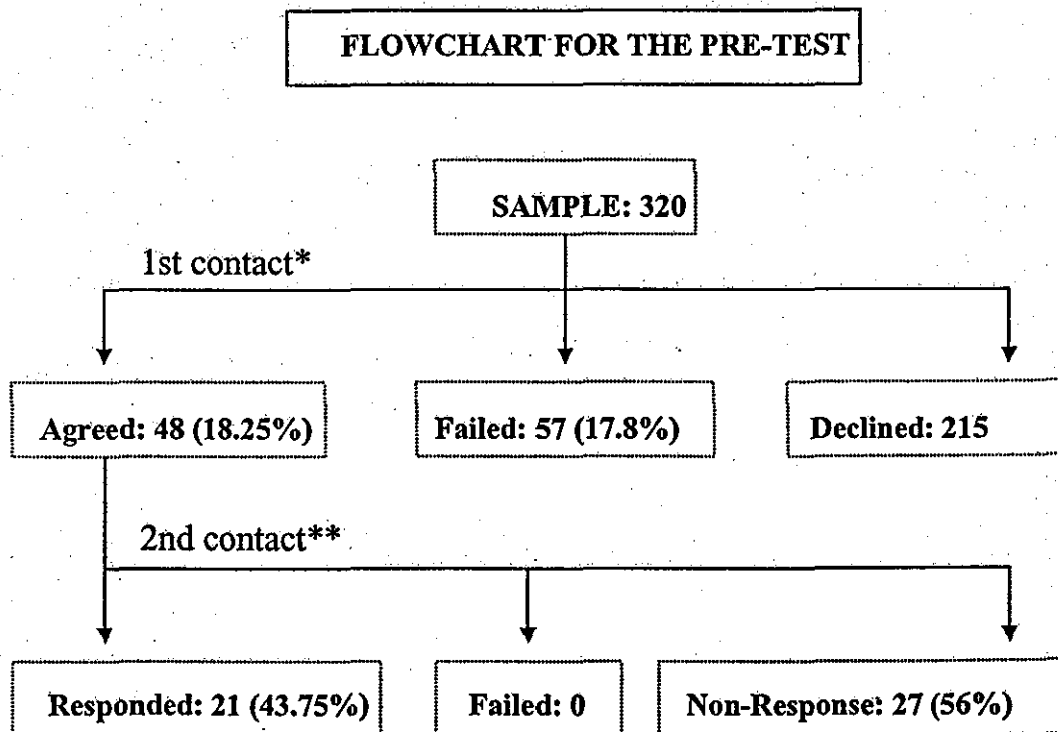
To be specific, a total of 320 firms were contacted using the method described above, out of which, a group of 48 firms provided the researcher with the e-mail details of a relevant respondent, 215 declined to participate and 57 email addresses failed (see more below). The resulting list of 48 export directors' and managers' e-mail addresses represents a co-operation rate of 18.25% (estimated as a percentage of the total number of e-mail messages that reached their destination). This list included 20 e-mail addresses of individuals that expressed in advance, their willingness to help the study while the rest (28 e-mail addresses) belonged to managers that did not show any explicit intention to participate in the survey.

Following the initial contact made, the second contact stage (see figure 4.5) involved e-mailing this group of 48 potential respondents and offering them the option to complete the questionnaire on-line (web form accessed by a live link) or as e-mail attachment; the respondents even had the option to receive the questionnaire by post, if they wished to. The first wave of 48 e-mails generated 18 responses within five days. Subsequently, the second wave of e-mail reminders (follow-up) sent to the same group of exporters generated 3 more responses. The time interval between a wave of e-mails and the follow up was indicated by the incoming responses, the bulk of which was mainly received in the first two or three days and then dropped sharply. Considering that the pre-test took place on-line where e-mail messages are likely to be answered promptly (or deleted), five days time was found to be long enough to wait before starting the follow up.



The resulting 21 completed responses (15 on-line, 4 e-mail attachments and 2 copies received by post) represent an actual response rate of 43.7% (estimated on the basis of the total number of usable responses received at the 2<sup>nd</sup> stage of the pre-test); the response rate of the follow-up was 10% (i.e. 3/(48-18)=3/30). In addition to the generation of quality data, the on-line approach to surveying contributed to a completion rate that was certainly higher than the 19.7% average response rate reported in relevant mail surveys (Harzing, 2000). This could be attributed to the survey's interactive nature in general and the two-contact method in particular that facilitated the collection of decision makers' addresses (and the identification of some that expressed in advance their intention to help the study) as well as the personalised messages e-mailed to each respondent.

**Figure 4.5: Response analysis for the pre-test undertaken**



\* 1<sup>st</sup> contact: The Co-operation Rate is 18.25% and the Failure Rate is 17.8%

\*\* 2<sup>nd</sup> contact: The Response Rate is 43.75% and the Failure Rate is 0.

The novelty associated with this survey (such as filling in a web-based questionnaire) may have attracted respondents that had not experienced a similar survey before. A flowchart for the method employed and the pre-test's response rate is shown in figure 4.5.

An important point that needs to also be mentioned is that although the actual questionnaire pre-test (undertaken after the 1<sup>st</sup> contact stage) lasted 7 days, a lot of preparation was necessary in order to be able to carry out the 1<sup>st</sup> contact stage; this is not least because of the incorrect e-mail addresses included in the sample. In fact, 18% of the e-mail addresses drawn from the sample were incorrect and/or incorrectly typed in the database. The result was that 57 potential respondent firms (see figure 4.5) did not have the chance to access the questionnaire because the respective e-mail messages failed to reach their destination. This problem hindered the collection of exporters' addresses (the 1<sup>st</sup> stage of the survey) and also prevented the more efficient use of the resources available. Despite these problems, the database (the largest and most comprehensive found on-line, see section 4.6) allowed the selection of the sample on-line and also enabled the attainment of the reasonably high response shown above.

#### *Non-response and response difficulty*

With respect to non-respondents, it was argued that when these differ from respondents on the characteristics of interest, then non-response bias occurs (Malhotra and Birks, 1999) and its negative effects are enhanced when the response rate itself is lower (Yu and Cooper, 1983). Although the latter should not be the case here because the response rate achieved is certainly not low (the non-response is limited to 56% only), sampling and questioning non-respondents is important because it allows one to assess whether there is any bias in the sample. This has not been possible to do due to the anonymity the web-based completion of the questionnaire ensured to all respondents (see more in section 4.7.4). By implication, it has not also been possible to assess the percentage of ineligible non-respondents so as to be able to produce an estimate for them when deciding about the main sample size (see section 4.6).

While an effort has been made to restrict non-response in the main survey by placing primary attention to the careful design of the instrument and eliciting respondent participation (Yu and Cooper, 1983), bear in mind that the pre-test's primary purpose was not to focus on the non-respondents but to evaluate whether it was feasible to undertake the main survey on-line and facilitate quality feedback from respondents on the instrument designed for data collection. This is discussed further below.

An important (and also related to non-response) issue addressed in the pre-test, is the relative difficulty required to complete the measurement instrument employed. In this respect, it has been argued that a researcher needs to be "constantly mindful of the amount of effort it might take respondents to provide the information sought. When the effort is excessive, they may have to settle for approximate answers, or they may be better off omitting the issue completely, since these types of questions tend to irritate respondents and damage their co-operation with the rest of the survey" (Churchill, 1999, p.339). Against this background, the respondents were asked to use a three-item, seven-point scale (extending from "very little" to "a lot") to indicate how difficult they thought it was to answer the questions of this survey (see section 4.5.3.6). In general, the respondents' willingness to provide an answer "seems to be a function of the amount of work involved in producing an answer, their ability to articulate an answer and the sensitivity of the issue" (Churchill, 1999, p.339). The relevant frequencies are shown in table 4.5.

**Table 4.5: Difficulty to respond to the questionnaire (Response difficulty)**

	<i>Response difficulty (Effort)</i>	<i>Response difficulty (Time)</i>	<i>Response difficulty (Thought)</i>
Valid	19	19	19
Missing	2	2	2
Mean	2.89	3.15	4.52
Median	3	3	5
Mode	2	3	5
Standard Deviation	1.44	1.46	.96
Variance	2.09	2.14	.92
Minimum	1	1	3
Maximum	6	7	6

In the context of this study, the amount of work involved to produce an answer was assessed in terms of effort and time invested while the ability to provide an answer was measured in terms of the amount of thought needed for the same purpose. The sensitivity of the issues addressed by the survey was not measured directly but there was no indication to suggest that this should be a reason for concern (see relevant comments received below). In terms of cumulative frequencies, more than 68% of the scores corresponding to the effort needed to complete the questionnaire were found to be up to the middle value of 3. The same is the case for more than 73% of the responses relating to the time invested. In contrast, table 4.5 shows that the minimum value for the thought involved is 3 while in cumulative terms, about 50% of the responses exceeded the value of 4 (maximum score is 6).

In light of the evidence collected in the pre-test, it can be suggested that the majority of the respondents found the questionnaire to be of low/average difficulty in terms of the effort and time required to fill it in. With respect to thought, the questionnaire was found to be relatively more demanding. Indeed, the export performance assessment-related questions required some thinking due to the relative comparisons involved. According to the above findings, the relative difficulty to answer the questionnaire does not suggest a valid reason for non-response. This is also in line with general comments expressed by some respondents who referred to the questionnaire as a well thought of instrument that made them think yet, it was not difficult to complete.

#### *Feedback received and questionnaire revision*

With regards to the feedback received, respondents were openly encouraged to comment on any aspect of the questionnaire they felt that needed improvement (e.g. appearance structure, content) as well as specific questions/items they found difficult to understand. This was particularly important due to a number of questions that necessitated thinking in relative terms (see questions 1,2,4,5 in the questionnaire shown in the Appendix). In this respect, there have been comments from some respondents (fortunately the minority) that felt slightly differently than what table 4.5 reflects. To be specific, it was claimed that the four questions mentioned above needed to be expressed more clearly as it was not easy to

understand their purpose. This was particularly the case with one or two of the firms that classified themselves as small and stressed the fact that smaller export firms don't use similar terminology or methods when assessing their performance.

With respect to the objective sales indicator used namely the annual sales turnover (£), not all respondents seemed to be able to accurately quantify their sales performance, particularly when, as it was stated, a firm has "a mixture of overseas operating companies and distributors". To avoid a similar lack of knowledge about aspects relating to export firms' operations, the study tried to identify the most senior decision maker involved in export operations (e.g. export director) and elicit his/her participation in the main survey.

Concern was also expressed as to the fact that this study did not address current export difficulties (e.g. fluctuating exchange rates and the relative strength of the pound (£) against foreign currencies) that seem to play an important role in export firms' performance. It was evident that the firms commenting along these lines, were used to discussing (and/or providing information) about their performance itself and how to improve it rather than how they go about assessing it. Indeed, most of the export related literature emphasises the former (i.e. the determinants of export success) as discussed earlier in chapter 2. While such issues are certainly important and the exporters' concerns valid, their investigation was not consistent with the immediate objectives of this study (see research objectives in section 1.2).

To conclude, the empirical evidence collected from the pre-test confirmed that there was no need for any major amendment or modification of the instrument; none of the questions included was particularly difficult to answer or failed to gather the information sought. Moreover, respondents on average appeared to have no problem in thinking comparatively when asked; there have been no complaints about the length of the questionnaire either. The questionnaire received in general, encouraging feedback that speeded up the initiation of the main survey on-line. To do so, only a slight change was necessary. Specifically, the open-ended question asking pre-testers for additional comments about the instrument was removed. This was easily undertaken on-line with

the help of the software facilities conveniently provided by Surveypro (the website providers) as explained above. This minimal revision allowed the main survey to kick off soon after the end of the pre-test.

Having completed the pre-test, which is the last stage of the nine-step procedure followed to develop the measurement instrument (see figure 4.3 in section 4.5), the next section focuses on the sampling frame utilised to draw the main sample used for data collection.

#### **4.6 The sampling frame and the sampling method.**

Different sources (directories) were considered as candidates for the selection of a sampling frame. Dun and Bradstreet's database had been used in an export context but there has been some concern about the quality of a sample drawn from that source (see Cadogan, 1997). The FAME database (accessed on-line on campus) was considered too. To the best of the author's knowledge, the former has not been used extensively in an export context. It was thought that using FAME could have hampered the selection of a sample because this database is not restricted to exporters only but includes other firms too. While there is a lot of financial information in FAME, such information would not have served the objectives of this study because the exporters' accounting/financial performance is not the study's sole purpose of investigation.

The sampling frame utilized is the *British Exporters' Directory*, which is an on-line database accessible via the *Institute of Export's* homepage (i.e. this directory can be also found on CD-ROM, Source of Supply (UK) Ltd.). This is a comprehensive database that consists exclusively of export firms and claims to provide access to more than 20,000 exporters (from a variety of manufacturing sectors) in the UK. The selection of the above sampling frame was not merely based on the sheer size of it. A key consideration for this selection was the option offered to contact exporters on-line. The database includes a large number of company and/or export managers' e-mail addresses enabling the conduct of the on-line survey. On-line access was offered free of charge to the researcher (i.e. registration and a password were required), provided that any contact made with the

export companies listed in the database, was for reasons other than sending unsolicited promotional messages (spamming). Note that spamming "(in short: spam) can be defined as the mass sending of non-requested commercial offers" (Lajoinie-Bourliataux and Gauzente, 1999, p.6).

With respect to sampling on-line, it has been pointed out that one should be cautious not to exclude those members of the population that are not PC users (Oppermann, 1995). However, the selection of the former sampling frame was not biased against firms with no e-mail address. In fact, the Exporters' Directory included a substantial number of firms that provided only their mail address (and/or web-site) rather than e-mail address. While it is highly unlikely that there is any UK-based export firm that does not have (or afford to have) access to e-mail facilities nowadays, it was evident that the exporters' e-mail addresses were not "divulged" on-line (for everyone to use). This could be either due to genuine company concern for "spamming" and/or because of neglect to up-date the existing lists of companies with all relevant contact details. Nevertheless, the directory was not selective in terms of the type of company contact details offered (i.e. export firms with no e-mail contact address had not been excluded from the list) implying no tendency to be selective in terms of the firms listed. Thus, it was felt that the sample selection from the above source was not introducing any bias in this respect.

The empirical data collection was based on a sample of export managers of UK-based firms (in a variety of manufacturing sectors) that were randomly selected from the foregoing sampling frame. Random sampling is a requirement for any statistical inference in the form of estimation or hypothesis testing (see section 3.5.1) although it does not ensure that the sample drawn would be more representative of the population of interest (Diamantopoulos and Schlegelmilch, 1997). While a representative sample facilitates the generalization of a study's findings to the population of interest (De Vellis, 1991) and is certainly important when developing new multi-item measures as it can influence the reliability and validity of such measures (e.g. Zou et al, 1998; Cadogan et al, 1999), it is not necessarily important in the context of this study whose primary purpose is the empirical testing of the proposed framework. Indeed, this explicit purpose does not

suggest any sort of projection to the population of exporters. The selection of the sample used for the operationalisation of the export performance assessment framework is discussed below.

The on-line searching of the former directory's company lists was only possible through *keywords* describing different product categories or sectors (e.g. carpets, chemicals, plastics). In other words the database did not categorise firms by industry unless one specified a *product sector*. For example, typing a keyword such as chemicals led to the identification of a group of 546 export firms (see below) operating in this specific product sector. The keywords used in the selection of the sample along with the number of firms included in each of the respective manufacturing sectors as appeared in the directory are: Automotive (461 firms), Carpets (86), Chemicals (546), Clothing (281), Education (208), Electronics (563), Equipment (3500), Food (537), Healthcare (82), Household (77), Jewellery (64), Leisure (57), Medical (281), Metal (526), Office (251), Plastics (500), Print (63), Processing (210), Steel (651 firms). The keyword selection intended to maintain a broad representation of sectors and avoid (if possible) leaving any major product sector (i.e. representing a large group of firms) outside the sample.

The selection of the main sample reflected the following considerations: (i) although the group sizes shown above apparently differ, the actual size of each of these groups could not be accurately determined so as to enable some sort of sample stratification in terms of product. This is because the above sectors did not represent mutually exclusive groups of export firms; despite the use of different keywords, multiple (double and even triple) entries of the same firms were found in different product sectors, suggesting involvement with more than one type of product; (ii) the on-line directory did not provide information about specific company profile characteristics (e.g. large, medium, small firms) to aid selection (Churchill, 1999); (iii) while the plan was to undertake the main survey on-line, a large number of exporters (across different sectors) appeared to have provided *no* e-mail address; (iii) yet, it was important to contact export managers with personalised e-mail messages (as in the pre-test) in order to influence the likelihood of response (Diamantopoulos and Schlegelmilch, 1996). Having considered the above, the defining



criterion in the selection of the sample was whether a firm could be contacted by e-mail. Thus, the main sample drawn (at random) from the directory was composed of UK-based exporters (from various manufacturing sectors) whose e-mail address appeared on-line.

Although it was possible to have only a rough estimate about the main sample size needed for the survey (see estimate below), that size could not be accurately determined in advance. This is due to the fact that: (i) the database included an unknown number of double entries (i.e. firms listed twice or more under different sectors) as well as (ii) firms with incorrect e-mail addresses thereby leading to e-mail message failures (see figure 4.5) and last, (iii) the web-based completion of the questionnaire did not allow the researcher to estimate the (%) of eligibility among non-respondents during the pre-test (i.e. those non-respondents that were able to respond to the survey) so as to take it into account when determining the sample size. In this context, "rather than drawing a fixed sample (i.e. determining sample size prior to data collection)...a sequential sample is preferred (Diamantopoulos and Schlegelmilch, 1997, p.18). Under the latter approach more population elements are added to the main sample until the additional responses collected are thought to be sufficient to furnish results. To be more specific, remember that the framework includes a total of 19 variables (hypothesised antecedents) requiring multi-variate analysis (see chapters 7 and 8) to establish their (individual and collective) impact on the assessment of export success. The sample size-to-parameter ratio should be higher than five to one (Skarmas et al, 2002) and the target set was to obtain between 6 to 10 responses per independent variable. Hence, the survey was intended to generate between 160 and 190 usable responses. During the pre-test, it was only 18.2% of e-mail contacts (see co-operation rate in figure 4.5) that managed to furnish e-mail addresses of potential respondents; about 17.8% of e-mails failed to reach their destination and 64% was the non-response. In light of the above, a rough estimate of the main sample size (x) was made. All else being equal with the pre-test, then: main sample size (x) = exporters that cooperated + failed email addresses + non-respondents =  $.182x + .178x + .64x$ .

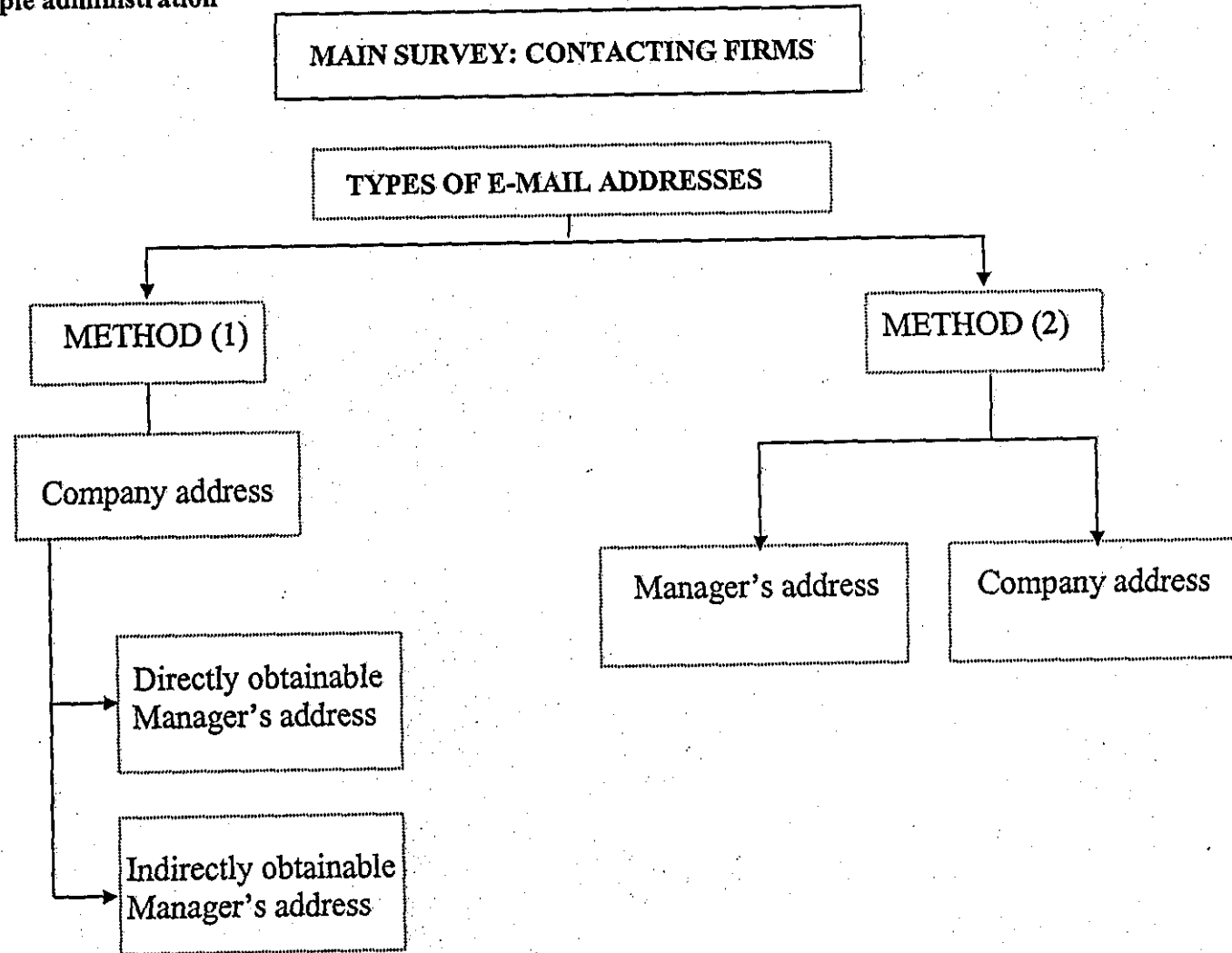
If  $.182x = y$  and y generates 160 responses, then  $160 = 43.75\%$  of y (or  $160 = 0.437y$ ) then  $y=366$  and  $x=2011$ ; if y generates 190 responses, then  $x=2390$ . This means that the main sample size should include between 2011 and 2390 firms to be able to achieve

between 160 and 190 responses respectively. It was decided to initiate the main survey with a (start-up) sample of, about 1000 export firms then assess the survey's response and progress and subsequently add more firms to the sample. Also, note that the sheer size of this particular on-line directory seemed to allow the utilisation of an even larger sample than that suggested above. In fact, one could exploit further the directory (free of charge) by using additional keywords such as packaging, paper, electrical, textiles, giftware or furniture. However, a significant increase in the main sample would have compromised the timely completion of the on-line survey for only a marginal benefit (see more about the first method used for data collection in the following section). In view of the above trade-off, it was decided to maintain the sample size as large as necessary to yield the number of responses required.

#### **4.7 Main sample administration and data collection**

As this was the first study on export performance to be conducted via an online survey, two methods were followed; Method (1) and Method (2). An overview of both methods is offered in figure 4.6 below. The next section focuses on method (1) while method (2) is discussed in section 4.7.2.

Figure 4.6: Main sample administration



#### **4.7.1 Initiation of the main survey: Method (1)**

Following the successful completion of the pre-test, the main survey was carried out along the same lines as the pilot study. The method employed is called method (1) and (as in the pre-test) involved two contact stages. This method focused on high response rates through employing two e-mail contacts, the first of which aimed to either elicit the co-operation of export directors/managers directly, or collecting their e-mail addresses from their colleagues (secretaries) so as to be able to contact them personally. Identifying the person responsible for exports in each and every firm, explaining the purpose of and extracting his consent for participation in the survey before receiving the questionnaire, was thought to be crucial for the survey's success (the method proved to be successful in the pre-testing of the questionnaire). After all, an e-mail that explains the purpose of the study and asks for help would be less likely to be considered as "spamming" and deleted. However method (1) proved to be relatively time consuming due to the considerable preparation required for the collection of exporters' e-mail addresses as explained below.

To be more specific method (1) involved: (a) emailing export firms (on a one by one basis) using the e-mail address listed in the sampling frame and explaining the study's purpose, (b) asking for the e-mail address of the relevant respondent (export manager or director), (c) assuming that an address was provided, sending a second email (second stage) to elicit participation from the identified manager, ask him/her to complete the questionnaire on-line and direct him/her to the web page containing the instrument; finally, (d) sending email reminders as a follow-up.

Using the e-mail address found in the on-line directory, the initial (1<sup>st</sup> contact) message e-mailed to a company was asking essentially for the e-mail address of the specific person involved in exports so as to elicit his/her participation in the study. To reduce any apprehension towards the source and nature of the e-mail message as well as improve the credibility of the study, the content of this (first) e-mail message, clearly highlighted that (i) export firms' email addresses had been selected from the exporters' directory accessed

via the Institute of Export's homepage and (ii) the information provided by the respondent would only serve the purpose of an academic study; also (iii) the researcher's name and contact details as well as those of the on-line survey's supervisor (i.e. Professor A. Diamantopoulos) were provided for any questions that might arise. A total of 990 firms were contacted by this approach (see 1<sup>st</sup> contact in figure 4.7), out of which 163 provided the email details of a relevant respondent, 657 declined to participate and 170 e-mails failed (i.e. due to wrong addresses). These figures represent an initial cooperation rate of 19.87% computed as follows: Co-operation rate = (number of firms agreed, 163) / [(number of firms contacted, 990) – (number of addresses failed, 170)] = 19.87.

Following the completion of the 1<sup>st</sup> contact, a list of 163 managers' e-mail addresses was compiled to enable the implementation of the 2<sup>nd</sup> contact stage. In this context note that the diagram shown above in figure 4.6 distinguishes between directly and indirectly obtained e-mail addresses; the former term refers to addresses already shown on-line (i.e. yet, the researcher had to be sure that belong to persons responsible for export operations and willing to respond to the survey) while the latter term refers to those export managers' addresses obtained from a secretary working in the export organization contacted. Aside from this distinction, all 163 potential respondents were contacted individually (as in the pre-test) and subsequently directed to the web page containing the instrument. Such personalization aimed to improve response. For this purpose, two almost similar types of e-mail messages (acting as cover letter) were prepared for the 2<sup>nd</sup> contact stage. The first type was sent to export managers that identified themselves (during the 1<sup>st</sup> contact) as the proper person to receive the questionnaire; the second type of message was e-mailed to export managers who did not actually know about the study but whose e-mail address was provided by a secretary (during the 1<sup>st</sup> contact made). The content of both types of e-mail messages employed in the 2<sup>nd</sup> contact stage is similar to the message used in the initial (1<sup>st</sup> contact) and resembles to that used successfully in the pre-test (see Appendix B).

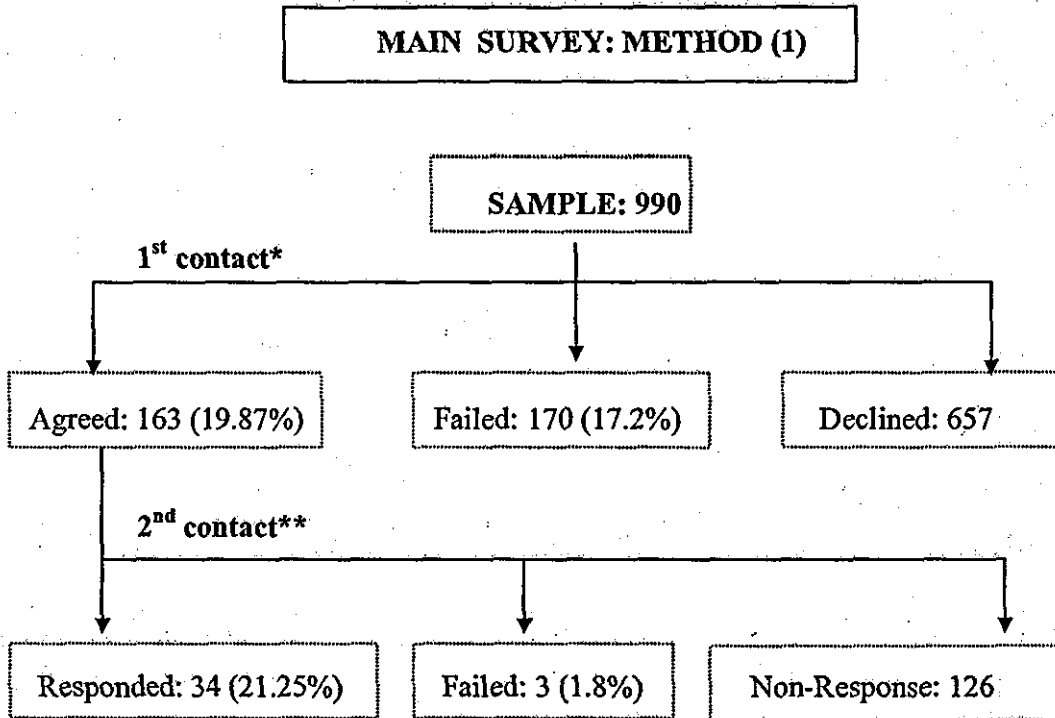
Specifically, potential respondents were offered the option to complete the questionnaire (i) on-line (accessed by a live link) or (ii) as e-mail attachment and (iii) even had the

choice to receive it by post, if they wished to (in this case, a stamped, self-addressed envelope was provided too). To facilitate response the survey promised anonymity and confidentiality; a form of a non-monetary incentive namely, a summary of the study's main findings was offered as an option too. Each e-mail message used in the 2<sup>nd</sup> contact stage of the main survey had a personalised greeting and accommodated for differences among respondents' professional titles such as export manager, international marketing director, etc. Furthermore, the message acknowledged the recipient's expertise (i.e. "I was informed that you are the proper person to contact for export related issues") and also included an emotional appeal to him/her to help stimulate response (e.g. "I am well aware that this represents a demand on your busy schedule, but your participation could really make the difference between success and failure of the study (and my PhD as well!)" or "To help me with my study, I would be most grateful if you could kindly provide me with..." and "Your assistance in this matter is much appreciated").

The 2<sup>nd</sup> contact stage was completed with a follow-up of e-mail reminders sent to all respondents. Out of 163 export decision makers contacted during the 2<sup>nd</sup> contact stage, 34 completed the questionnaire, 126 did not respond and 3 email addresses failed. These figures represent a 21.25% actual response rate. In contrast to the high failure rate of the 1<sup>st</sup> contact stage (17.2%), only 3 e-mail messages (1.8%) failed to reach their destination in the 2<sup>nd</sup> contact stage. Apparently, the e-mail addresses provided by the firms' employees were much more accurate in comparison to those found in the on-line directory. This supports the choice of the two-contact approach employed.

Although it would have been quicker to compress the aforementioned list of export managers and subsequently address a single e-mail message (acting as the so-called cover letter used in mail surveys) to all of them, the personalization employed facilitated response; indeed, the reasonably good response achieved (21.25%) supports the view that respondents favor personally signed cover letters (Diamantopoulos and Schlegelmilch, 1996).

Figure 4.7: Data collection with method (1)



\* The Co-operation Rate (i.e. agreed) is 19.87% and the Failure Rate is 17.2%

\*\* The Response Rate is 21.25% and the Failure Rate is 1.8%.

However, the time and effort invested in order to gather and contact all those managers' e-mail addresses were considerable (i.e. preparation and execution took about 5 weeks in total, while the 2<sup>nd</sup> stage lasted about 2 weeks). Moreover, the overall return-on-effort (i.e. the total number of firms contacted to obtain a single completed questionnaire, see section 4.7.3) was very low ( $34/990 = 3.43\%$ ). The process was not only time-consuming but also seemed to be inefficient to the extent that it could seriously compromise the progress and timely completion of the survey (and ultimately the study). The fact that 63% of the recipients during the 1<sup>st</sup> contact declined to respond (see figure 4.7) indicated that the two-contact approach wasted valuable resources. It was also clear that a sample size larger than that estimated in section 4.6 was necessary because method (1) could not

furnish the number of responses required. As it appeared that the problem lied in a reluctance to disclose the e-mail address of the export manager, a second approach was followed.

#### **4.7.2 Continuation of the main survey: Method (2)**

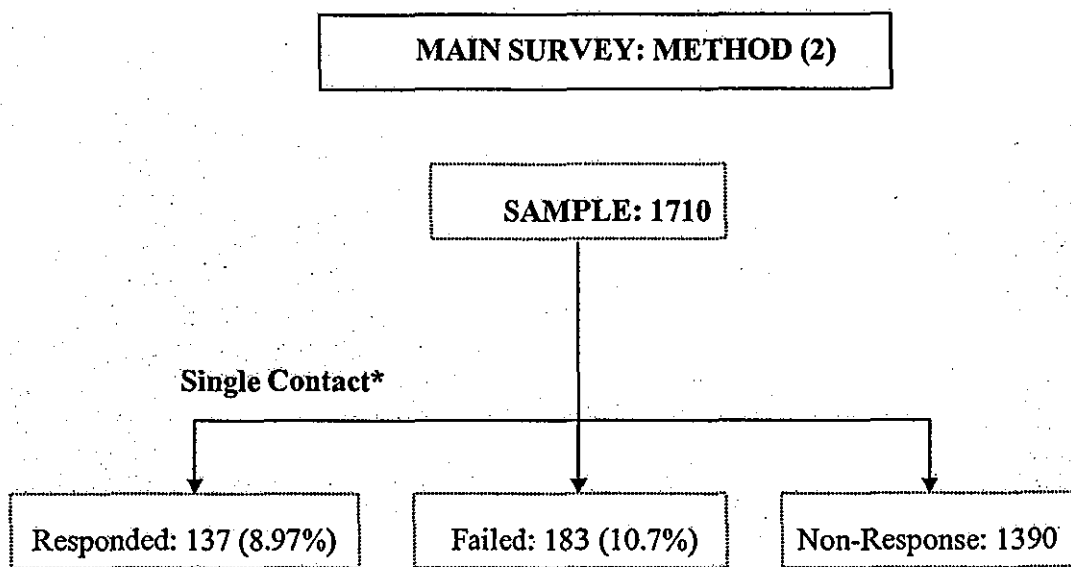
To overcome method (1)'s downside (i.e. low return on effort) a direct (single contact) approach called method (2) was adopted. Under method (2), cooperation (and inclusion of the web link to the questionnaire) was elicited at the first contact made with a firm. Specifically, a single message was e-mailed to either the address of a manager involved in export operations or a company's (general) e-mail address with the request that the email be forwarded to the manager most suitable to answer the questionnaire (without, however, requesting that his/her email details were divulged to the researchers). This method aimed to speed up the survey by targeting a greater number of firms. In addition, the method aimed to exploit better the sampling frame by bypassing the reluctance that some recipients may have had about disclosing someone else's e-mail address on-line.

Given that method (2) did not ask for the respondents' "consent" prior to allowing them access the questionnaire on-line and as the recipient of the single e-mail (acting as the equivalent of a cover letter in mail surveys) could be someone whose immediate work domain did not involve exporting (e.g. a secretary from a different department), it was considered important to get the e-mail's message clearly across so as to stimulate cooperation (and avoid the e-mail being deleted as "spam mail" before actually reaching the proper export decision-maker). The message was generally similar to that used in method (1) emphasising the academic (non-commercial) purpose of the study and the source of the e-mail address (the on-line directory linked to the Institute of Export's homepage) offering the option to complete the questionnaire on-line or receive it by post and promising anonymity and confidentiality to the respondents (see Appendix B). There were two different types of e-mail addresses in the on-line sampling frame (see figure 4.6) and the messages had to be addressed accordingly that is, in a slightly differentiated manner. Specifically (i) some firms provided a manager's name and e-mail address.



Then, the message was either e-mailed directly to the person involved with exports or requested from the recipient to forward the e-mail message to the export manager (i.e. when it was uncertain whether the recipient was the person responsible for export operations). Also (ii) some firms provided only a general e-mail address; then the recipient was asked to forward the e-mail message to the appropriate decision maker (e.g. export manager or director).

Figure 4.8 Data collection with method (2)



\* The Response Rate is 8.97% and the Failure Rate is 10.7%

A total of 1710 firms were contacted with this approach, out of which 137 responded to the questionnaire, 1390 did not respond, and 183 email addresses failed (see figure 4.8). The actual number of completed questionnaires (137) compensates for a lower response rate (8.97%) than that achieved with the two-contact approach (21.25%). Yet, method (2) has been more efficient in comparison (see more in section 4.7.3); specifically, the return-on-effort ( $1710/137 = 13$ ) has been much higher (in fact, under method (1), 29 firms had to be contacted for each completed questionnaire as compared with 13 firms under method 2). This was achieved by simply increasing the number of firms contacted (i.e. without prior notification) within 5 weeks (including the follow-up) and at no further

cost, as the survey took place largely on-line (a notable exception is those few firms that responded by post as reported below).

#### 4.7.3 Main survey: rate, mode and quality of response.

Figure 4.9 provides an overview of the on-line survey in terms of the sample sizes utilized for each method employed.

Figure 4.9: An overview of the on-line survey

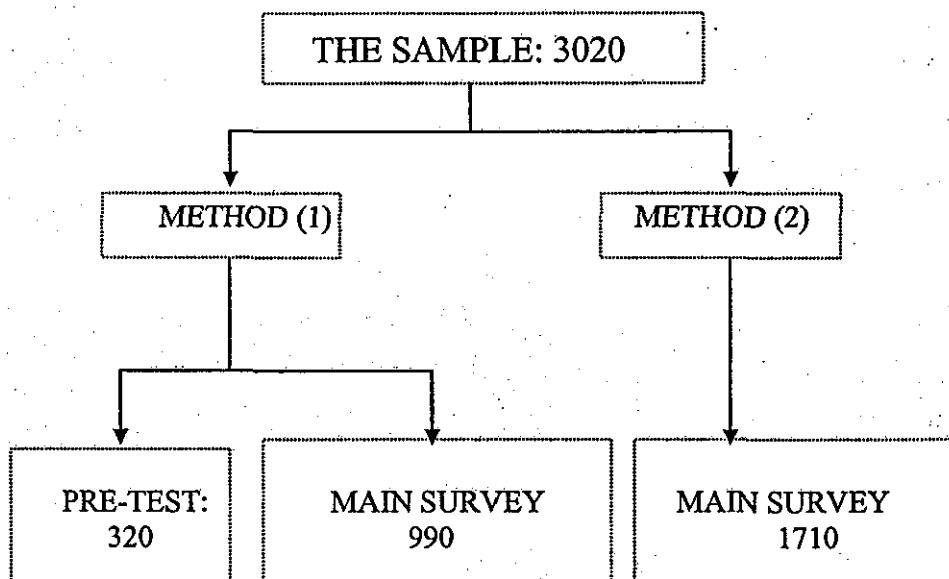
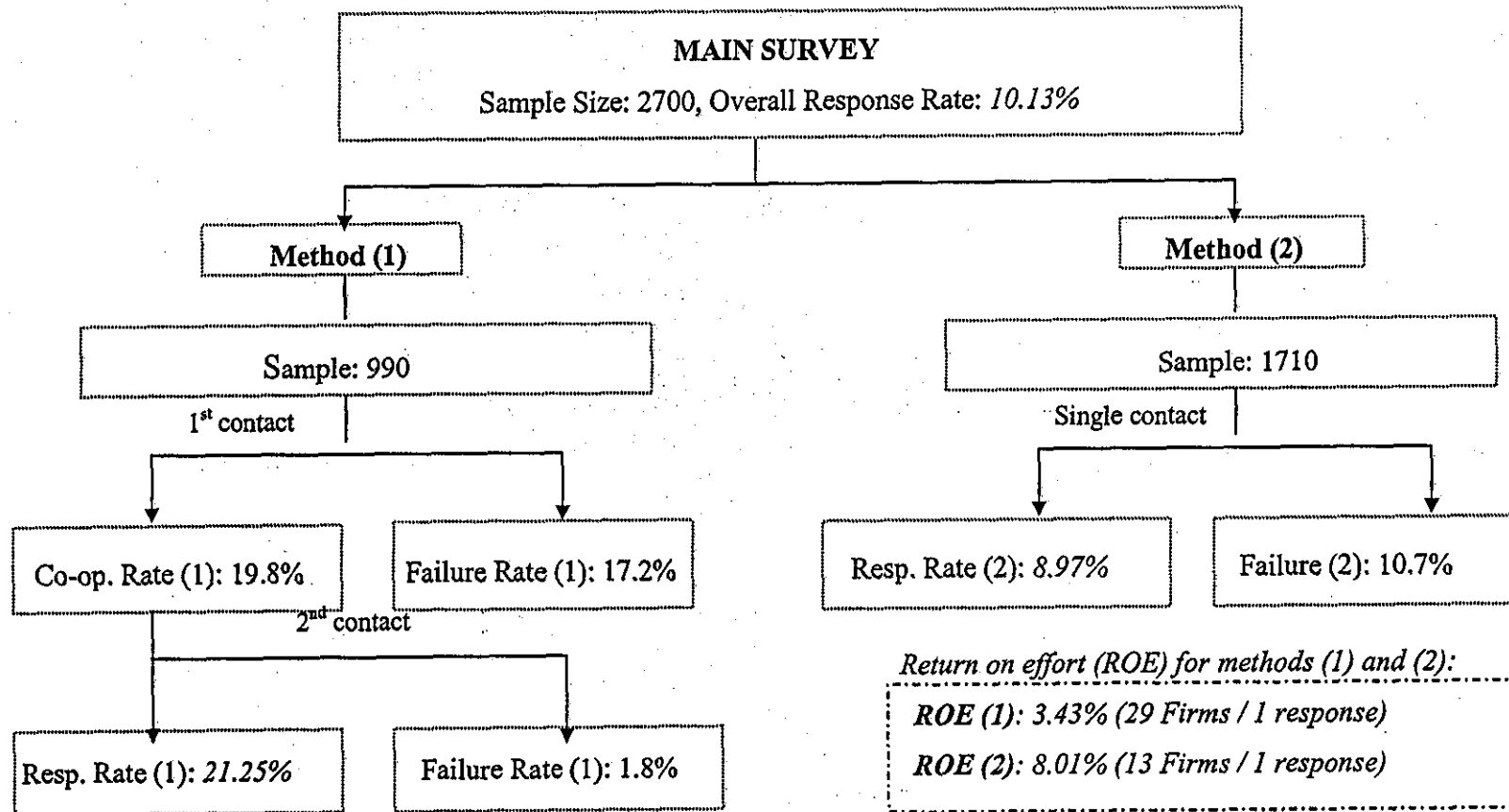


Figure 4.10 summarises the response rates attained in the *main* survey. Out of 2700 firms, which is the *main* sample used for data collection (i.e. 990+1710), the total number of responses (under both methods) came to 34 + 137 = 171; this is the sample size used in the subsequent analysis (see a profile of the sample in section 5.9) and represents a *10.13% response rate* computed as follows: (Total number of responses achieved in the main survey) / (Actual number of firms contacted with the questionnaire) = 171/1687.

[Note that: (Actual) No of firms contacted with the questionnaire, 1687) = (Firms contacted with method (1), 163) - (Failed addresses with method (1), 3) + (Firms contacted with method (2), 1710) - (Failed addresses with method (2), 183)].

Figure 4.10: The main survey's response rate



The problem of low response rates industrial surveys currently face is evident in this study (Diamantopoulos and Schlegelmilch, 1996; Harzing, 2000). To put this survey's response rate in context, examples of response rate figures reported in recent UK-based postal surveys in exporting are presented in table 4.6.

**Table 4.6: UK-based response rates of recent mail surveys in exporting\***

<i>Studies</i>	<i>Response rate</i>
Hart and Tzokas, (1999) (UK, Sample: 50, Unit: firm)	30%
Stewart and McAuley (2000) (Canada/UK, Sample: 207/160, Unit: export venture)	40% & 26.6%
Styles and Ambler, (2000) (Australia/UK, Sample: 232/202, Unit: export venture)	37% & 35%
Balabanis and Katsikea, (2003) (UK, Sample: 82, Unit: firm)	18.5%
Lages and Lages, (2004) (Portugal/UK, Sample: 519/511, Unit: export venture)	22.1% & 32%

\*Involve multiple industries

The response rate attained is by no means high when compared to those reported in the postal surveys mentioned above. Yet, this survey's response rate is higher in comparison to e-mail surveys undertaken by Tse et al, (1995) and Tse, (1998) reporting rates of 6% and 7% respectively (in a context other than exporting). While it has been easier (in comparison to a mail survey) to increase the sample size on-line so as to obtain a higher number of responses, note that the response rate attained with the (two-contact) method (1) in particular is considerably higher (see figure 4.7). This was achieved during the first 35 days of the main survey that lasted 75 days in total. The higher response rate (21.25%) achieved with method (1) certainly reflects the emphasis on identifying and eliciting participation from appropriate decision makers as opposed to e-mailing exporters rather speculatively (i.e. as in the single-contact method (2) implemented). In fact, method (1)'s response rate is close to that reported by Stewart and McAuley (2000) and slightly exceeds the rate reported by Balabanis and Katsikea, (2003). In contrast, the single-contact approach (which was also implemented for 35 days) resulted in a lower response rate (8.97%). Nevertheless, method (2) generated 137 responses (as opposed to method (1)'s 34 responses). The

return-on-effort (see ROE in figure 4.10) captures the relative efficiency of both methods. ROE is essentially an efficiency indicator measuring the number of e-mails sent-off to get a single response. It has been computed for both methods (1) and (2):

$$\text{ROE (1)} = (\text{No of firms contacted, 990}) / (\text{No of completed questionnaires, 34}) = 29$$

$$\text{ROE (2)} = (\text{No of firms contacted, 1710}) / (\text{No of completed questionnaires, 137}) \cong 13$$

ROE (1) suggests that the two-contact method (1) managed to generate one completed response for every 29 messages e-mailed successfully (i.e. recall that the problem lied in that many firms were unwilling to disclose their export managers' e-mail details when initially contacted). This "gate keeper obstacle" was overcome with the single-contact method (2) under which it has been possible to generate one response for every 13 messages e-mailed (see ROE 2). Although this single-contact method (2) allowed less control over the informants' identity, it has been a considerably more efficient approach to data collection. In fact, it seems to be more appropriate for larger samples to help compensate for the high non-response that may occur. The less efficient (slower) method (1) led to a better response rate; the higher number of contacts and personalization this method involves could be employed to exploit thoroughly smaller samples provided that the "gate keeper obstacle" mentioned above is overcome (perhaps with a mixed-mode strategy, see section 4.7.5).

#### *Mode and quality of response*

Recall that both a *web-based* version and a (7-page) *word format* version of the instrument were developed for this survey. The latter combined the e-mail's ability to use personalised messages to reach instantly widespread populations (at no cost) along with the convenience of the on-line questionnaire completion and the advantage of anonymity offered in the web. To stimulate greater response, three options were offered to the respondents: to (i) complete the web-based version (accessed through a live link), (ii) fill in the word format version received as an e-mail attachment or (iii) request the questionnaire (i.e. the word format version) by post. The e-mail attachment could serve those that would have been unable to access the web-based form due to technical reasons (e.g. incompatible software or a lack of internet access). The respondents' preference for each of the two on-line versions of the questionnaire used, the modes of response and the respective pattern of responses are shown below.

**Table 4.7: Response pattern for the main survey\*.**

Responses	<i>Web-based version</i>	<i>Word format version</i>		<i>Total</i>
	Responded via the Web form	Responded by e-mail attachment	Responded by mail	
Overall	104	38	37	179
Usable (%)	100 (58.47%)	36 (21.05%)	35 (20.46%)	171
Blank or largely incomplete	4	2	2	8
Refusals				27

\* The actual number of exporters contacted with the questionnaire is 1687

According to the results shown in table 4.7 the main survey generated 79.4% of responses on-line while 20.46% responded by post. Most of the latter preferred to receive the questionnaire as an e-mail attachment and print it out (as opposed to requesting a mail delivery of a hard copy in the first place). This finding supports views favouring a combination of e-mail with mail in cross-sectional surveys (Schaefer and Dillman, 1998). More importantly, the web-based version of the instrument attracted higher preference (58.47%) than the word format (e-mail attachment) version (41.51%). This is likely to reflect the fact that the web-based form was *easier* to fill in (i.e. completion and on-line submission involved the simple use of the mouse) relative to the more "complicated" word format version. The latter involved (a) either the use of the mouse (or cursor) and a key as well as saving the file (in case the preferred mode of response was electronic mail) or (b) printing out, handling and mailing a hard copy (in case the preferred mode of response was simple mail). In addition to the greater number of response steps involved, the lower preference for the e-mail attachment may also reflect a fear from contracting computer viruses and also a lack of anonymity (Dommeyer and Moriarty, 2000).

The t-test (independent samples) was used to determine whether there is any significant mean difference between the group of exporters that preferred to access and complete the web-based form and those that preferred the e-mail attachment. A comparison was undertaken between the two groups (consisting of 100 and 71

responses respectively) in terms of five characteristics (see below). The results are shown in table 4.8.

**Table 4.8: T-test results for group mean differences between respondents showing preference for the Web-based vs. E-mail attachment mode.**

<i>Variables</i>	<i>Independent samples t-test statistics (2-tailed)</i>
Years of export experience	.992, <i>p</i> =.323
Number of countries exported to	-.709, <i>p</i> =.480
(%) Total sales derived from exporting	-.053, <i>p</i> =.958
Annual sales turnover (£ million)	1.12, <i>p</i> =.261
Innovativeness	-.854, <i>p</i> =.394

With regards to each of the above variables, no significant difference is observed between the respective group means (see relevant statistical output in Appendix C). These results suggest the introduction of *no* bias to the two on-line modes utilised.

Although it seems that one in five respondents still favour the conventional means of communication (i.e. mail), this is likely to be due to a greater familiarity with postal surveys. Yet, the fact that 79.4% of the usable responses were generated on-line (as opposed to 20.46% responses by mail) is indicative of the influence such communication media could have in large-scale cross-sectional surveys particularly when managers will feel even more comfortable with the use of this pervasive technology.

Moreover, the on-line survey yielded quality responses. The number of (non-usable) questionnaires discarded was small (see table 4.7). Given the fact that the questionnaire included 100 items, the missing values across 171 usable questionnaires represent only 0.71% (overall item non-response for the main survey). This means 99.29% item completion across 171 questionnaires. The quality of responses each of the two versions (web-based and word format) generated is also equally high. To be more specific, the item non-response is only 0.6% for the web-based version (i.e.

99.4% item completion across 100 questionnaires); similarly, the word format version's item non-response is only 1% (suggesting a 99% item completion across 71 questionnaires). These results suggest that the personalisation employed on-line (at least for a large part of the main survey) has been successful in terms of facilitating the identification of key informants (senior decision makers) that allowed the generation of quality responses. This is also reflected in the respondents' views regarding the relative difficulty encountered when completing the questionnaire (see section 5.6.2). These findings are consistent with the views that on-line surveys could be relied upon to furnish quality information (Mehta and Sivadas, 1995; Bachman et al, 1996; Schaefer and Dillman, 1998).

#### **4.7.4 Main survey: follow up and assessment of non-response**

The study aimed to improve the response rate by sending-off e-mail reminders (as a follow-up) to all exporters contacted during the main survey (excluding those firms that declined participation and those whose e-mail addresses failed). In this on-line survey, the majority of exporters responded within 2-3 days from the initial e-mail contact made and reminders were e-mailed within 6-7 days from the initial contact made. In theory, one could estimate the response generated with the follow up, provided that the whole main sample of firms was contacted simultaneously (at the same time) and an adequate time interval (see above) preceded the e-mail reminders sent-off (all at the same time) to the managers concerned. Yet, in practice, an accurate estimate of the responses generated by the follow-ups (realised under methods 1 and 2) was difficult to make. Under the circumstances (and in the interests of the timely completion of the survey), the sheer number of messages e-mailed under both methods (see the sample sizes in figure 4.9), required from the researcher to do so in waves (in different days/weeks). Thus, a group of managers was receiving e-mail reminders (follow-up stage) almost concurrently with a different group contacted for the first time. In light of the fact that the web-based completion of the questionnaire ensured *anonymity* to all respondents, it could not be dismissed as unlikely the fact that managers from different groups (and therefore, contact stages) were accessing the web page at the same time to fill-in the questionnaire. For the same reason (i.e. anonymity on-line), the assessment of non-response bias was also problematic (see more below).



In addition to the follow up mentioned above, this study tried to restrict non-response by placing emphasis on (i) the careful design of the instrument, (ii) the response options offered, (iii) the use of personalised (where possible) e-mail messages to elicit respondent participation, (iv) the survey's university sponsorship, (v) the optional (non-monetary) incentive to receive a summary of the findings, (vi) confidentiality and anonymity. The fact that the web-site providers hosting the survey ensured anonymous participation for all respondents may have facilitated response but made it difficult to accurately trace responses and thus, distinguish non-respondents.

With respect to method (1) the non-response (at the 2<sup>nd</sup> contact) was lower (78.7%) than that achieved under method (2) where 91% of the firms did not respond. In light of the non-response encountered, it is stressed that the non-conventional nature of the survey itself could not possibly suggest a reason for non-response because all potential respondents had the option to contribute to the study by mail (in this case, a stamped self-addressed envelopes was also provided). In fact, the reasons stated by those that responded but refused to participate in the survey (see refusals in table 4.7) did not include any concern about the fact that the survey was not conventional. Specifically, the main reasons were: (i) the company was understaffed (staff shortages due to summer vacations), (ii) the manager was away for business purposes (ii) it was not in the firm's commercial interests to answer the questionnaire, (iii) company policy did not allow participation in surveys, (iv) various government-related (and other) surveys required company time that could not be spared (i.e. implying survey fatigue), (v) the company did not export, (vi) the mode of the firm's operations was not reflected in the questions asked (e.g. small sole traders or global firms for which exporting was only a part of a global strategy); (vii) the marketing discipline serves mainly large (multinational) firms as opposed to the real world of small exporters and their problems in exporting. In this context, the response difficulty encountered in this survey could not possibly constitute a reason for non-response (see section 5.6.2).

It has been common in conventional surveys to focus on non-respondents in order to enable assessment of non-response bias; this results from differences between non-respondents and respondents on the characteristics of interest (Malhotra and Birks, 1999). To test for non-response bias, it is common practice to assume that late

respondents behave as non-respondents (Armstrong and Overton, 1977). From a theoretical point of view however, this did not seem to be a reliable procedure to follow when early respondents replied within two or three days and late respondents after say, five or six. In fact, it would seem more reasonable to assume that non-respondents were similar to those Internet users that reject any uninvited, unsolicited mail (Lajoinie-Bourliataux and Gauzente, 1999).

A different procedure to follow so as to be able to assess non-response bias would have been to sample non-respondents and find out their reasoning. From a practical point of view, the latter was not easy either. This is because the web-based completion of the instrument offered anonymity to all respondents thereby hindering the identification of non-respondents. In addition to the fact that the assessment of non-response bias was not facilitated by the nature of this (on-line) survey, it has to also be acknowledged that assessing bias for attitudinal data is difficult as no factual information exists to which the data could be compared (Mathews and Diamantopoulos, 1995). Nevertheless, note that the former limitation should be relatively less of an issue in the context of this study whose main aim is to test the proposed performance framework in practice, an aim that does not necessarily involve any generalisation to the population of exporters.

#### **4.7.5 Summary and final comments on the main survey.**

Based on a sample of 2700 export firms, the on-line data collection yielded a total of 171 responses, which is the sample size used in the ensuing analysis. The survey lasted 70 days (methods (1) and (2) included) and reached an overall response rate of 10.13%. In addition to the currently low response rates encountered in industrial surveys, a possible reason for the lower response of this survey could be its timing; the survey was conducted during the summer and firms claimed to be understaffed. Bear also in mind that although the actual collection of the data can be particularly quick (i.e. it was not uncommon for respondents to reply within an hour after receiving the questionnaire), the on-line survey itself can be time consuming in terms of the preparation and management needed. E-mail messages could not be sent-off all at the same day but in different days/weeks and a large number of messages (both sent and received) had to be sorted out electronically. The high proportion of e-mail

messages (13.2%) failing to reach their target has not helped the survey's speed either. Despite that the particular sampling frame (accessed via the Institute of Export's homepage) was the largest found on-line and facilitated the on-line selection of the sample (free of charge), it was evident that the former was neither updated nor particularly aimed for academic surveys. In addition to the incorrect e-mail addresses found, there have been double entries (i.e. firms included more than once) and the researcher had to be careful to avoid contacting the same exporters twice.

A disadvantage of an on-line survey (relative to a postal one) is the fact that although all respondents have stable physical addresses, electronic addresses tend to be easier to change. A sampling frame updated with senior managers' names and e-mail addresses could have speeded up the survey. An updated directory would also have increased the response rate of the two-contact method (1) by facilitating the identification of key informant(s) and allowing the researcher to bypass a problem that caused significant lack of co-operation namely, the export firms' reluctance to disclose their managers' email details online (see section 4.7.1). Such sampling frame would also have enabled greater control over the selection of the informants contacted under the single contact method (2) thereby allowing the broader use of personalized e-mail messages to boost the response rate attained with method (2). In this context note that even if some managers' e-mail contact details are missing from such sampling frame, it should be possible to utilize a mixed-mode strategy so as to approach the appropriate informants by post (e.g. Schaefer and Dillman, 1998).

Under the circumstances, the on-line survey's response rate and duration do not seem any better than what could be possible to attain with a mail survey. However, the general feedback received from respondents is encouraging (see response difficulty in section 5.6.2). Moreover, (i) it proved easy to increase the sample size on-line so as to be able to raise the number of responses, (ii) the responses were obtained free of charge (no printing and postage costs were involved), (iii) an overwhelming 80% of the respondents preferred to respond on-line (as opposed to using mail) and (iv) the web-based completion (which also ensured anonymity) was found to be the most attractive option (58.5 %) in comparison. This on-line survey was found to be an inexpensive means to generate quality responses (Weible and Wallace, 1998), which coupled with the convenience associated with the questionnaire's on-line design,

instant administration, on-line completion, submission and automatic data entry into a spreadsheet (EXCEL, SPSS), makes this type of data collection particularly appealing for cross-sectional research in exporting.

Having completed the research methodology, the next chapter focuses on the descriptive analysis of the data collected.

## **CHAPTER 5**

### **DESCRIPTIVE ANALYSIS**

## 5 DESCRIPTIVE ANALYSIS OF FINDINGS

Following the presentation of this study's methodology, this chapter focuses on the descriptive analysis of the variables measured. This type of analysis is particularly concerned with presenting and interpreting identified patterns in the data, with the help of dispersion and central tendency measures (i.e. mean values, medians, standard deviations etc), as well as test for the assumption of normality needed for additional multivariate statistical analysis. With regards to the multi-item measures employed, the descriptive analysis constitutes an important part of the statistical analysis because it allows one to identify items that may need to be eliminated in order to improve the measurement of specific constructs (see more below).

The descriptive component of the analysis begins with the presentation of the various antecedent and demographic characteristics. Following this, the export performance assessment-related findings are presented. To be more specific, the presentation focuses first on the independent variables of the framework (shown on the left side of Figure 3.1) and then on the dependent variables of this study (shown on the right side of Figure 3.1). Bearing in mind that this study sought to generate evidence relating to different modes of export performance assessments employed (see research objectives in section 1.2), the structure mentioned above aims to familiarise first, the reader with characteristics associated with the respondent firms before proceeding to analyse findings of substantive importance relating to the main questions of this thesis. In fact, the presentation of the findings follows this order: (i) five export-specific characteristics (ii) four company-specific characteristics, (iii) seven management-related characteristics, (iv) one environmental characteristic, (v) three performance-related characteristics and finally (vi) two variables that are used for validation purposes. Then, the presentation continues with the dependent variables relating to the assessment of export performance (see Figure 3.1) in the following order: (vii) three variables capturing the relative importance of three export objectives (see research objective 1, section 1.2), (viii) three variables reflecting the relative emphasis on the frames of reference adopted when assessing export performance (see research objective 2a, section 1.2) and (ix) five variables involving the time horizon used in export performance evaluations (see research objective 2b, section 1.2). Subsequently, validity issues relating to the multi-item scales employed are discussed. A summary

of the implications of the descriptive findings for the ensuing analysis along with the profile of the sample of export participants are provided at the end.

## 5.1 EXPORT CHARACTERISTICS

There are altogether five export characteristics namely, export experience, export commitment, export dependence, export destination diversity and export resource inadequacy. Note that all five of them have been included in the proposed framework (see Figure 3.1) as potential antecedents of export performance assessments.

### 5.1.1 Export experience

Among 163 respondents (i.e. there are 8 missing values) the mean value for export experience is 28.5 years (see table 5.1). This is higher than the median thereby suggesting a slightly skewed distribution.

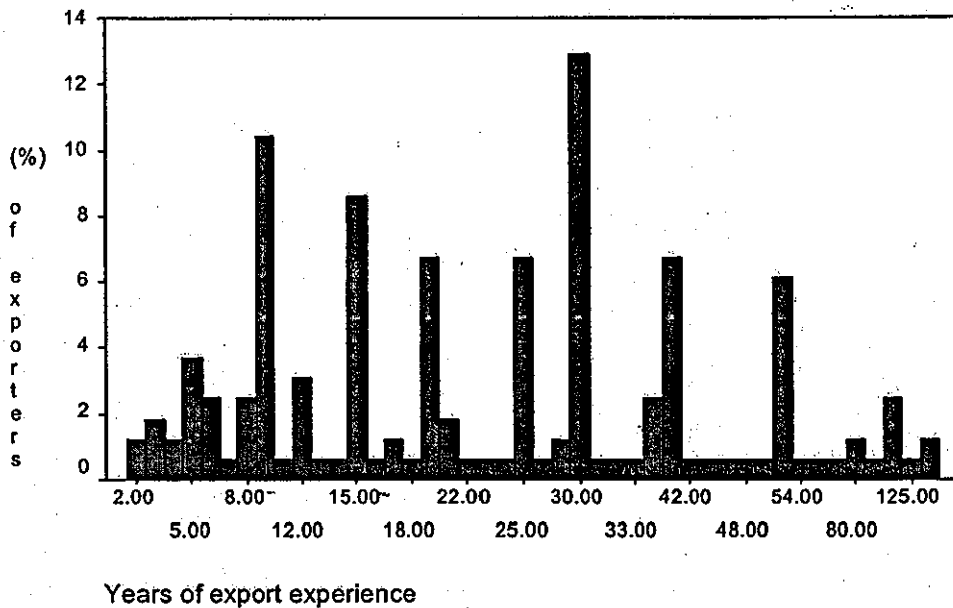
**Table 5.1: Export experience (years)**

N	Valid	163
	Missing	8
Mean		28.564
Median		24.000
Std. Deviation		25.263
Minimum		2.0
Maximum		150.0

The Kolmogorov-Smirnov test was used to examine normality. The K-S is a non-parametric test that can be used to examine whether a variable's observed distribution follows (or departs from) a particular form, such as a theoretical normal distribution (Diamantopoulos and Schlegelmilch, 1997). Also remember that the null hypothesis assumes the existence of *no* difference from a normal curve. The K-S test resulted in a highly significant statistic ( $z=2.48$ ,  $p=.000$ , 2-tailed) suggesting that the distribution of the data deviates from a normal curve.

In cumulative terms, about 48% of the exporters have between 20 and 63 years of experience suggesting that almost half of this sample consists of experienced firms in export operations. Yet, the sample consists of firms whose export experience spreads between 2 and 150 years of export operations (see table 5.2 and also figure 5.1).

**Figure 5.1: Export experience**



Given the fact that the accumulated export experience is constrained by a firm's age (number of years in operation), the respondent firms' export experience has been also examined relative to firms' age (see more about age in section 5.2.2).

**Table 5.2: Export experience – Age ratio**

N	Valid	160
	Missing	11
Mean		.684
Median		.753
Std. Deviation		.283
Minimum		.04
Maximum		1.0

In cumulative terms, about 44% of the respondents have been exporting for longer than half of their lives. The mean score shown in table 5.2 suggests that the average



export experience is 68% of a firm's age. Yet, the minimum and maximum values (see above) exhibit considerable differences implying that the sample is composed of dissimilar firms; in fact, some of the respondents have been exporting for all their lives while there are others whose export experience is limited to 4% of their age only. In light of the above, it seems that this study is likely to capture such different perspectives on export performance assessments as those practiced by exporters that are very different in terms of experience. The findings may offer richer insights into the practitioners' evaluations of export success.

### 5.1.2 Export Commitment

This three-item measure shown below has been adapted from Cavusgil and Zou, (1994); they used it to capture commitment to export ventures. The variable that corresponds to each item is shown between brackets.

- In our firm, export operations are carefully planned (PLANEXPO)
- Our firm's management is committed to exporting (COMITEXP)
- Our firm commits substantial resources to exporting (RESOUEXP)

Dealing with multi-item scales such as the one above, requires the application of a set of established *measure development* procedures. The reason is that multi-item scales must fulfil requirements relating to the concepts of reliability and unidimensionality before taking part in any further analysis. General points about these concepts follow. Note that the following points also apply to the rest of the multi-item scales employed in the context of this study. The concept of reliability suggests the ability of a scale to provide consistent measurements when administered repeatedly to the same respondents (Spector, 1992) while the concept of unidimensionality refers to the existence of a single construct underlying a set of measures (Gerbing and Anderson, 1998). A coefficient called alpha (see below) is used to assess the reliability of a scale (Cronbach, 1951) and 0.70 is considered to be the lowest acceptable value for alpha (Nunnally, 1978). With respect to the unidimensionality of a scale, a data reduction method called factor analysis is used. The approach employed here is purely exploratory (called EFA or *exploratory* factor analysis) where the researcher makes no assumption about the number of factors underlying the set of a scale's items and

causing item variation (Hair et al, 1998). In this context, it is worth noting that variance (e.g. see table 5.3) is an extremely important characteristic for a scale, as one whose scores do not vary (i.e. they are almost constant) could not be used in relation to any other scale (i.e. it is impossible to have co-variation that signifies the likely existence of a relationship).

With respect to reliability and unidimensionality there are opposite views on which of the two should be established first (e.g. see Churchill, 1979; Gerbing and Anderson, 1988). Although non-of these views are necessarily wrong, it is not the purpose of this study to contribute to this debate. Instead, what has been taken into account is the fact that the selected scales such as the one above were borrowed from the literature. Specifically, this particular scale has been already tested in a different export context and was found to be unidimensional. Without claiming that the latter is definitely going to be the case in the present study, it was thought that it makes more sense to determine first, the reliability (internal consistency) of the scale in the context of this study before testing the scale's dimensionality. Note that a similar rationale has been followed through ought this study for the rest of the multi-item scales employed (for an example see the scale measuring export resource inadequacy in section 5.1.5).

Internal consistency of a scale is part of its reliability and the measuring items of an internally consistent scale must be highly correlated. In this respect, the first step is to conduct an item analysis, which contributes to the formation of an internally consistent scale, one that all items measure the same construct (Spector, 1992). To achieve that, correlations among items are examined in order to identify those items that are appropriate to constitute the scale and eliminate those that are not (Churchill, 1979; De Vellis, 1991).

The standard procedure to test a multi-item scale's reliability, involves both inter-item correlations as well as item-scale correlations. As far as the former is concerned, items with weak inter-item correlations should be removed from the scale (De Vellis, 1991). With regards to the item-scale correlations, it has been suggested that each item should be correlated with either the sum of the rest of the items of the scale (corrected item total correlation) or the sum of the scale's items including itself (uncorrected item total correlation) (De Vellis, 1991). Note however, that any item

correlates perfectly with itself. Hence, an item's correlation with the uncorrected sum of the scale's items would not provide any additional information in comparison to the corrected item total correlation. The latter was considered adequate for the needs of this study. The outcome of the procedure used for scale development (i.e. the relevant correlations etc.) is shown in table 5.3 below before the presentation of the descriptive findings for the export commitment construct.

**Table 5.3: Reliability analysis - export commitment scale (alpha)**

	Mean	Std. Dev	Cases
1. PLANEXPO	4.8647	1.5111	170.0
2. COMITEXP	5.9000	1.3485	170.0
3. RESOUEXP	5.0706	1.7186	170.0

*Correlation Matrix*

	PLANEXPO	COMITEXP	RESOUEXP
PLANEXPO	1.0000		
COMITEXP	.4696	1.0000	
RESOUEXP	.4389	.5393	1.0000

Statistics for Scale	Mean	Variance	Std Dev.	Variables
	15.8353	13.7479	3.7078	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.2784	4.8647	5.9000	1.0353	1.2128	.3004

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PLANEXPO	10.9706	7.2713	.5145	.2691	.6875
COMITEXP	9.9353	7.5165	.5968	.3580	.6066
RESOUEXP	10.7647	6.0153	.5669	.3350	.6362

### Reliability Coefficients (3 items)

Alpha = .7302      Standardized item alpha = .7367

The measure has internal consistency and acceptable reliability coefficient ( $\alpha = 0.73$ ). Should any of the items be dropped, the coefficient will not improve (see alpha if item deleted in table 5.3 above).

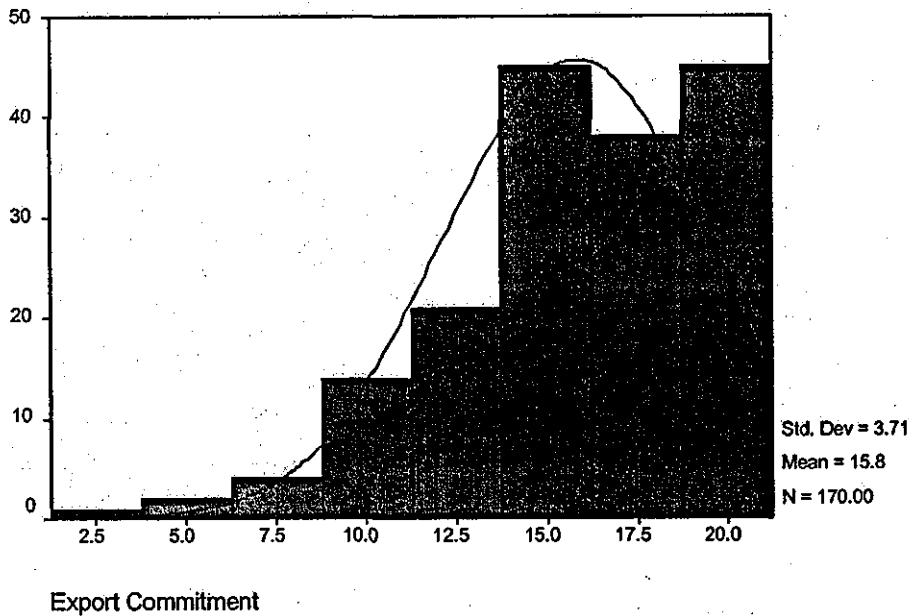
The testing of the scale's reliability is followed by the assessment of the scale's unidimensionality; this assessment was undertaken with the help of EFA mentioned above. The method used here is common factor analysis (principal axis factoring or PAF) as opposed to the principal components (or PCA) technique. While both data reduction techniques can be used when a large number of variables needs to be described with a smaller set of composite variables, these techniques differ in terms of their usage. PAF focuses on the *common* variance shared among the original variables and seeks to identify meaningful and interpretable common factors. It focuses on the interrelationships between variables and describes them in terms of underlying dimensions (Diamantopoulos and Schlegelmilch, 1997). In contrast, PCA is the appropriate technique to use when focusing on the *total* variance in the data. It seeks to reduce the initial set of variables into a smaller set of components (or composite variables) uncorrelated to one another (Diamantopoulos and Schlegelmilch, 1997) and can also be used when confirmation is needed that the different components are indeed separate and cannot be reduced to an even smaller number. Following the application of PAF this scale is found to be unidimensional; the items load on a single factor explaining 65.5% of the variance (see the scale's descriptive statistics below).

**Table 5.4: Export commitment**

N	Valid	170
	Missing	1
Mean		15.835
Median		16.000
Std. Deviation		3.707
Variance		13.747
Minimum		3.0
Maximum		21.0

Among 170 cases where the minimum is 3 and the maximum 21, the scale's mean value (15.8) almost equals the median (standard deviation 3.7). In cumulative terms, approximately half of the respondents report that they are more export committed than average. The K-S test used to test the normality of the distribution resulted into a significant statistic ( $z=1.49$ ,  $p=0.023$ , 2-tailed) meaning that the relevant scores are not normally distributed. This is graphically shown in figure 5.2.

**Figure 5.2: Export commitment**



### 5.1.3 Export dependence

The dependence of firms on their export operations is reflected on the size of their export sales in proportion to their total sales (%). Only one respondent failed to answer this question. The sample includes a wide spectrum of firms whose dependence on export activities extends from 2% to 100% of their total sales. In terms of cumulative frequencies about 54% of the respondent firms export less than 44.5 % of their turnover (see mean value 44.52). Table 5.5 below shows that the mean value is slightly higher than the median thereby implying a positively skewed distribution.

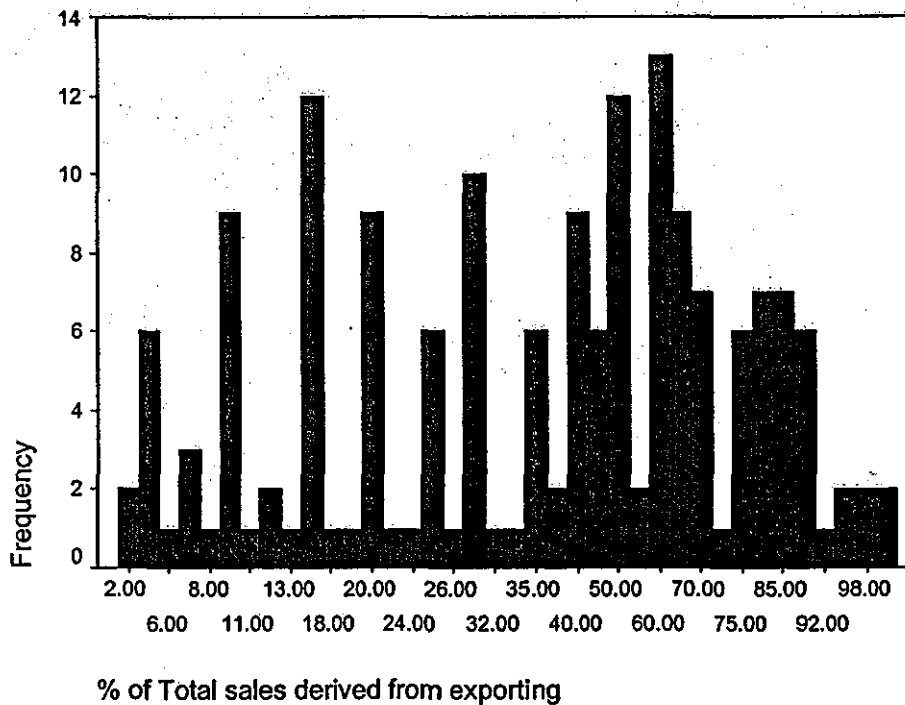
Within the group of respondents, only 12.9% of them export less than 10% of their turnover while in contrast, 7.6% of them replied that their export sales exceed 85% of their total sales. However, the majority of the firms (52.4%) export between 30% and 85% of their turnover.

**Table 5.5: Export dependence (% of total sales realised from exporting)**

N	Valid	170
	Missing	1
Mean		44.5294
Median		40.0000
Std. Deviation		27.6613
Minimum		2.00
Maximum		100.00

The K-S test resulted into a significant statistic at the 5% level ( $z=1.31$ ,  $p=.064$ , 2-tailed) suggesting a *normally* distributed variable. Figure 5.3 shows the reported levels of dependence on exporting in terms of absolute frequencies.

**Figure 5.3: Export dependence**



### 5.1.4 Export destination diversity

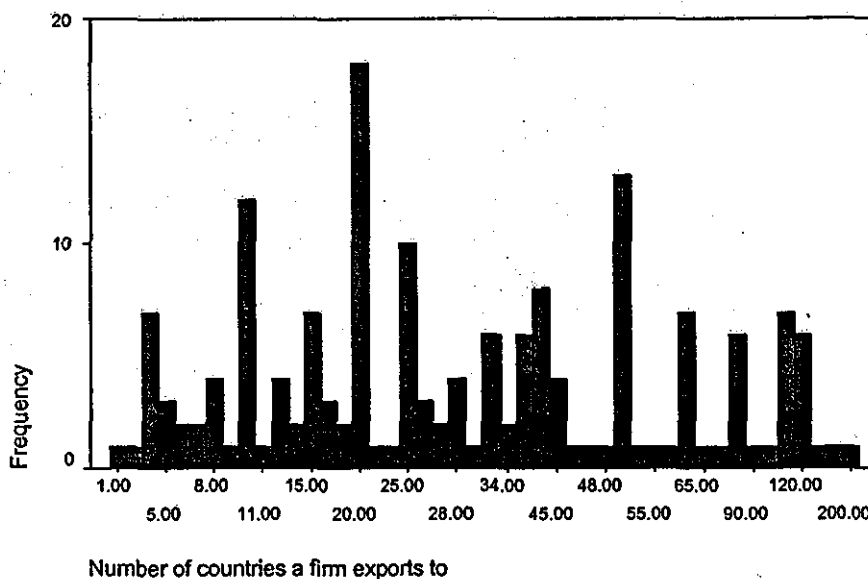
Export firms may have complex operations and export their products to various different markets (Matthyssens and Pauwels, 1996; Katsikeas, 2000). This is also one of the reasons that the assessment of export success is studied at the firm as opposed to venture level (see section 2.7.9). Indeed, the evidence shows that the number of countries composing the respondent firms' export destinations varies between 1 and 200; in fact, more than 62% export to less than 38 countries (see mean value below).

**Table 5.6: Export destination diversity (number of countries a firm exports to)**

N	Valid	170
	Missing	1
Mean		38.0647
Median		26.5000
Std.		33.7013
Minimum		1.00
Maximum		200.00

The mean is higher than the median, suggesting a positively skewed distribution. The K-S test gave a highly significant statistic ( $z=2.23$ ,  $p=.000$ , 2-tailed); hence the distribution lacks normality. Figure 5.4 below demonstrates the diversity of export destinations (numbers of countries served) in terms of absolute frequencies.

**Figure 5.4: Export destination diversity**



### 5.1.5 Export resource inadequacy

This three-item scale was adopted from Bello and Gilliland (1997) and is used to measure the extent to which an export firm is deficient in its capacity to engage in export activities (see below).

- Our firm's export expansion is limited by the time and effort that senior management can devote to exporting (LIMITIME)
- Human resources limit our firm's ability to increase export activities (LIMHUMRE)
- Our firm lacks the financial resources needed to expand our export efforts (LIMFINAN)

For reasons mentioned earlier (see section 5.1.2), the reliability of the scale was established before examining its dimensionality. The following table 5.7 provides an overview of the reliability analysis undertaken.

**Table 5.7: Reliability analysis - Export resource inadequacy scale (alpha)**

	Mean	Std. Dev	Cases
1. LIMITIME	4.1765	1.9226	170.0
2. LIMHUMRE	4.4529	1.9309	170.0
3. LIMFINAN	3.7118	2.0625	170.0

#### *Correlation Matrix*

	LIMITIME	LIMHUMRE	LIMFINAN
LIMITIME	1.0000		
LIMHUMRE	.4916	1.0000	
LIMFINAN	.4292	.4445	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	2.3412	22.2734	4.7195	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.1137	3.7118	4.4529	.7412	1.1997	.1403



*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
LIMITIME	8.1647	11.5230	.5404	.2970	.6146
LIMHUMRE	7.8882	11.3543	.5526	.3085	.5996
LIMFINAN	8.6294	11.0749	.5059	.2562	.6591

Reliability Coefficients (3 items)

Alpha = .7135      Standardized item alpha = .7148

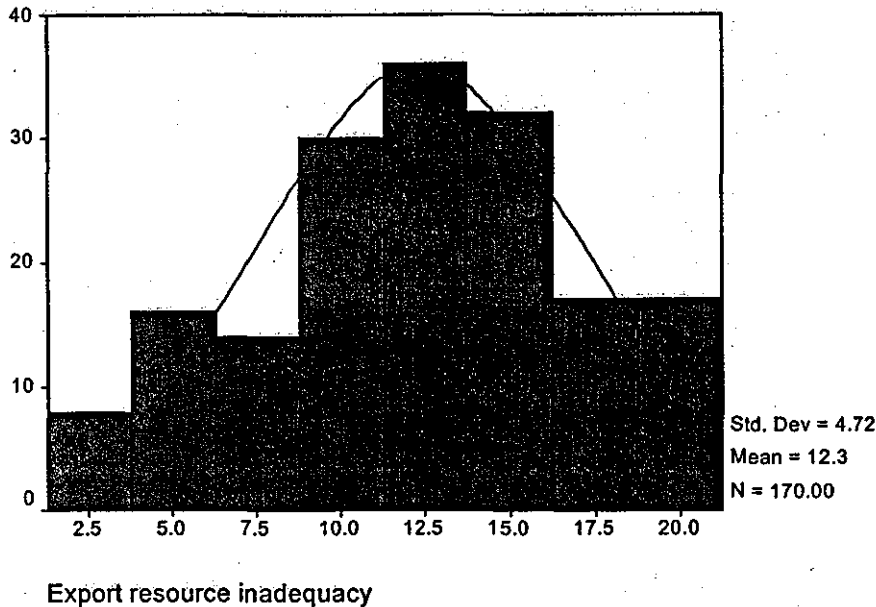
The scale is internally consistent and its reliability coefficient is acceptable ( $\alpha=0.71$ ). The unidimensionality tested by factor analysis (i.e. principal components and axis factoring) resulted in one factor loading that explains 65.5% of the variance in the data. Among 170 cases (one is missing) the descriptive statistics for the scale show (see table 5.8) that the mean value (12.3) is slightly smaller than the median (13.0) and the standard deviation is 4.7 (see below). The minimum and maximum values are the same with the measure of export commitment discussed earlier.

**Table 5.8: Export resource inadequacy**

N	Valid	170
	Missing	1
Mean		12.341
Median		13.000
Std. Deviation		4.719
Variance		22.273
Minimum		3.0
Maximum		21.0

While it was found that half of the respondents are more committed to exporting than not (see section 5.1.2), approximately an equal percentage of them believe their exporting activities to be constrained by the resources available. The K-S test statistic is non-significant ( $z=1.0$ ,  $p=0.20$ , 2-tailed) meaning that assumptions for a *normally* distributed curve are satisfied. This is shown in figure 5.5, which graphically depicts percentages of exporters in terms of the levels of resource inadequacy reported.

**Figure 5.5: Export resource inadequacy**



## 5.2 COMPANY CHARACTERISTICS

The presentation continues with five company-related characteristics that are analysed and presented in this order: firm's size, firms' age, firm's ownership status, type of products and respondents' status. Aside from size that is employed as an antecedent factor in the proposed framework, the rest four variables reflect demographic characteristics used in this study to help draw a picture of the participant exporters.

### 5.2.1 Firm's size

The size of an export firm is measured in terms of (i) the number of employees (full and part-time) working for a particular firm (i.e. each part-time employee counted as 0.5 while each full-time employee counted as 1) and (ii) the annual sales turnover.

#### *(i) Number of employees*

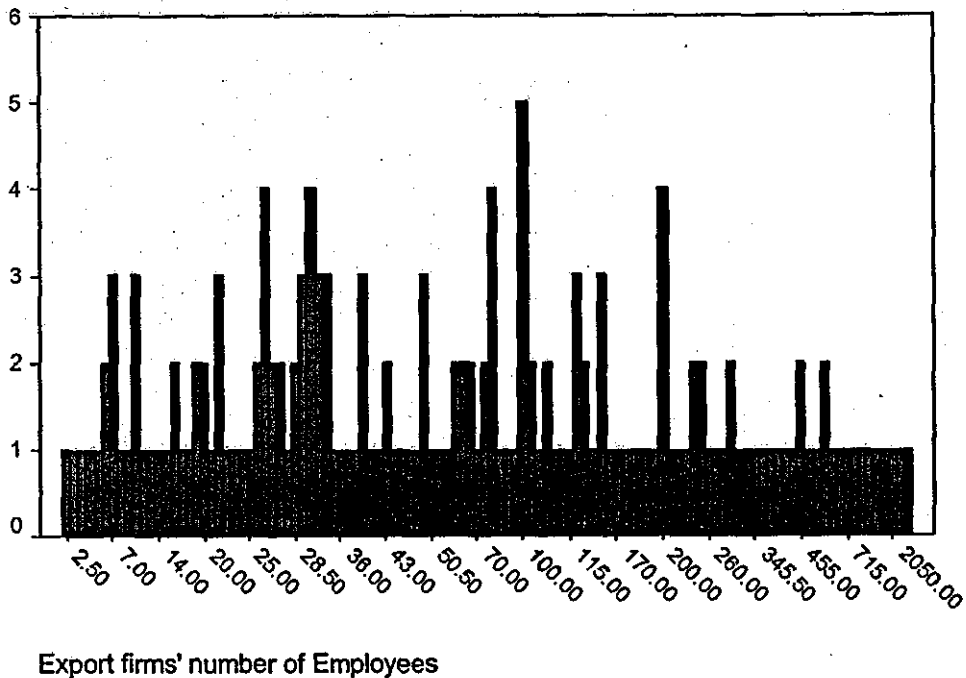
Three respondents failed to indicate the number of people their firms employ. The minimum and maximum values shown in table 5.9 suggest considerable size differences across the sample of exporters.

**Table 5.9: Firms' size measured in terms of number of employees**

N	Valid	168
	Missing	3
Mean		221.720
Median		60.500
Std. Deviation		633.574
Minimum		2.50
Maximum		7050.0

The distribution of the participant export firms' size is positively skewed as indicated by the fact that the mean value is much higher than the median. The K-S test statistic is highly significant ( $z=4.72$ ,  $p=.000$ , 2-tailed) suggesting a lack of normality for this variable. In cumulative terms, approximately 79% of the export firms have less than 221 employees, which is the mean value (see table 5.9). The cumulative frequencies also showed that 32.2% of the respondent firms fall between 100 and 500 employees; only 2.4% of the firms included in the sample have less than 5 employees and 2.4% of the export firms exceed 2000 employees. The high standard deviation (633.57) shown in table 5.9 indicates great dispersion in terms of firm size.

**Figure 5.6: Firms' size measured in terms of number of employees**



The diversity of the exporters' size is graphically depicted in terms of absolute frequencies in figure 5.6 above.

*(ii) Annual sales turnover*

The export firms' size was also measured in terms of total annual sales turnover (£million); the turnover was used as an additional criterion to facilitate the classification of respondents. 15 respondents (just under 9%) did not wish to disclose information relating to their turnover (see below); such information was probably considered to be sensitive despite the fact that confidentiality was promised.

**Table 5.10: Firms' size measured in annual sales turnover (£millions)**

N	Valid	156
	Missing	15
Mean		31.222
Median		6.750
Std. Deviation		95.046
Minimum		.06
Maximum		890.0

The sample includes export firms whose turnover spreads from less than £1 m to £890m, while the large majority of them does not exceed £31.22 m (the mean value shown in table 5.10). According to the cumulative frequencies, 82% of firms' annual sales turnover falls below the mean value thereby indicating a positively skewed distribution; this is consistent with the firms' size measured in terms of number of employees as discussed earlier. In line with the K-S result discussed above, the K-S test statistic is once again highly significant ( $z=4.64$ ,  $p=.000$ , 2-tailed) suggesting that the export firms' distribution in terms of turnover does not follow a normal curve.

**5.2.2 Firm's age**

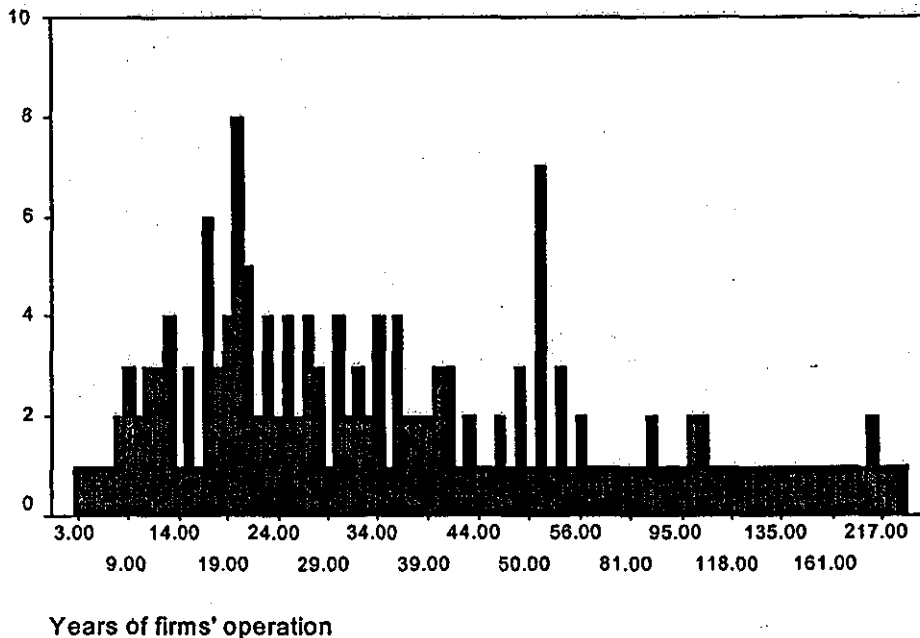
The age of the firms included in this sample of exporters varies greatly spreading from 3 to 261 years from the year a firm was established (see minimum and maximum values in table 5.11).

**Table 5.11: Firms' age measured in terms of years in operation**

N	Valid	168
	Missing	3
Mean		49.958
Median		33.000
Std. Deviation		48.907
Minimum		3.0
Maximum		261.0

With the exception of three exporters that did not provide an answer, approximately 70% of the rest have been in operation for less than 50 years (mean value 49.95). Most of the exporters are younger than the mean age; this also suggests a positively skewed distribution for this sample of exporters. Speaking in cumulative terms, 28% of export firms have been operating for *no* longer than 20 years and only 6.5% of them have less than 10 years in business. The K-S test statistic is highly significant ( $z=3.06$ ,  $p=.000$ , 2-tailed) reflecting the fact that the age of export firms is not a normally distributed variable. The following bar chart (see figure 5.7) shows the diversity of export firms' age in terms of absolute frequencies.

**Figure 5.7: Firms' age**



### 5.2.3 Firm's ownership status

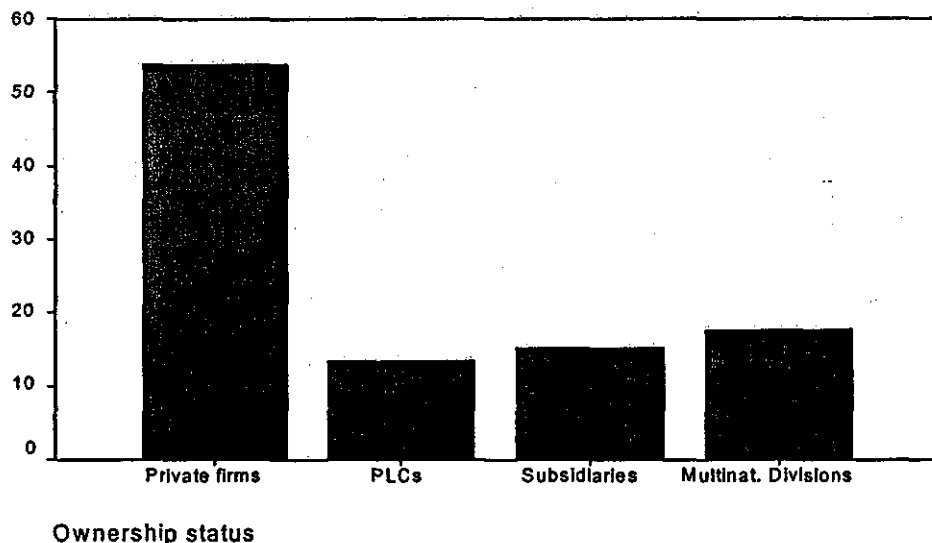
Based on a set of four categories (i.e. (1) independent private firms, (2) independent public liability (PLC) companies, (3) subsidiary/affiliate companies and (4) division of a multinational company), exporters were asked to provide information on the status of their firms' ownership. All the participant exporters classified their firms accordingly; this particular question had no missing values.

**Table 5.12: Firm's ownership status**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	92	53.8	53.8	53.8
	2.00	23	13.5	13.5	67.3
	3.00	26	15.2	15.2	82.5
	4.00	30	17.5	17.5	100.0
	Total	171	100.0	100.0	

The sample consists of firms whose ownership status varies. Specifically, the majority (53.8%) are independent private firms (see category 1); the rest three groups are similar in terms of size. In fact, 13.5% of the export firms are PLC companies (see category 2), 15.2% of them are subsidiary/affiliate companies (see category 3) and 17.5% are a division of a multinational company (see category 4 above).

**Figure 5.8: Firm's ownership status**



This is a nominal variable and normality testing does not apply. Figure 5.8 above offers a graphical representation of the four-group classification in terms of percentages of export firms.

#### 5.2.4 Product type

The respondents were also asked to classify their firms in terms of the product(s) and/or services they produce. Out of the total of exporters (171) questioned on their product type, there were no missing values. According to the exporters' replies, the majority of them (74.2%) concentrate their business efforts within the context of one product type as opposed to those (25.8%) involved in more than one product type. Table 5.13 shows the different product categories along with the respective frequency scores. Note that firms producing more than one type of product have been included in more than one category out of those shown below. Such firms have been counted more than once, which explains why the sum exceeds 171.

**Table 5.13: Frequencies based on the type of product produced**

<i>Product Type</i>	<i>Frequencies</i>	<i>Percentage</i>
<i>Consumer goods</i>	45	26.3 %
<i>Industrial goods</i>	143	83.6%
<i>Services</i>	25	14.6%
<i>Consumer and industrial goods</i>	20	11.7%
<i>Consumer goods and services</i>	2	1.2%
<i>Industrial goods and services</i>	21	12.3%
<i>Consumer &amp; industrial goods &amp; services</i>	1	0.6%
<i>Other</i>	0	0

To be more specific, the respondents reported that their firms manufacture mainly industrial goods (83.6%) and/or consumer goods (26.3%). Some of the firms (14.6%) provide services too (e.g. engineering, construction, project management consulting); while such firms represent a relatively small portion, most of the service producers also produce industrial goods (12.3%).

The presentation continues with the management-related factors studied.

### 5.3 MANAGEMENT-RELATED CHARACTERISTICS

Seven management-related characteristics are included in the conceptual framework. They are analysed descriptively below starting with the shared vision/purpose construct, then innovativeness, open-mindedness, risk orientation, future-oriented culture, commitment to learning and export market orientation.

#### 5.3.1 Shared Vision/Purpose

This is a four-item scale adopted from Sinkula, Baker and Noordewier (1997). It measures the extent to which a sense of vision and purpose (or common goals) are shared within an organisation. The items corresponding to the four variables are:

- There is a commonality of purpose in our company (COMPURP)
- There is agreement on our organisational vision across all levels, functions and divisions (ORGANVIS)
- Employees are committed to the goals of our company (GOALCOMT)
- Employees view themselves as partners in charting the direction of the company (EMPLPART)

The reliability of the scale was tested and it is evident that the latter is reliable (internally consistent) with a high alpha (see below). Table 5.14 includes inter-item correlations, the corrected item-total correlations and the reliability co-efficient alpha.

**Table 5.14: Reliability analysis - Shared vision/purpose scale (alpha)**

	Mean	Std Dev.	Cases
1. COMPURP	4.9647	1.5226	170.0
2. ORGANVIS	4.4706	1.4602	170.0
3. GOALCOMT	4.9765	1.4014	170.0
4. EMPLPART	3.9588	1.5475	170.0

#### *Correlation Matrix*

	COMPURP	ORGANVIS	GOALCOMT	EMPLPART
COMPURP	1.0000			



ORGANVIS	.6596	1.0000		
GOALCOMT	.6236	.6040	1.0000	
EMPLPART	.5368	.5638	.6462	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	18.3706	24.7553	4.9755	4

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.5926	3.9588	4.9765	1.0176	1.2571	0.2341

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
COMPURP	13.4059	14.3136	.7051	.5208	.8198
ORGANVIS	13.9000	14.6704	.7110	.5183	.8173
GOALCOMT	13.3941	14.8556	.7346	.5454	.8088
EMPLPART	14.4118	14.4803	.6691	.4715	.8355

Reliability Coefficients (4 items)

Alpha = .8589      Standardized item alpha = .8600

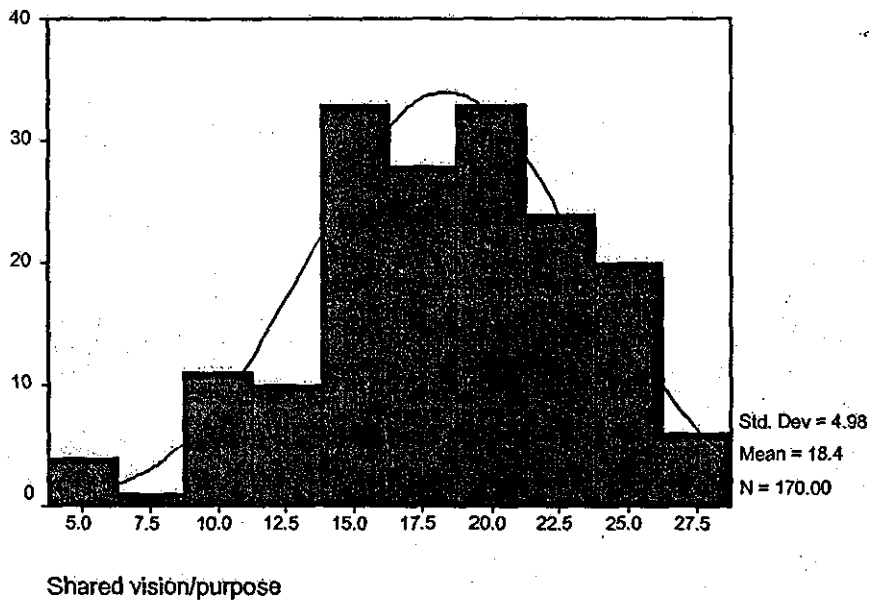
To examine the unidimensionality of this scale, principal axis factoring was used as before (see section 5.1.2). Indeed, the scale is unidimensional; all items load on a single factor explaining 70.44% of the variance. The frequencies shown in table 5.15 are based on 170 cases (one is missing); the scale's mean value is only marginally higher than the median.

**Table 5.15: Shared vision/purpose**

N	Valid	170
	Missing	1
Mean		18.370
Median		18.000
Std. Deviation		4.975
Variance		24.755
Minimum		4.0
Maximum		28.0

The K-S test used to examine normality resulted into a non-significant statistic ( $z=1.06$ ,  $p=0.21$ , 2-tailed) meaning that the distribution of the data assumes a *normal* curve. This is shown in the frequency graph below (see figure 5.9).

**Figure 5.9: Shared vision/purpose**



### 5.3.2 Innovativeness

This is a four-item measure the first three items of which have been adapted from Webster (1993) where they constituted part of a marketing culture measure. The fourth item (see below) was taken from a scale that measures excellence in business (EXCEL) developed by Sharma, Netemeyer and Mahajan, 1990 (see more in section 5.6.1). The scale measuring innovativeness includes the following items:

- In our firm all employees are receptive to ideas for change (EMPLCHNG)
- In our firm we keep up with ideas for technological advances (TECADVA)
- Our firm is receptive to change (RCPCHNG)
- Our firm's top management creates an atmosphere that encourages creativity and innovativeness (INOVATMO)

The measure appears to be highly reliable (internally consistent) with a co-efficient alpha that reaches almost 0.82. The relevant correlations are presented in table 5.16 below.

**Table 5.16: Reliability analysis - Innovativeness scale (alpha)**

	Mean	Std Dev	Cases
1. EMPLCHNG	3.9527	1.6066	169.0
2. TECADVA	5.0947	1.5246	169.0
3. RCPCHNG	4.8698	1.4823	169.0
4. INOVATMO	4.6805	1.6271	169.0

*Correlation Matrix*

	EMPLCHNG	TECADVA	RCPCHNG	INOVATMO
EMPLCHNG	1.0000			
TECADVA	.3882	1.0000		
RCPCHNG	.5873	.6297	1.0000	
INOVATMO	.5270	.4442	.6243	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	18.5976	25.2657	5.0265	4

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.6494	3.9527	5.0947	1.1420	1.2889	.2444

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
EMPLCHNG	14.6450	15.2303	.5945	.3871	.7940
TECADVA	13.5030	15.9896	.5702	.4009	.8034
RCPCHNG	13.7278	14.4136	.7690	.5969	.7140
INOVATMO	13.9172	14.6479	.6400	.4326	.7727

**Reliability Coefficients (4 items)**

Alpha = .8188      Standardized item alpha = .8206

The factor analysis performed (principal axis factoring) showed that this scale is unidimensional too. All items load in a single factor explaining 65.2% of the variance.

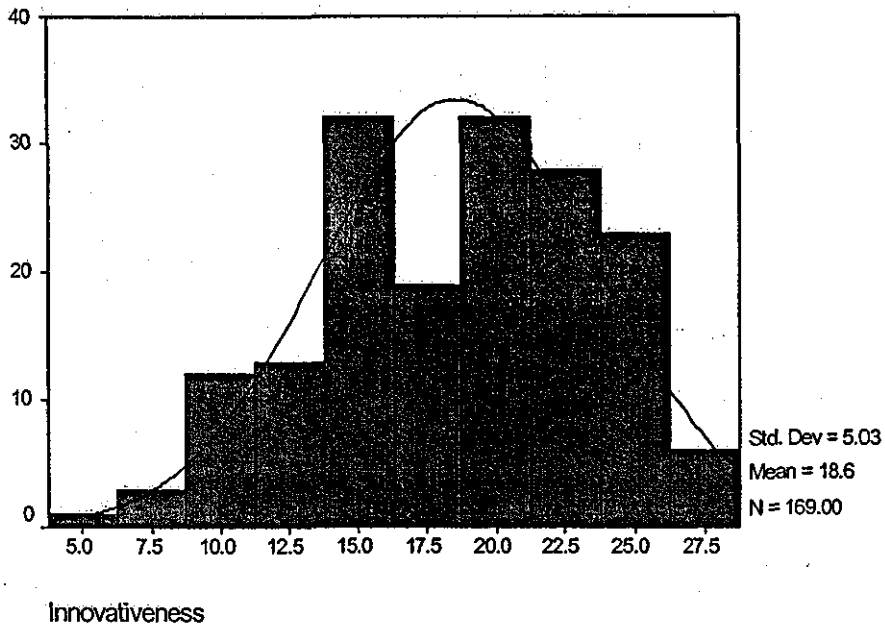
The summated scale's mean value is 18.5 (median 19.0) is shown in table 5.17. It is also interesting to note that according to the cumulative frequencies, slightly more than half of the respondents perceive their firms as more innovative than not. The latter outcome is consistent with the findings relating to an organisation's shared vision/purpose measure discussed earlier; it shows that there is a relationship between common culture or values shared within a firm and its degree of innovativeness.

**Table 5.17: Innovativeness**

N	Valid	169
	Missing	2
Mean		18.597
Median		19.000
Std. Deviation		5.026
Variance		25.265
Minimum		5.0
Maximum		28.0

The distribution was tested for normality by using the K-S test, which resulted in a non-significant statistic at the 5% level ( $z=1.31$ ,  $p=0.064$ , 2-tailed). This suggests goodness of fit with a *normal* curve (see figure 5.10).

**Figure 5.10: Innovativeness**



### 5.3.3 Open-mindedness

The following three-item measure was adapted from Sinkula, Baker and Noordewier (1997) to capture open-mindedness in an export firm:

- We are not afraid to reflect critically on the shared assumptions we make about our customers (QUESCUST)
- Personnel in our firm realise that the very way they perceive the market place must be continually questioned (QUESMRKP)
- In our firm we rarely collectively question our biases about the way we interpret customer information (QUESBIAS)

Reverse coding had been used for the third item (i.e. QUESBIAS). However this item proved to be problematic. Due to this particular item, the reliability co-efficient of the measure was unacceptably low ( $\alpha = 0.37$ ). In fact this bad item caused an internally inconsistent measure (i.e. both the inter-item correlation and the corrected item total correlation resulted in low or negative scores whenever the aforementioned item was

involved). In this context, elimination of the former item was deemed necessary to improve the scale's reliability (see relevant correlations in table 5.18).

**Table 5.18: Reliability analysis – Open-mindedness scale (alpha)**

	Mean	Std Dev	Cases
1. QUESCUST	4.8538	1.3663	171.0
2. QUESMRKP	4.3626	1.4461	171.0
3. QUESBIAS	4.3684	1.4749	171.0

*Correlation Matrix*

	QUESCUST	QUESMRKP	QUESBIAS
QUESCUST	1.0000		
QUESMRKP	.4795	1.0000	
QUESBIAS	-.0636	.0970	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	13.5848	8.1854	2.8610	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.5283	4.3626	4.8538	.4912	1.1126	.0795

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
QUESCUST	8.7310	4.6802	.2772	.2422	.1768
QUESMRKP	9.2222	3.7856	.4102	.2462	-.1354
QUESBIAS	9.2164	5.8529	.0220	.0251	.6475

**Reliability Coefficients (3 items)**

Alpha = .3761      Standardized item alpha = .3822

Indeed after excluding the aforementioned item, the reliability co-efficient of the measure was almost doubled ( $\alpha = 0.64$ ) (see above). The disappointing results of the dropped item may be attributed to its negative wording. Specifically, if the word

“rarely” (see item above) is omitted, it alters completely the meaning of the question and therefore, affects dramatically the direction an answer will take (i.e. disagreement or agreement). It is likely that such a mistake was made by a number of respondents who must have misinterpreted the item and resulted in inconsistent answers. In this respect, it would have been easier for the respondents (and therefore better for the study) if the item had been positively phrased (i.e. “we collectively question our biases etc.”).

Following the reliability test, this two-item measure was tested for unidimensionality using principal axis factoring. The analysis showed that both items load on a single factor explaining 73.9% of the variance in the data. Descriptive statistics for this scale are shown in table 5.19.

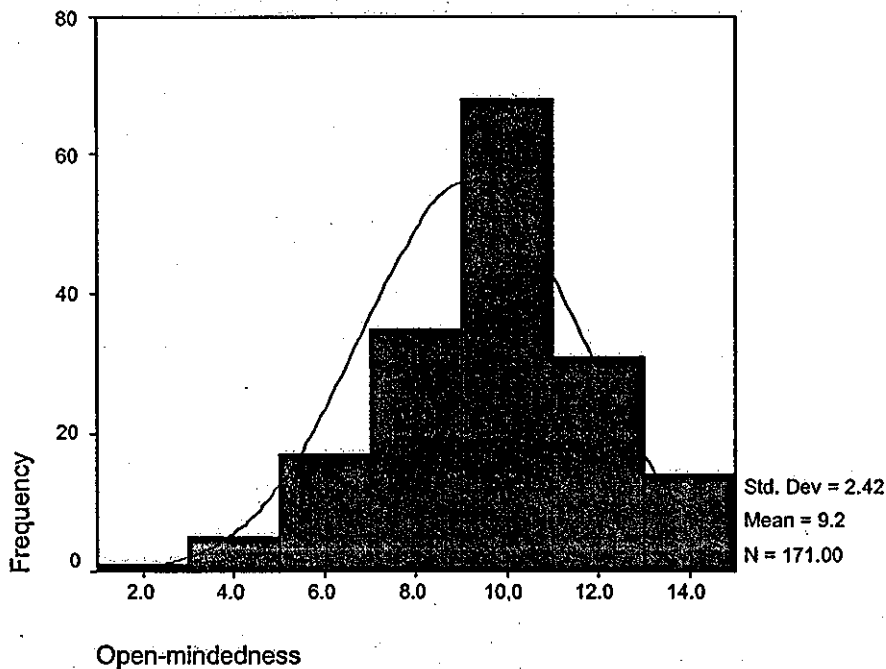
**Table 5.19: Open-mindedness**

N	Valid	171
	Missing	0
Mean		9.216
Median		9.000
Std. Deviation		2.419
Variance		5.852
Minimum		2.0
Maximum		14.0

Among 171 cases there are no missing values for this variable. The mean value (9.2) just higher than the median shows a slightly positively skewed distribution. Given that the scores vary (see variance above), this measure can distinguish between different levels of open-mindedness (see min 2 and max 14) in a diverse sample of exporters.

The normality of the scale was tested with the Kolmogorov-Smirnov (K-S) test. The resulting K-S test statistic is highly significant ( $z=1.63$ ,  $p=0.09$ , 2-tailed) suggesting that the distribution of the data is unlikely to be described as normal. The curve is displayed in the graph below (see figure 5.11).

**Figure 5.11: Open-mindedness**



### 5.3.4 Risk Orientation

This is a six-item scale (see below) based on two measures of risk, namely, Encouragement of risk taking, a three-item measure adopted from Song and Parry (1993) and Risk aversion (Top managers'), adapted from a five-item scale used by Menon, Jaworski and Kohli (1997). The latter measure focuses on high-risk project preference and reaction (acceptance or not) of occasional failures involved in new initiatives/business plans.

- Our management provides enough incentives to work on new ideas despite the uncertainty of their outcomes (MGTINCEN)
- If you fail in the process of creating something new, our management encourages you to keep trying. Initial failures don't reflect on your competence (FAILNEW)
- Top management in our firm believes that higher financial risks are worth taking for higher rewards (FINARISK)
- Top managers here encourage the development of innovative marketing strategies knowing well that some will fail (MRKTSTRA)



- Top managers in our firm like to "play it safe" (PLAYSAFE)
- Our top management like to implement plans only if they are certain that they will work (MGTPLANS)

The directionality of the last two items of the scale (see above) was reversed. The scale is internally consistent with an acceptable reliability coefficient of 0.75 equal to that reported by Song and Parry (1993). This is included in table 5.20.

**Table 5.20: Reliability analysis – Risk orientation scale (alpha)**

	Mean	Std Dev	Cases
1. MGTINCEN	4.1131	1.4286	168.0
2. FAILNEW	4.7679	1.4056	168.0
3. FINARISK	4.1548	1.6194	168.0
4. MRKTSTRA	4.3690	1.4786	168.0
5. PLAYSAFE	4.1131	1.6321	168.0
6. MGTPLANS	4.1131	1.6504	168.0

*Correlation Matrix*

	MGTINCEN	FAILNEW	FINARISK	MRKTSTRA
MGTINCEN	1.0000			
FAILNEW	.5290	1.0000		
FINARISK	.1244	.2184	1.0000	
MRKTSTRA	.3146	.4679	.5036	1.0000
PLAYSAFE	.1280	.2177	.5348	.5136
MGTPLANS	.1063	.1121	.3922	.3435

	PLAYSAFE	MGTPLANS
PLAYSAFE	1.0000	
MGTPLANS	.4976	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	25.6310	37.9708	6.1620	6

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.2718	4.1131	4.7679	.6548	1.1592	.0690

### Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
MGTINCEN	21.5179	30.8021	.3234	.2884	.7560
FAILNEW	20.8631	29.4123	.4318	.3835	.7299
FINARISK	21.4762	26.4425	.5347	.3710	.7021
MRKTSTRA	21.2619	25.9430	.6534	.4571	.6705
PLAYSAFE	21.5179	25.7242	.5788	.4371	.6888
MGTPLANS	21.5179	27.7721	.4297	.2768	.7329

### Reliability Coefficients (6 items)

Alpha = .7508      Standardized item alpha = .7502

Factor analysis (principal axis factoring) was performed to test the unidimensionality of the measure. It resulted into a two-factor solution, the first of which explains 45% of the variance in the data; the second factor explains 22% of the variance.

Despite that initially the scale appeared to lack unidimensionality, a qualitative evaluation of the items did not reveal any conceptually distinct underlying constructs except the one under discussion (i.e. risk). Hence, it would be difficult for the scale to be something other than unidimensional. Therefore, it was decided to perform again a factor analysis by constraining the number of factors extracted to one and test whether the items load high (>.30) on this factor only (Hair et al, 1998). Furthermore factor analysis was used to assess the unidimensionality of the original scales separately so as to exclude any possibility for them to be multi-dimensional. This separate factor analysis revealed that both the original scales are indeed, unidimensional. Moreover, all items of the risk orientation scale proved to have a high one-factor loading indicating the scale's unidimensionality.

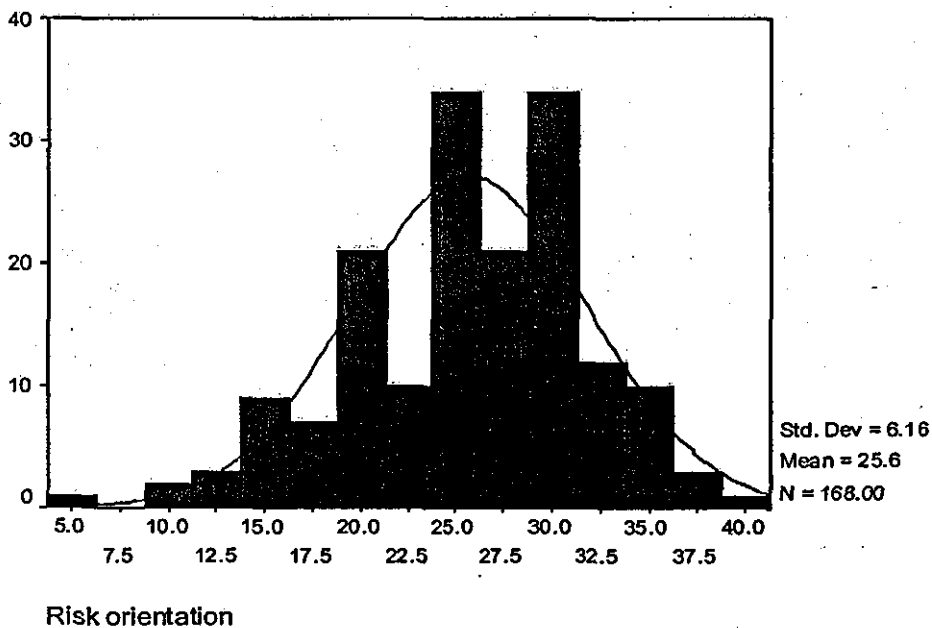
Descriptive statistics for the risk orientation variable are presented below:

**Table 5.21: Risk orientation**

N	Valid	168
	Missing	3
Mean		25.631
Median		26.000
Std. Deviation		6.162
Variance		37.970
Minimum		6.0
Maximum		39.0

There are three missing values and the mean (25.6) is just smaller than the median. In cumulative terms, it was found that half of the respondent firms consider themselves to be risk takers. This finding is in line with the findings corresponding to the management-related characteristics mentioned (i.e. shared vision, innovation and open-mindedness). Specifically, they outline a consistent context within which risk taking export firms, seem to be innovative, open-minded and share common views regarding their goals/purpose. Subsequently the K-S test was used to assess whether the measure satisfies assumptions of normality. The test statistic proved to be non-significant ( $z=1.08$ ,  $p=0.19$ , 2-tailed) and the null hypothesis of no difference between the observed and a theoretical normal curve was *not* rejected. A normal distribution is shown superimposed on the histogram below.

**Figure 5.12: Risk orientation**



### 5.3.5 Future-oriented culture

This three-item scale adopted from Kitchell (1995) measures a firm's culture regarding encouragement for planning and taking a long-term view. The scale consists of the following items:

- Our firm values highly the ability to plan ahead (PLANAHEA)
- Our management is constantly planning for the future of the company (PLANFUTU)
- People here are encouraged to take a long term view of their career with the company (LONGTCAR)

The scale is found to be internally consistent with a quite high reliability coefficient as shown in table 5.22 below.

**Table 5.22: Reliability analysis – Future-oriented culture scale (alpha)**

	Mean	Std Dev	Cases
1. PLANAHEA	5.2164	1.3218	171.0
2. PLANFUTU	5.2398	1.3442	171.0
3. LONGTCAR	4.8538	1.5403	171.0

#### *Correlation Matrix*

	PLANAHEA	PLANFUTU	LONGTCAR
PLANAHEA	1.0000		
PLANFUTU	.7089	1.0000	
LONGTCAR	.4779	.5284	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	15.3099	12.5798	3.5468	3

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.1033	4.8538	5.2398	.3860	1.0795	.0468

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PLANAHEA	10.0936	6.3677	.6694	.5174	.6873
PLANFUTU	10.0702	6.0656	.7110	.5492	.6416
LONGTCAR	10.4561	6.0731	.5446	.3007	.8296

Reliability Coefficients (3 items)

Alpha = .7933      Standardized item alpha = .8002

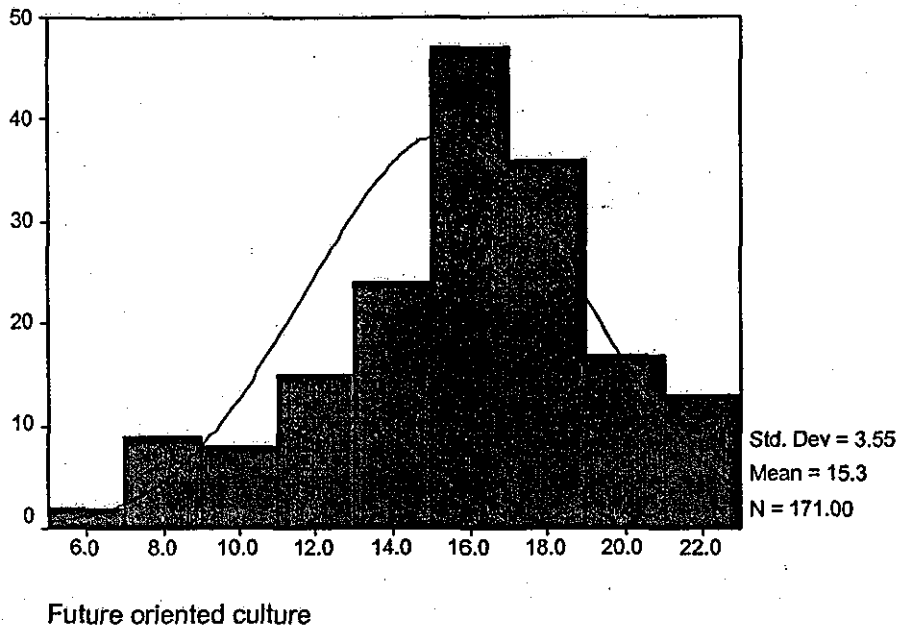
Note that the alpha found is very near to what was reported originally ( $\alpha = .80$ ) by Kitchell (1995). Furthermore, the factor analysis undertaken (principal axis factoring) produced a single factor solution explaining 71.6% of the variance; this result suggests a unidimensional measure. The descriptive frequencies for this scale are summarised below:

**Table 5.23: Future-oriented culture**

N	Valid	171
	Missing	0
Mean		15.309
Median		16.000
Std. Deviation		3.546
Variance		12.579
Minimum		6.0
Maximum		21.0

There are no missing values among 171 cases, where the minimum value is 6 and the maximum 21. The mean score (15.3) is only just smaller than the median (16.0), which implies some negative skewness in the distribution (standard deviation is 3.54). The application of the K-S test resulted in a highly significant statistic ( $z=1.64$ ,  $p=0.09$ , 2-tailed) suggesting an absence of fit with a normal curve (see figure 5.13).

**Figure 5.13: Future-oriented culture**



### 5.3.6 Commitment to Learning

The scale has been taken from Sinkula, Baker and Noordewier (1997) and measures the extent to which learning is considered to be instrumental for the future of an organisation. The measure consists of the following four items:

- Managers agree that our firm's ability to learn is the key to our competitive advantage (ABILEARN)
- The basic values of our firm include learning as key to improvement (LEARNKEY)
- The sense around here is that employee learning is an investment not an expense (LEARNEMP)
- Learning in our organisation is seen as necessary to guarantee organisational survival (LEARSURV)

The scale is highly reliable ( $\alpha = 0.91$ ). The computation of the scale's reliability (internal consistency) is shown below:

**Table 5.24: Reliability analysis - Commitment to learning scale (alpha)**

*Correlation Matrix*

	ABILEARN	LEARNKEY	LEARNEMP	LEARSURV		
ABILEARN	1.0000					
LEARNKEY	.7876	1.0000				
LEARNEMP	.6517	.8061	1.0000			
LEARSURV	.6835	.7571	.7720	1.0000		
Statistics for Scale	Mean 19.2485	Variance 25.6522	Std Dev 5.0648	Variables 4		
Item Means	Mean 4.8121	Minimum 4.7101	Maximum 4.9704	Range .2604	Max/Min 1.0553	Variance .0137

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
ABILEARN	14.2781	15.2020	.7648	.6390	.9130
LEARNKEY	14.4201	14.6260	.8757	.7773	.8760
LEARNEMP	14.5385	14.4524	.8158	.7118	.8962
LEARSURV	14.5089	14.9776	.8091	.6645	.8981

Reliability Coefficients (4 items)

Alpha = .9199      Standardized item alpha = .9204

Furthermore, factor analysis (principal axis factoring) revealed a single factor that explains 80.7% of the variance involved and suggests a unidimensional scale.

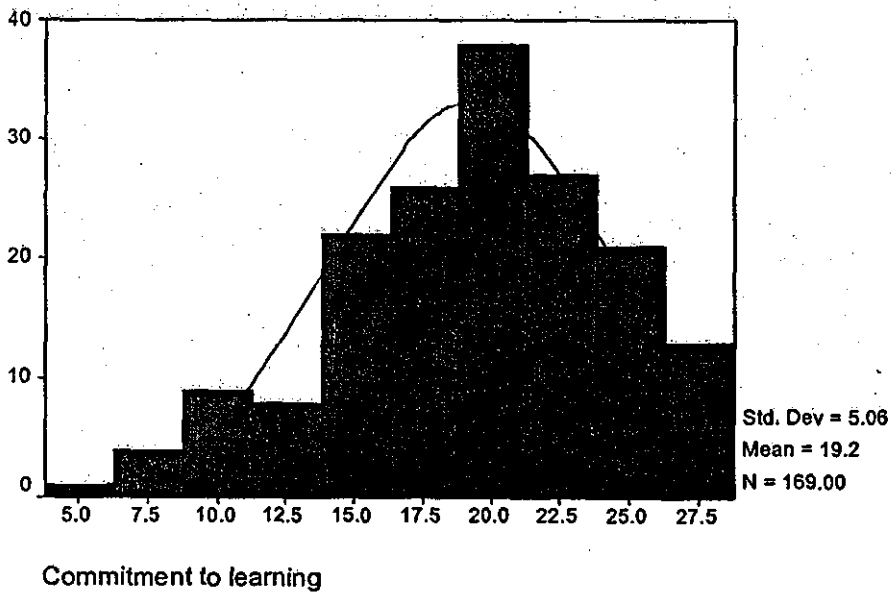
The computation of the descriptive statistics shown in table 5.25 below is based on 169 cases (two are missing). While the mean (19.2) almost equals the median (20.0) the distribution seems to have a slight negative skewness.

**Table 5.25: Commitment to learning**

N	Valid	169
	Missing	2
Mean		19.248
Median		20.000
Std. Deviation		5.064
Variance		25.652
Minimum		4.0
Maximum		28.0

It is also worth noting that according to the relevant cumulative frequencies of the current and the previous measure (capturing the construct of future-oriented culture), about 48% of exporters admit to be on average committed to learning and also future-oriented. Such finding is hardly surprising as one would expect a forward-looking organisation to be interested in advancing itself through learning. The K-S test statistic is non-significant ( $z=1.11$ ,  $p=0.16$ , 2-tailed), which shows that a *normal* curve can sufficiently describe the distribution of the data (see figure 5.14).

**Figure 5.14: Commitment to learning**





### 5.3.7 Export market orientation

This measure was adopted from Deshpande and Farley (1996) who called it the summary scale for market orientation. The scale's emphasis is on customers rather intelligence generation about competitors and consists of the following items:

- Our export objectives are primarily driven by customer satisfaction (OBJCUSAT)
- We constantly monitor our level of commitment and orientation to serving export customer needs (COMICUS)
- We freely communicate information about our successful and unsuccessful competitor experiences across all business functions (COMPINFO)
- Our strategy for competitive advantage is based on our understanding of export customers' needs (UNDERCUS)
- We measure export customer satisfaction systematically and frequently (MESCUSAT)
- We have routine or regular measures of customer service (MESCUSRV)
- We are more customer focused than our export competitors (CUSFOCOM)
- We believe this business exists primarily to serve customers (BELCUSRV)
- We poll end-users at least once a year to assess the quality of our products and services (USERQUAL)
- Data on export customer satisfaction are disseminated at all levels in this business unit on a regular basis (DATADISS)

Given that the measure was found to be unidimensional in a different research context, it was thought that it makes more sense to establish first whether this scale is reliable in the export context of this study and then examine the measure's unidimensionality. Remember a similar rationale concerning the testing for reliability and unidimensionality was adopted earlier (e.g. see section 5.1.2). The computation of reliability (inter-item and item scale correlations) is shown below:

**Table 5.26: Reliability analysis – Export market orientation scale (alpha)**

*Correlation Matrix*

	OBJCUSAT	COMICUS	COMPINFO	UNDERCUS	MESCUSAT
OBJCUSAT	1.0000				
COMICUS	.5729	1.0000			
COMPINFO	.3183	.4125	1.0000		
UNDERCUS	.4892	.4913	.2837	1.0000	
MESCUSAT	.5203	.5999	.2906	.5003	1.0000
MESCUSRV	.3722	.5398	.3114	.3308	.6905
CUSFOCOM	.3360	.4020	.3130	.4699	.4281
BELCUSRV	.3809	.3573	.2504	.2523	.3092
USERQUAL	.3383	.3572	.2287	.2727	.4568
DATADISS	.2728	.3400	.2194	.2359	.4693

	MESCUSRV	CUSFOCOM	BELCUSRV	USERQUAL	DATADISS
MESCUSRV	1.0000				
CUSFOCOM	.4463	1.0000			
BELCUSRV	.3288	.2529	1.0000		
USERQUAL	.4364	.2753	.2356	1.0000	
DATADISS	.4708	.2958	.3729	.6345	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	29.9699	50.9991	7.1414	10

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	2.9970	2.0542	3.7590	1.7048	1.8299	.2969

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
OBJCUSAT	26.5602	42.3691	.5972	.4474	.8448
COMICUS	26.7831	40.3406	.6858	.5263	.8366
COMPINFO	26.8554	43.7002	.4259	.2142	.8587
UNDERCUS	26.2108	43.3795	.5474	.4085	.8488
MESCUSAT	27.2771	39.6440	.7241	.6223	.8329
MESCUSRV	27.0843	39.5201	.6632	.5590	.8382
CUSFOCOM	26.7530	42.3568	.5287	.3343	.8502
BELCUSRV	26.5241	43.1721	.4435	.2535	.8577
USERQUAL	27.9157	42.2231	.5313	.4547	.8500
DATADISS	27.7651	42.8111	.5535	.4943	.8481

### Reliability Coefficients (10 items)

Alpha = .8600      Standardized item alpha = .8604

It is obvious from above that this is a very reliable internally consistent scale. However, the factor analysis (principal axis factoring) used to examine the scale's unidimensionality produced two factors, the first of which explains 45% and the second factor, 11.3% of the existing variance in the data. To conclude on the unidimensionality (or not) of the scale, closer attention was paid to the respective items loading in the second factor (i.e. the rotated factor matrix was examined). The examination aimed to identify the existence of any distinct underlying construct that would imply absence of unidimensionality for this scale. Yet, *no* such construct was evident. Therefore, it was decided to test whether it was possible for all items to load high (>.30) in a single factor (Hair et al, 1998); this would ensure that the scale is unidimensional. Indeed, this proved to be the case and the resulting single factor solution explained 45% of the variance involved. The descriptive statistics for this scale are shown in table 5.27 below:

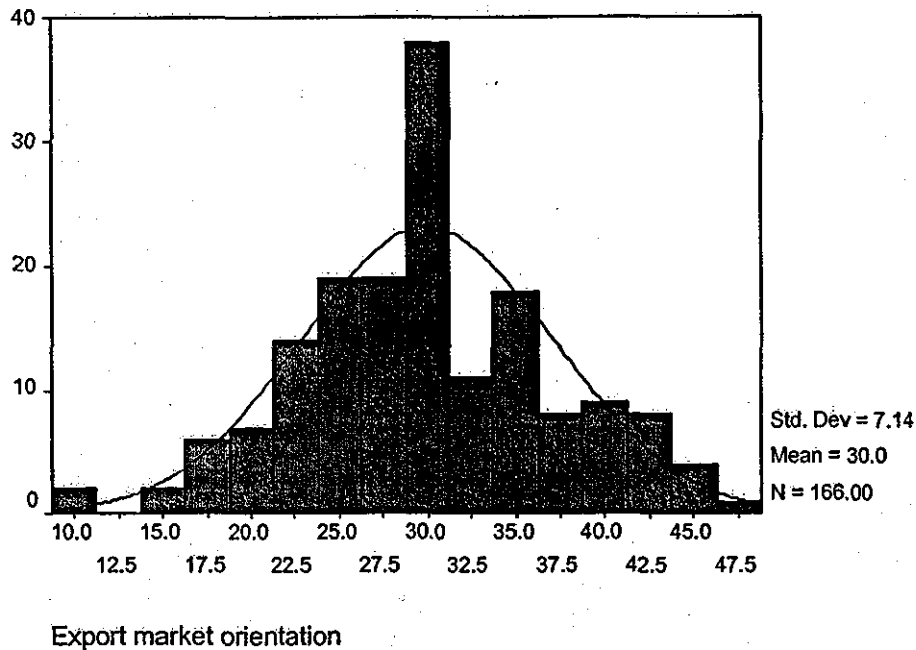
**Table 5.27: Export market orientation**

N	Valid	166
	Missing	5
Mean		29.969
Median		30.000
Std. Deviation		7.1414
Variance		50.9991
Minimum		10.0
Maximum		48.0

It is worth noting that in a total of 166 cases where the minimum value is 10 and the maximum is 48, the variance is more than 50 (standard deviation of 7.1) showing the diversity of export firms in terms of the degree of their market orientation and the scale's ability to differentiate among them. Furthermore, the mean and median are quite close to each other. The hypothesis tested by applying the K-S test is that a normal distribution is able to describe the data. Indeed the resulting statistic in non-

significant ( $z=1.12$ ,  $p=0.16$ , 2-tailed) meaning that it can be safely assumed that the data are distributed normally. This is demonstrated in figure 5.15.

**Figure 5.15: Export market orientation**



## 5.4 ENVIRONMENTAL CHARACTERISTICS

### 5.4.1 Environmental Uncertainty

This measure of environmental uncertainty has been used before by Canesan (1994), Kumar, Scheer and Steenkamp (1995), Celly and Frazier (1996). It consists of nine items measuring the degree of market volatility and unpredictability in the context of making decisions. The scale includes the following set of items:

- It is a slowly changing environment (SLOWENV)
- It is a stable environment (STABLENV)
- It is a certain environment (CERTENV)
- It is easy to monitor trends (EASYMONI)
- Export sales forecasts are quite accurate (SLSFORCA)

- It is a predictable environment (PREDIENV)
- It is a complex environment (CMPLXENV)
- There is sufficient information for export marketing decisions (INFMRKDE)
- The environment is full of surprises (SURPRENV)

Note that seven out of the nine items of this measure have been coded reversely (i.e. the two items excluded from reverse coding are “it is a complex environment” and “the environment is full of surprises”).

All the multi-item scales discussed above and this particular scale have been already tested in different research contexts and were found to be unidimensional. Without claiming that this is definitely going to be the case in this study’s research context, it was considered more sensible to determine the reliability (internal consistency) of this scale in exporting (i.e. in this study’s context) before testing for the scale’s dimensionality. Remember the same rationale has been adopted for all the multi-item measures used through out this chapter (e.g. see section 5.1.2). The outcome of the procedure used for scale development (relevant correlations etc.) is shown below before the presentation of the descriptive findings for the construct at hand.

It is obvious that the nine-item scale has high inter-item correlations and it is internally consistent. The corrected item total correlations (De Vellis, 1991) revealed that the scale’s reliability is at an acceptable level (cronbach  $\alpha = 0.78$ ) (see Nunnally, 1978), while no item elimination would improve the coefficient alpha, substantially.

**Table 5.28: Reliability analysis – Export market orientation scale (alpha)**

	Mean	Std Dev	Cases
1. SLOWENV	4.3697	1.7434	165.0
2. STABLENV	5.2121	1.4766	165.0
3. CERTENV	5.5091	1.3864	165.0
4. EASYMONI	5.1515	1.4211	165.0
5. SLSFORCA	4.8788	1.5491	165.0
6. PREDIENV	5.4121	1.4228	165.0
7. CMPLXENV	5.5636	1.5629	165.0
8. INFMRKDE	4.2242	1.5156	165.0
9. SURPRENV	4.9030	1.7364	165.0

*Correlation Matrix*

	SLOWENV	STABLENV	CERTENV	EASYMONI	SLSFORCA
SLOWENV	1.0000				
STABLENV	.3081	1.0000			
CERTENV	.2647	.6230	1.0000		
EASYMONI	.2111	.2781	.4465	1.0000	
SLSFORCA	.0031	.2779	.3355	.3851	1.0000
PREDIENV	.1767	.4428	.5050	.5841	.5263
CMPLXENV	.1446	.1830	.2185	.1864	.2122
INFMRKDE	.0584	.2129	.2355	.2559	.2376
SURPRENV	.2738	.3363	.3347	.4458	.3107

	PREDIENV	CMPLXENV	INFMRKDE	SURPRENV
PREDIENV	1.0000			
CMPLXENV	.2761	1.0000		
INFMRKDE	.1690	.0235	1.0000	
SURPRENV	.5568	.3753	.0987	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	45.2242	69.7116	8.3493	9

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.0249	4.2242	5.5636	1.3394	1.3171	.2290

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
SLOWENV	40.8545	59.1129	.2820	.1636	.7890
STABLENV	40.0121	55.5730	.5432	.4490	.7488
CERTENV	39.7152	55.2171	.6102	.4930	.7410
EASYMONI	40.0727	55.5313	.5742	.4271	.7452
SLSFORCA	40.3455	56.7519	.4524	.3262	.7614
PREDIENV	39.8121	53.5681	.6779	.5695	.7308
CMPLXENV	39.6606	59.4573	.3241	.1620	.7796
INFMRKDE	41.0000	61.5854	.2451	.1173	.7895
SURPRENV	40.3212	52.5242	.5631	.4069	.7441

Reliability Coefficients (9 items)

Alpha = .7806      Standardized item alpha = .7878

Subsequently, the scale's unidimensionality was assessed by factor analysis (principal axis factoring). If the scale is unidimensional then all the scale's items should share one common factor. However, the analysis resulted into three factors explaining in total, 63.3% of the variance (the scree test plots the amount of variance explained by each successive factor; the dominant first factor explains 39% while the rest are found to be near to where the scree plot flattens). In view of the three-factor solution, the scale is not unidimensional in the context of this study.

Further examination of the scale's items shows that the scale is composed of two distinct groups of items that share common characteristics. The first group contains six items (see below) and captures the external environment (market volatility) as perceived by the export firm; the second group contains the remaining three items and reflects the ability of the firm to predict and make decisions in this environment. These two distinct groups of scale items were named "Environmental uncertainty (External)" and "Environmental uncertainty (Internal)" respectively. To examine whether these two groups constitute two separate sub-scales that measure different construct dimensions, a separate reliability analysis was performed.

The result showed an acceptable level for the co-efficient alpha ( $\alpha = 0.74$ ) for the six-item scale (External). In contrast, the reliability of the three-item scale (Internal) was quite low ( $\alpha = 0.57$ ) in comparison to the 0.70 level recommended (Hair et al, 1998). In light of these reliability results and the fact that both scales correlate with each other ( $r = .513$ ,  $p = .000$ , 2-tailed), the scale called Internal was dropped and the External scale was maintained as a measure of environmental uncertainty. The *new* reduced six-item scale is the following:

- It is a slowly changing environment (SLOWENV)
- It is a stable environment (STABLENV)
- It is a certain environment (CERTENV)
- It is a predictable environment (PREDIENV)
- It is a complex environment (CMPLXENV)
- The environment is full of surprises (SURPRENV)

Principal axis factoring was used once again to test for the unidimensionality of this six-item scale. The scale is found to be unidimensional; indeed, all six items load into a single factor explaining 45.6% of the variance.

Having already dealt with the reliability and unidimensionality aspects of this *reduced* scale, table 5.29 presents the scale's descriptive statistics (frequencies) based on 165 cases (there are six missing values).

**Table 5.29: Environmental uncertainty**

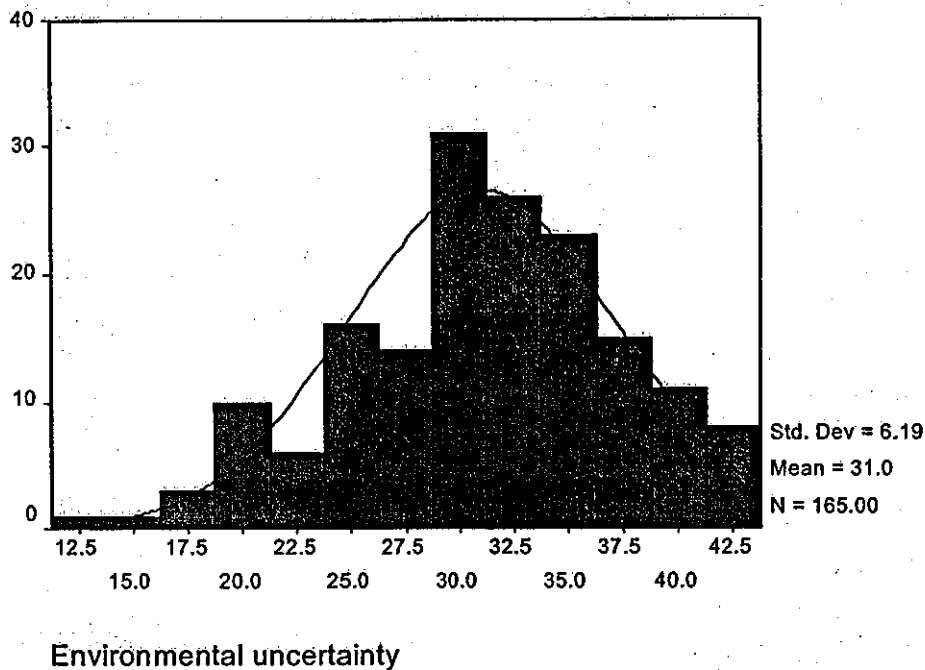
N	Valid	165
	Missing	6
Mean		30.969
Median		32.000
Std. Deviation		6.193
Variance		38.358
Minimum		13.0
Maximum		42.0

The scale measuring environmental uncertainty has a minimum value of 13 and a maximum of 42; the mean value (30.9) is slightly smaller than the median (32.0) showing that the distribution is slightly negatively skewed. This scale's variance is quite high reflecting the fact that a range of different responses has been captured. This indicates the ability of the scale to discriminate among respondents of a diverse sample with different levels of the construct being measured (De Vellis, 1991).

It is a requirement for a variable to assume a normally distributed curve before proceeding to any further analysis with parametric statistical tests. Thus, the scale was also examined for normality. The null hypothesis tested with the K-S test assumes that no difference exists from the theoretical normal curve. The resulting statistic is non-significant ( $z=.92$ ,  $p=.36$ , 2-tailed) which suggests that there is "goodness of fit" in the distribution of the data. Indeed the distribution does not deviate much from *normality* as the frequency graph in figure 5.16 demonstrates.



**Figure 5.16: Environmental uncertainty**



The presentation now focuses on the performance-related variables of the framework.

## **5.5 PERFORMANCE RELATED CHARACTERISTICS**

### **5.5.1 Performance Orientation**

This profile variable (Law et al, 1998) reflects three distinct types of performance orientation export firms may adopt (see section 4.5.3.5). In fact respondents were asked to indicate the importance their firms attach to efficiency, effectiveness and adaptiveness orientations respectively where each orientation is represented by a description. The three statements are the following:

- The achieved output goals (e.g. shareholder value, profitability) relative to the inputs used to achieve them (e.g. time, cost, manpower).
- The achieved output goals (e.g. customer satisfaction, export sales) relative to expectations (as reflected in export plans).

The firm's ability to adapt to the changing demands of the environment (e.g. new export market entry, new product introduction).

Remember from section 4.5.3.5, that the three statements' scores are not added/combined to capture this multidimensional construct. In this context, the above measure is not examined in terms of unidimensionality (i.e. the existence of a single construct underlying the set of items) and internal consistency reliability. While the measuring items of an internally consistent scale must be highly correlated, this does not have to be the case here (see relevant discussion about trade-offs between performance dimensions in section 2.6).

Table 5.30 includes the descriptive statistics for each of the three statements mentioned above. Only two respondents failed to reply. Among 169 cases, the Effectiveness and Adaptiveness orientations have the same mean values (5.3) and the same median values (5.0). Both means are higher than their respective medians, showing that both distributions are positively skewed (standard deviations 1.3 and 1.2 respectively).

**Table 5.30: Performance orientation**

		Efficiency	Effectiveness	Adaptiveness
N	Valid	169	169	169
	Missing	2	2	2
Mean		5.266	5.313	5.355
Median		6.000	5.000	5.000
Std. Deviation		1.441	1.363	1.231
Variance		2.077	1.859	1.516
Minimum		1.0	1.0	1.0
Maximum		7.0	7.0	7.0

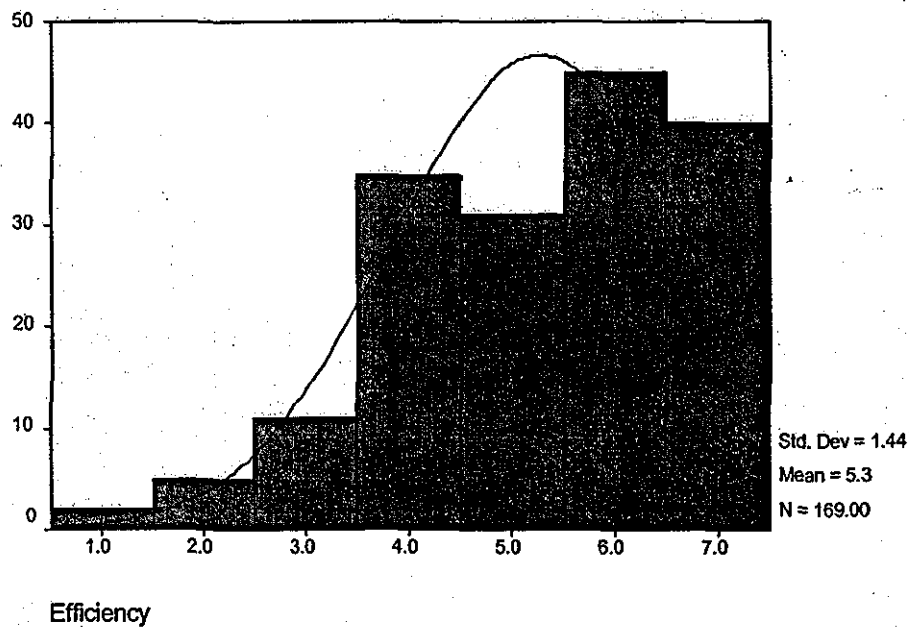
On the contrary, the mean for the efficiency orientation (5.2) is smaller than the median (6.0) suggesting a negatively skewed distribution (standard deviation 1.4). Normality was tested with the K-S test. The statistics for all three statements proved to be highly significant (see results in table 5.31) suggesting that the respective distributions are other than normal.

**Table 5.31: Normality testing**

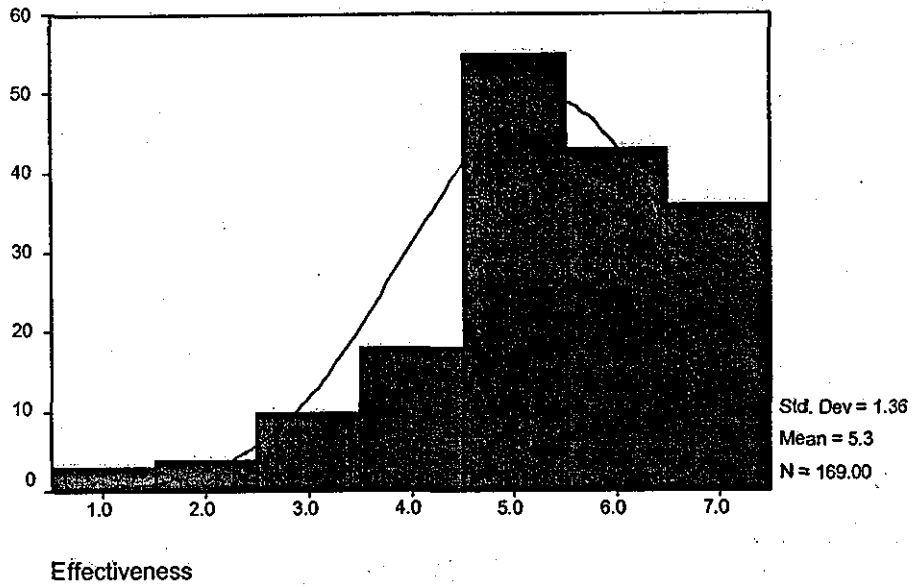
Orientation	Kolmogorov-Smirnov test
Efficiency	$Z=2.56, p=.000, 2\text{-tailed}$
Effectiveness	$Z=2.62, p=.000, 2\text{-tailed}$
Adaptiveness	$Z=2.17, p=.000, 2\text{-tailed}$

The absence of normality is evident in the following figures.

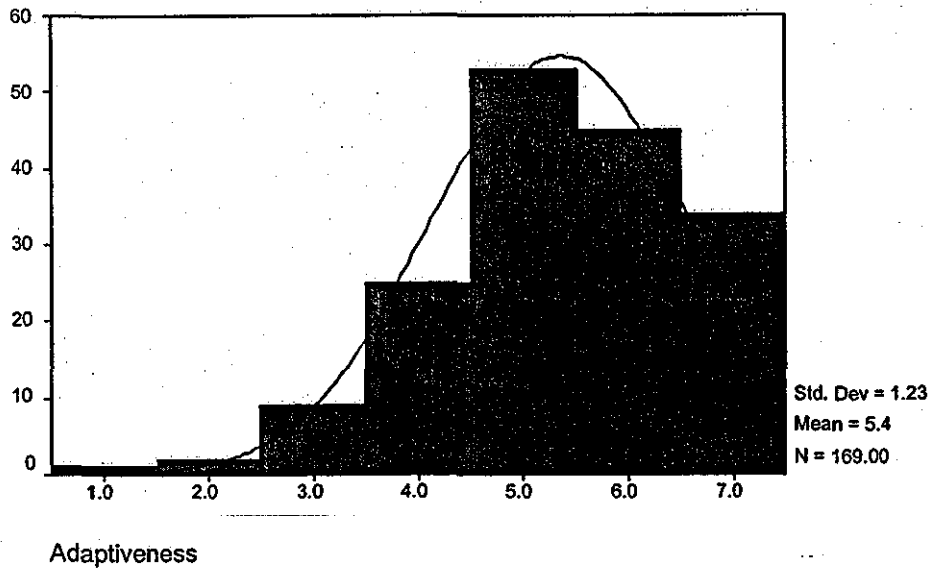
**Figure 5.17: Efficiency distribution**



**Figure 5.18: Effectiveness distribution**



**Figure 5.19: Adaptiveness distribution**



### 5.5.2 Performance Documentation

This four-item, seven-point Likert scale was adopted from Jaworski and McInnis (1989). Specifically, export managers were asked to use this scale to report which of

the following statements describe better the situation in their firms in terms of whether the existing forms of documentation adequately help the assessment of export performance.

- Documents exist to measure our firms export performance after activities are complete.
- Our export performance can be adequately assessed using existing documents.
- Documents exist to assess our firm's export performance on most of our activities.
- Information about how our firm's export performance will be evaluated has been communicated to personnel involved in export operations.

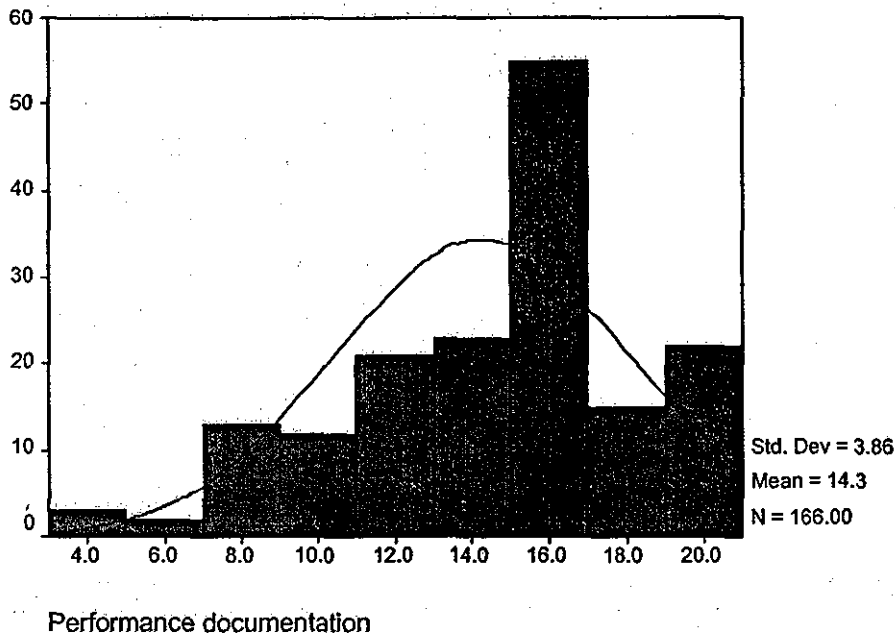
The corrected item total correlations are high indicating an internally consistent measure the coefficient of which shows that the reliability is at an acceptable level ( $\alpha = 0.87$ ). The measure was factor analysed using principal axis factoring in order to determine whether it is unidimensional. The analysis led to a single factor solution explaining 74.5% of variance. The descriptive statistics for this scale are summarised below. Given that the mean value (14.2) is slightly smaller than the median (15.0) the distribution seems to have negative skewness (standard deviation 3.8).

**Table 5.32: Performance documentation**

N	Valid	166
	Missing	5
Mean		14.253
Median		15.000
Std. Deviation		3.860
Variance		14.905
Minimum		4.0
Maximum		20.0

The K-S test statistic is highly significant ( $z=1.93$ ,  $p=0.001$ , 2-tailed) meaning that a goodness of fit with a normal distribution is unlikely (see curve superimposed on the relevant histogram in figure 5.20).

**Figure 5.20: Performance documentation distribution**



### **5.5.3 Satisfaction with the attainment of the export objectives**

Following the determination of the relative importance of export objectives and the emphases on the frame of reference and time frame used to translate them into export indicators (see framework in Figure 3.1), respondents were asked to indicate their satisfaction with the attainment of each of the export sales, export profit and NPI objectives respectively. This is to facilitate the computation of the export success index proposed in the conceptualisation stage (see section 3.3). Bear in mind that the satisfaction measure captures a profile multidimensional construct (Law et al, 1998). Remember from section 4.5.3.5 that the scores obtained from each of the three statements are not added/combined. In this context, the standard procedures used to examine unidimensionality (i.e. the existence of a single construct underlying a set of items) and reliability, have not been applied here (see also section 5.5.1). The results of the managerial satisfaction with the attainment of each objective are shown below.

**Table 5.33: Satisfaction with the attainment of the Export objectives**

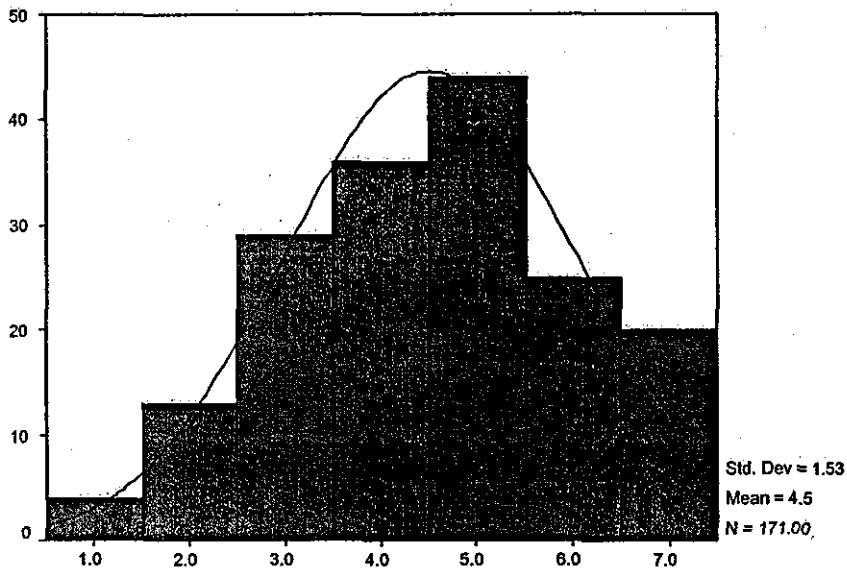
		Satisfaction with Export Sales	Satisfaction with Export Profitability	Satisfaction with NPI
N	Valid	171	171	168
	Missing	0	0	3
Mean		4.508	4.280	3.642
Median		5.000	4.000	3.500
Std. Deviation		1.527	1.507	1.544
Variance		2.333	2.273	2.386
Minimum		1.0	1.0	1.0
Maximum		7.0	7.0	7.0

Despite that all respondents answered the first two statements, the third one has three missing values (lack of new product development and launching might be the reason). Overall, new product introduction corresponds to the lowest satisfaction reported (mean score 3.6), while satisfaction expressed for the export sales' attainment is the highest among the three (4.5). The K-S test results are shown below (see table 5.34). The resulting statistics are highly significant showing clearly a lack of normality in the relevant distributions. This is also displayed below (see figures 5.21, 5.22, 5.23).

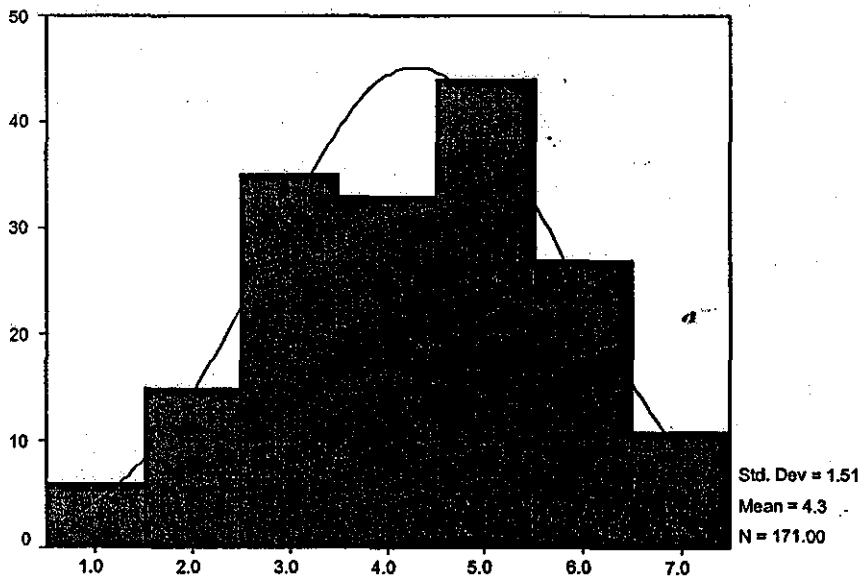
**Table 5.34: Testing for normality**

Satisfaction with Export objectives	Kolmogorov-Smirnov (K-S) test
Satisfaction with Export Sales	<i>Z=1.91, p=.001, 2-tailed</i>
Satisfaction with Export Profitability	<i>Z=2.13, p=.000, 2-tailed</i>
Satisfaction with New Product Introduction	<i>Z=2.09, p=.000, 2-tailed</i>

**Figure 5.21: Satisfaction with Export sales**

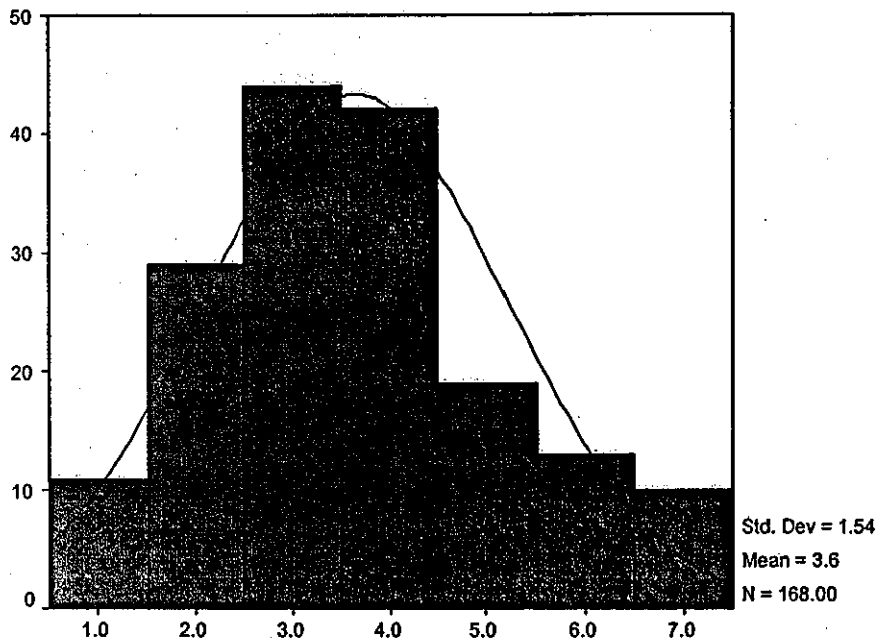


**Figure 5.22: Satisfaction with Export profitability**





**Figure 5.23: Satisfaction with NPI**



Having completed the descriptive analysis of all the contextual factors included in the conceptual framework, the analysis now focuses on two additional measures used.

## **5.6 MEASURES USED FOR VALIDATION**

### **5.6.1 The excellence in business (EXCEL) measure**

The excellence in business (EXCEL) is a fourteen-item measure used here for validation purposes. It has been adapted from a sixteen-item scale measuring several *managerial principles and practices claimed to be necessary (but not sufficient) prerequisites to an excellent business performance*. The scale of excellence in business (EXCEL) was developed by Sharma, et al. (1990) and corresponds to eight company attributes of excellence (i.e. those that excellent firms should have) that have been initially suggested by Peters and Waterman (1982). Two items of the original sixteen-item scale have not been included (see section 4.5.3.6). Specifically, the item pertinent to innovation (“our firm’s top management encourages creativity and innovativeness”) was placed along with the rest of the items that constitute the

measure of innovativeness as described in section 5.3.2. The second item was similar to the item used in the measure of risk orientation described in section 5.3.4 (“our management provides enough incentives to work on new ideas despite the uncertainty of their outcomes”) and thus, was dropped altogether from Excel.

- Our firm has a small staff that delegates authority efficiently (DELEGAUT)
- Our firm's top level management believes that its people are of the utmost importance to the company (PEOPLIMP)
- Our firm instils a value system in all its employees (VALUESYS)
- Our firm provides personalised attention to all its customers (PERSATTE)
- Our firm's values are the driving force behind its operation (VALUDRIV)
- Our firm is flexible and quick to respond to problems (QUICKRES)
- Our firm concentrates in product areas where it has a high level of skill and expertise (HIEXPERT)
- Our firm has a small but efficient management team (EFFIMGT)
- Our company develops products that are natural extensions of its product line (NPDLINE)
- Our firm truly believes in its people (BELIPEOP)
- Our firm considers after-sales service just as important as making the sale (AFTERSAL)
- Our firm believes in experimenting with new products and ideas (EXPERIME)
- Our firm believes that listening to what consumers have to say is a good skill to have (LISCONSU)
- Our firm is flexible with employees but administers discipline when necessary (DISCIPEM)

The scale is internally consistent as reflected by the high reliability coefficient ( $\alpha = 0.89$ ). The inter-item and item scale correlations are shown in table 5.35 below.

**Table 5.35: Reliability analysis - Excellence in business (EXCEL) Scale (alpha)**

*Correlation Matrix*

	DELEGAUT	PEOPLIMP	VALUESYS	PERSATTE	VALUDRIV
DELEGAUT	1.0000				
PEOPLIMP	.4450	1.0000			
VALUESYS	.4586	.7081	1.0000		
PERSATTE	.3439	.3254	.3388	1.0000	
VALUDRIV	.3920	.5403	.5745	.5632	1.0000
QUICKRES	.4382	.3849	.3748	.5533	.5178
HIEXPERT	.2027	.2139	.2832	.3122	.3087
EFFIMGT	.5604	.5176	.4160	.3445	.4716
NPDLINE	.1222	.1342	.1248	.3109	.2312
BELIPEOP	.4831	.8257	.7101	.4160	.5849
AFTERSAL	.2980	.4562	.3369	.4990	.5388
EXPERIME	.1508	.2902	.4182	.3829	.3941
LISCONSU	.3822	.4915	.3900	.4820	.5114
DISCIPEM	.4216	.4940	.4576	.3033	.3405

	QUICKRES	HIEXPERT	EFFIMGT	NPDLINE	BELIPEOP
QUICKRES	1.0000				
HIEXPERT	.2354	1.0000			
EFFIMGT	.4922	.2732	1.0000		
NPDLINE	.2876	.2854	.0754	1.0000	
BELIPEOP	.4790	.2421	.5921	.1736	1.0000
AFTERSAL	.5583	.3707	.4436	.2772	.5336
EXPERIME	.3720	.1937	.1371	.2628	.3859
LISCONSU	.4749	.3843	.4021	.3610	.5492
DISCIPEM	.3476	.1431	.4028	.1389	.5725

	AFTERSAL	EXPERIME	LISCONSU	DISCIPEM
AFTERSAL	1.0000			
EXPERIME	.3005	1.0000		
LISCONSU	.5040	.4531	1.0000	
DISCIPEM	.2798	.2351	.4232	1.0000

Statistics for Scale	Mean	Variance	Std Dev	Variables
	72.3353	175.6459	13.2531	14

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	5.1668	4.4611	5.7844	1.3234	1.2966	.1517

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
DELEGAUT	67.6946	152.4423	.5506	.4280	.8947
PEOPLIMP	67.1976	147.6294	.6956	.7276	.8882
VALUESYS	67.8743	149.1226	.6647	.6531	.8896
PERSATTE	66.9222	153.7469	.6021	.4665	.8924
VALUDRIV	67.4371	150.3680	.7074	.5591	.8883
QUICKRES	67.2515	147.9484	.6478	.5124	.8904
HIEXPERT	66.5509	162.2971	.3883	.2689	.9001
EFFIMGT	67.2635	151.1229	.6062	.5220	.8922
NPDLINE	66.6407	164.5689	.3093	.2116	.9027
BELIPEOP	67.4431	144.2362	.7893	.7872	.8839
AFTERSAL	66.8443	150.1081	.6293	.5097	.8912
EXPERIME	67.3533	155.9407	.4527	.3659	.8989
LISCONSU	66.7545	152.7767	.6816	.5257	.8897
DISCIPEM	67.1317	154.3440	.5347	.3822	.8952

Reliability Coefficients (14 items)

Alpha = .8997      Standardized item alpha = .8983

With regards to the scale's unidimensionality, the factor analysis (principal axis factoring) undertaken, pointed out two factors the first of which explains 44.48% of the variance and the second, 10.53%. Despite the fact that this scale has been culled from the literature, it lacks unidimensionality in the context of this study. Such result is not surprising as the items of the scale refer to heterogeneous aspects of excellence. Specifically, a closer examination of the analysis output reveals two distinct aspects for the scale. Six items load high on the first factor reflecting mainly a people/values perspective of the firm; the remaining eight items mainly reflect a product/customer perspective of the firm, which is described by the second factor (see table 5.36). This clear distinction required further investigation.

**Table 5.36: Rotated factor matrix\***

	<i>Factors</i>	
	<i>1</i>	<i>2</i>
Firm believes in its people	.870	.295
Employees are of utmost importance for the firm	.842	.191
Firm instils a value system in all employees	.733	.234
Firm has a small, efficient management team	.594	.294
Firm is flexible but also firm with its employees	.568	.208
Small staff with efficient delegation of authority	.544	.256
Firm's values drive operations	.511	.536
New products continue existing product lines	-.001	.492
Firm offers personal attention to customers	.260	.681
Firm believes in listening to consumers	.408	.614
After-sales service is as important as the sale	.361	.608
Firm's flexibility and quick response to problems	.374	.609
Products reflect only the firm's expertise	.162	.438
Firm's belief in new product/idea experimentation	.248	.452

\*Extraction method: Principle axis factoring, Rotation method: Varimax with Kaiser normalization.

The fourteen-item measure was split into two groups of items. These groups were examined separately in terms of their potential to constitute two different measures. The first group (the six items of which mainly relate to a firm's people and values) was called EXCEL (People/Values); the second group includes the remaining eight items (referring mainly to aspects of a firm's products and customers) and was called EXCEL (Product/Customers). Subsequently, the two sub-scales' reliability (internal consistency) was tested separately. This is shown below.

**Table 5.37: Reliability analysis - EXCEL (People/Values) Scale (alpha)**

*Correlation Matrix*

	BELIPEOP	DELEGAUT	PEOPLIMP	VALUESYS	EFFIMGT
BELIPEOP	1.0000				
DELEGAUT	.4850	1.0000			
PEOPLIMP	.8260	.4465	1.0000		
VALUESYS	.7074	.4558	.7062	1.0000	
EFFIMGT	.5932	.5617	.5186	.4143	1.0000
DISCIPEM	.5735	.4232	.4950	.4561	.4040
Statistics for Scale	Mean 9.4345	Variance 49.9837	Std. Dev. 7.0699	Variables 6	Cases 168

Item Means	Mean	Minimum	Maximum	Range	Max/Min	Variance
	4.9058	4.4583	5.2083	.7500	1.1682	.0887

*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
BELIPEOP	24.5357	33.0526	.8289	.7622	.8269
DELEGAUT	24.7857	36.7562	.5854	.3947	.8698
PEOPLIMP	24.2917	34.0521	.7695	.7135	.8379
VALUESYS	24.9762	35.4366	.6937	.5647	.8512
EFFIMGT	24.3571	36.5423	.6215	.4565	.8634
DISCIPEM	24.2262	37.6252	.5805	.3586	.8697

Reliability Coefficients (6 items)

Alpha = .8752

Standardized item alpha = .8747

Indeed the EXCEL (People/Values) was found to be a reliable (internally consistent) scale ( $\alpha = 0.88$ ). The same procedure was applied to EXCEL (Product/Customers).

**Table 5.38: Reliability analysis - EXCEL (Product/Customers) Scale (alpha)**

*Correlation Matrix*

	VALUDRIV	PERSATTE	QUICKRES	HIEXPERT	NPDLINE
VALUDRIV	1.0000				
PERSATTE	.5721	1.0000			
QUICKRES	.5279	.5607	1.0000		
HIEXPERT	.3209	.3217	.2462	1.0000	
NPDLINE	.2459	.3211	.2984	.2945	1.0000
AFTERSAL	.5462	.5059	.5644	.3782	.2863
EXPERIME	.4084	.3941	.3836	.2061	.2750
LISCONSU	.5080	.4805	.4735	.3843	.3611

	AFTERSAL	EXPERIME	LISCONSU
AFTERSAL	1.0000		
EXPERIME	.3111	1.0000	
LISCONSU	.5028	.4516	1.0000

Statistics for Scale	Mean 43.0710	Variance 58.2925	Std. Dev. 7.6350	Variables 8	Cases 169
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Item Means	Mean 5.3839	Minimum 4.9231	Maximum 5.7988	Range .8757	Max/Min 1.1779	Variance .1099
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*Item-total Statistics*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VALUDRIV	38.1479	44.4601	.6589	.4726	.8115
PERSATTE	37.6391	44.5297	.6637	.4645	.8111
QUICKRES	37.9645	42.3797	.6410	.4627	.8134
HIEXPERT	37.2722	49.6398	.4250	.2247	.8389
NPDLINE	37.3609	49.7678	.4126	.1942	.8403
AFTERSAL	37.5621	43.2119	.6457	.4633	.8125
EXPERIME	38.0651	45.6803	.4914	.2781	.8342
LISCONSÜ	37.4852	45.4775	.6602	.4412	.8126

Reliability Coefficients (8 items)

Alpha = .8411

Standardized item alpha = .8407

The high correlation co-efficient reported above for the EXCEL (Product/Customers) scale indicates that this is a reliable (internally consistent) measure on its own. Moreover, there is a relationship between these two summated scales as indicated by the positive correlation shown in table 5.39.

**Table 5.39: Correlation between the two EXCEL scales**

	EXCEL (Product/Customers)
EXCEL (People/Values) Pearson Correlation	.637**
Sig. (2-tailed)	.000
N=168	N=169

\*\* Correlation is significant at the 0.01 level (2-tailed)

Further investigation of the scales' unidimensionality aimed to establish whether the two scales reflect two separate variables. The analysis was performed using the principal axis factoring method. The items of the EXCEL (People/Values) scale load

on a single factor explaining 62.01% of the observed variance; the items of the EXCEL (Product/Customer) scale also exhibit a single factor loading that explains 48.11% of the variance. Indeed, both sub-scales are unidimensional and capture different constructs. Moreover, the above correlation suggests that the percentage of the respondent firms placing an average emphasis on their employees and value systems are also likely to focus on products and customers. The two scales are described statistically in tables 5.40 and 5.41.

**Table 5.40: EXCEL (People/Values)**

<b>N</b>	<b>Valid</b>	168
	<b>Missing</b>	3
<b>Mean</b>		29.43
<b>Median</b>		30.00
<b>Std. Deviation</b>		7.06
<b>Variance</b>		49.98
<b>Minimum</b>		6.0
<b>Maximum</b>		42.0

**Table 5.41: EXCEL (Product/Customers)**

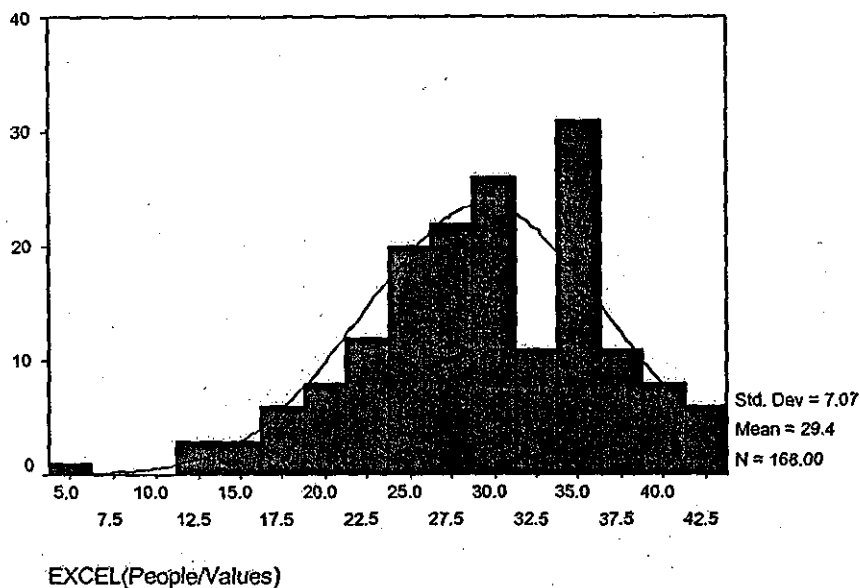
<b>N</b>	<b>Valid</b>	169
	<b>Missing</b>	2
<b>Mean</b>		43.07
<b>Median</b>		44.00
<b>Std. Deviation</b>		7.63
<b>Variance</b>		58.29
<b>Minimum</b>		16.0
<b>Maximum</b>		56.0

Both scales have their means very near to the corresponding median values. The mean values do not differ much either. Also, both measures show high variance indicating their ability to capture sufficiently different levels of business excellence.

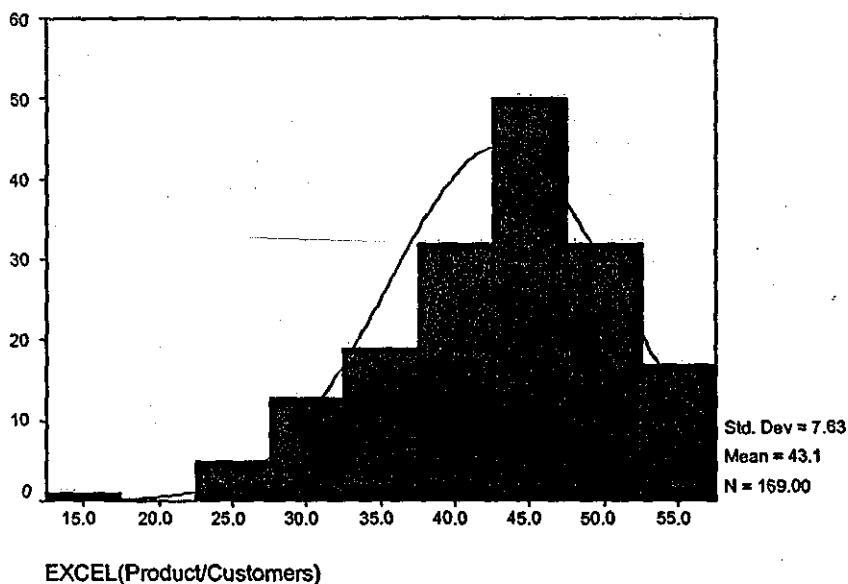


The K-S test used to examine the distribution of the EXCEL (People/Values) scale in relation to a normal distribution resulted in a non-significant statistic ( $z=.96$ ,  $p=.31$ , 2-tailed). This indicates “goodness of fit” with the normal curve. Similarly, there is a non-significant result for the EXCEL (Product/Customer) scale ( $z=1.18$ ,  $p=.12$ , 2-tailed). Hence, both scales satisfy assumptions of normality. This is also shown in the following figures 5.24 and 5.25.

**Figure 5.24: EXCEL (People/Values) distribution**



**Figure 5.25: EXCEL (Product/Customer) distribution**



### 5.6.2 Difficulty to complete the questionnaire (Response difficulty)

This measure captures the perceived effort to complete the questionnaire used to carry out the on-line survey. It consists of three statements each of which captures how difficult it has been to answer the questions asked in terms of effort, time and thought respectively; high scores on the seven-point itemised rating scale indicate higher difficulty in answering the questions asked. Yet, the three statements representing the perceived difficulty are not added/combined to capture an overall response difficulty. This multi-item measure captures a profile variable (a profile multidimensional construct, see section 4.5.3.6). Thus, this measure is not examined in terms of unidimensionality and reliability (see also section 5.5.1 above). Evidence relating to the quality of the instrument employed is shown in table 5.42 below.

**Table 5.42: Difficulty to complete the questionnaire (Response difficulty)**

		Response difficulty in terms of Effort	Response difficulty in terms of Time	Response difficulty in terms of Thought
N	Valid	169	169	169
	Missing	2	2	2
Mean		3.2130	3.5858	4.7929
Median		3.0000	4.0000	5.0000
Mode		4.00	4.00	5.00
Std. Deviation		1.55520	1.36497	1.29042
Minimum		1.00	1.00	1.00
Maximum		7.00	7.00	7.00

With respect to effort and time spent, the majority (more than 70%) of respondents did not face any more than a *moderate* difficulty to complete the questionnaire. In contrast, a cumulative 65% of the sample found the questionnaire to be more than moderately demanding in terms of thought. The results suggest that the study has employed a well thought out instrument that although *conceptually* challenging, it has *not* been very difficult to complete. By implication the questionnaire cannot be a genuine reason for non-response during the on-line data collection. The following

table shows the Kolmogorov-Smirnov (K-S) test results. The statistics are highly significant suggesting that the three variables are not normally distributed.

**Table 5.43: Testing for normality**

Difficulty to complete the questionnaire	K-S test results
Time	$Z=2.09, p=.000, 2\text{-tailed}$
Effort	$Z=2.28, p=.000, 2\text{-tailed}$
Thought	$Z=2.79, p=.000, 2\text{-tailed}$

Having completed so far the descriptive analysis for all the measures capturing the antecedent and demographic (profile) characteristics studied as well as those used for validation purposes, the next part of this chapter deals with the descriptive findings relating to the dependent variables.

## 5.7 THE EXPORT PERFORMANCE ASSESSMENT RELATED VARIABLES

The presentation now focuses on the study's multiple dependent variables relating to the assessment of export performance (see Figure 3.1). Specifically, these are: (i) the relative importance of the export objectives pursued, (ii) the relative emphasis on the frame of reference and (iii) the preference for the time horizon employed.

### 5.7.1 Relative importance of Export objectives

Three statements have been used to capture the *relative* importance the sample of respondents attributed to the three objectives compared namely, export sales, export profit and (NPI) new product introduction (see also section 4.5.3.1). These are:

In you firm what is the *relative* importance placed on the following export objectives?

- Export sales relative to export profits
- Export sales relative to new product introduction
- Export profits relative to new product introduction

Table 5.44 includes descriptive statistics for each of the former three statements.

**Table 5.44: The relative importance of export objectives**

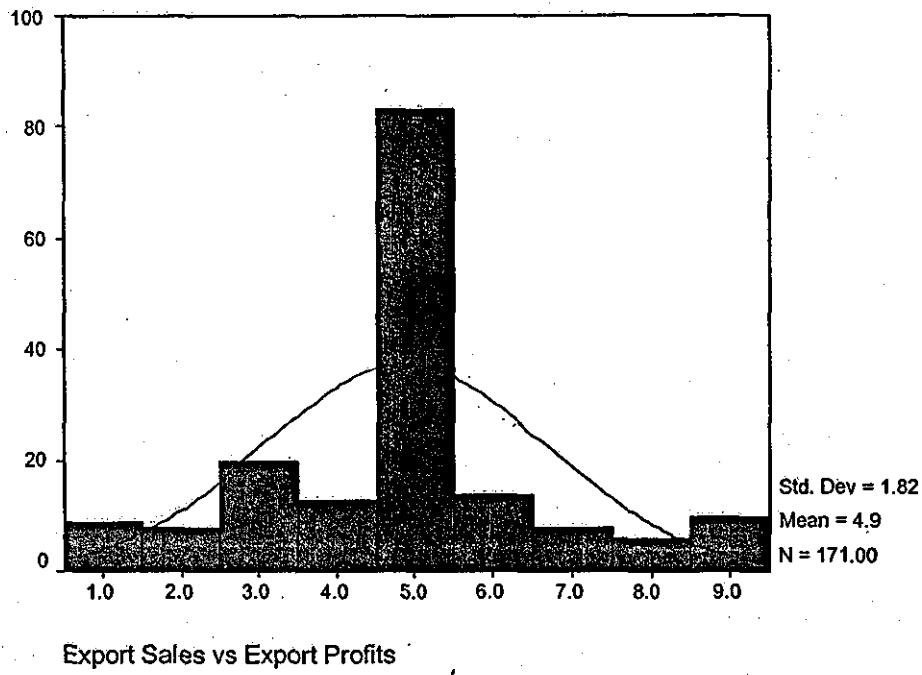
		Export Sales vs. Profit	Export Sales vs. NPI	Export Profit vs. NPI
N	Valid	171	171	171
	Missing	0	0	0
Mean		4.853	4.777	4.935
Median		5.000	5.000	5.000
Std. Deviation		1.823	1.878	2.142
Variance		3.325	3.526	4.590
Minimum		1.0	1.0	1.0
Maximum		9.0	9.0	9.0

Among 171 cases there are no missing values. Within a minimum value of 1 and maximum value of 9, all three statements' mean values are smaller than their respective medians and the respective K-S test statistics are highly significant (see table 5.45) thereby suggesting that it is unlikely for the relevant distributions to be described as normal (see relevant figures displaying the normal curve below).

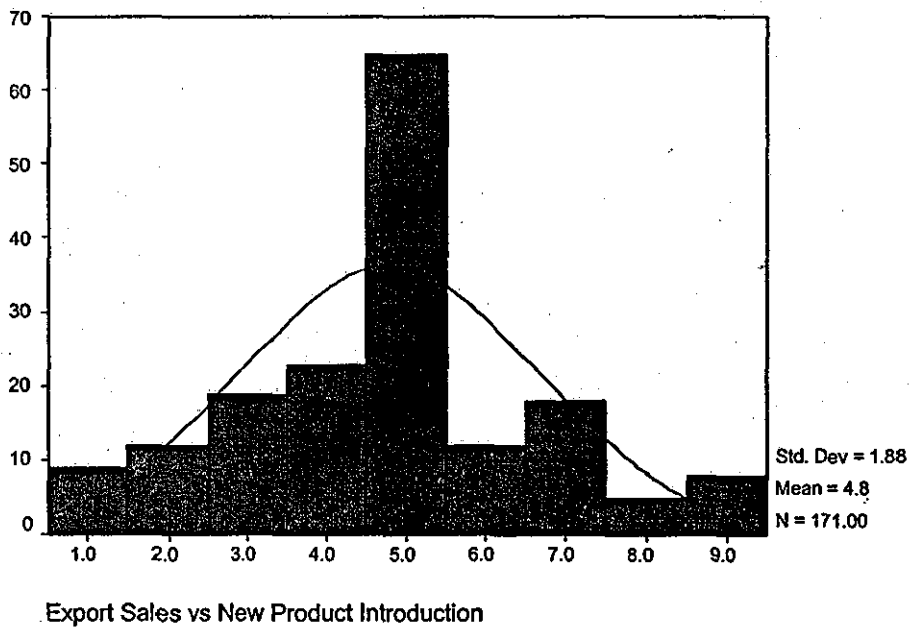
**Table 5.45: Testing for normality**

	One sample K-S test statistics
Export sales vs. Export profit	<i>Z=3.21, p=.000, 2-tailed</i>
Export sales vs. NPI	<i>Z=2.63, p=.000, 2-tailed</i>
Export profit vs. NPI	<i>Z=2.40, p=.000, 2-tailed</i>

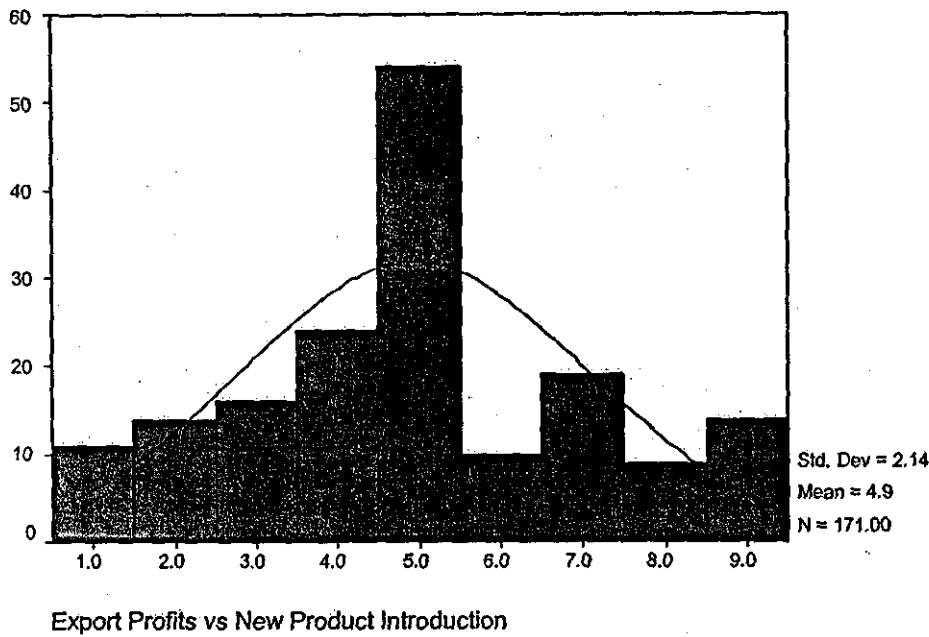
**Figure 5.26: Export sales vs. Export profit**



**Figure 5.27: Export sales vs. New product introduction (NPI)**



**Figure 5.28: Export profit vs. New product introduction (NPI)**



### 5.7.2 Relative emphasis on different frames of reference.

Three statements have been used to capture the relative emphasis placed on the different frames of reference (own plan vs. competition) used to assess the former export objectives' performance. These are:

When evaluating the attainment of your export objectives what is the *relative* emphasis placed on the following assessments?

- Sales performance against own plan versus sales performance against main export competitor(s).
- Profit performance against own plan versus profit performance against main export competitor(s).
- Rate of new product introduction against own plan versus that of main export competitor(s).

The descriptive statistics for each statement are shown below.

**Table 5.46: The relative emphasis on different frames of reference**

		Export Sales against Own Plan vs Competition	Export Profit against Own Plan vs Competition	New Product Intro against Own Plan vs Competition
N	Valid	170	170	170
	Missing	1	1	1
Mean		6.2294	6.3294	5.7000
Median		6.5000	7.0000	5.0000
Std. Deviation		2.39829	2.29168	2.52057
Variance		5.75179	5.25179	6.35325
Minimum		1.00	1.00	1.00
Maximum		9.00	9.00	9.00

Among the 171 cases there was a single respondent who preferred not to provide an answer in this set of questions (the explanation offered was that the firm did not have adequate information on their competitors' performance thereby making the particular frame of reference impossible to use for comparisons). It is obvious from the above, that the mean values for the first two statements are slightly smaller than their median; in contrast, the mean is higher for the third statement, suggesting a slightly positively skewed distribution. All three standard deviations are close to each other.

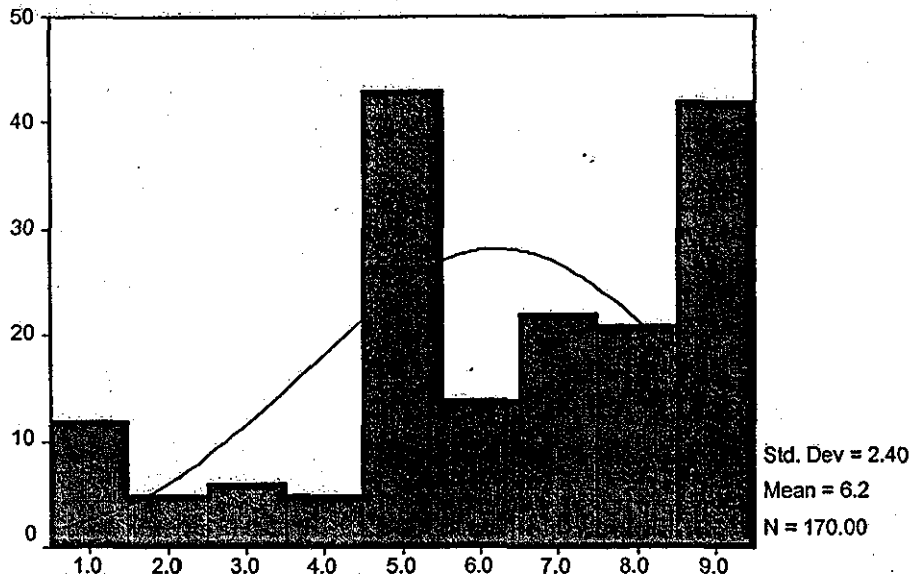
The K-S test statistic is significant for all three statements (see table 5.47 below). Thus, the distributions are unlikely to adequately satisfy assumptions of normality.

**Table 5.47: Testing for normality**

	One sample K-S test statistics
Export sales against Own plan vs. Competition	$Z=1.83, p=.002, 2\text{-tailed}$
Export profit against Own plan vs. Competition	$Z=1.94, p=.001, 2\text{-tailed}$
NPI against Own plan vs. Competition	$Z=1.70, p=.006, 2\text{-tailed}$

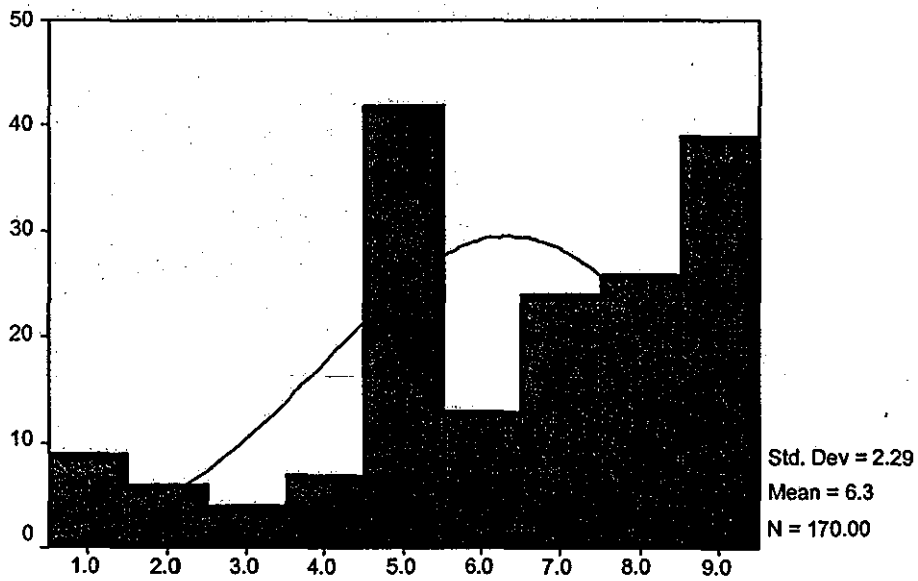
The fact that there is no "goodness of fit" with a normal curve is graphically displayed in the following figures 5.29, 5.30 and 5.31.

**Figure 5.29: Export sales against Own plan vs. Competition**



Export sales against Own plan vs Competition

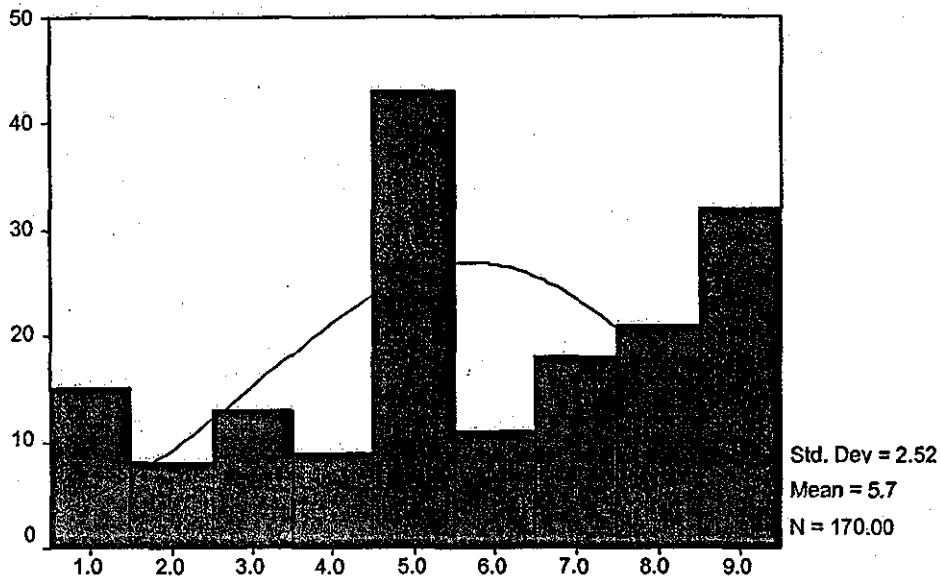
**Figure 5.30: Export profit against Own plan vs. Competition**



Export profit against Own plan vs Competition



**Figure 5.31: NPI against Own plan vs. Competition**



New product introduction against Own plan vs. Competition

### 5.7.3 The time horizons used in the evaluation of export performance.

Two variables were used to capture how the respondents actually define their short- and long-term horizons when assessing their export objectives' performance:

When assessing the attainment of your export objectives what is the *time horizon* you normally use?

- Short-term
- Long-term

The descriptive statistics included in table 5.48 show that there are 162 valid responses for the short- and 157 for the long-term variable. The short-term horizon was defined as 1 month (minimum) and 24 months (maximum). In contrast, the long-term horizon was found to extend from 6 months minimum to 60 months maximum.

**Table 5.48: The time horizons used in evaluations of export performance**

		Short-term horizon	Long-term horizon
N	Valid	162	157
	Missing	9	14
Mean		7.0617	25.2994
Median		6.0000	24.0000
Mode		12.00	12.00
Std. Deviation		4.48696	14.35291
Variance		20.13281	206.00596
Minimum		1.00	6.00
Maximum		24.00	60.00

The mean values are 7 and 25 months respectively. It is interesting to note that the *most* frequently used value (mode) is *12 months* for both variables (short and long term). The findings seem to reflect two positively skewed distributions as both mean values are higher than their respective medians. The K-S test statistics are significant for both variables (see table 5.49). Thus the relevant data are not normally distributed.

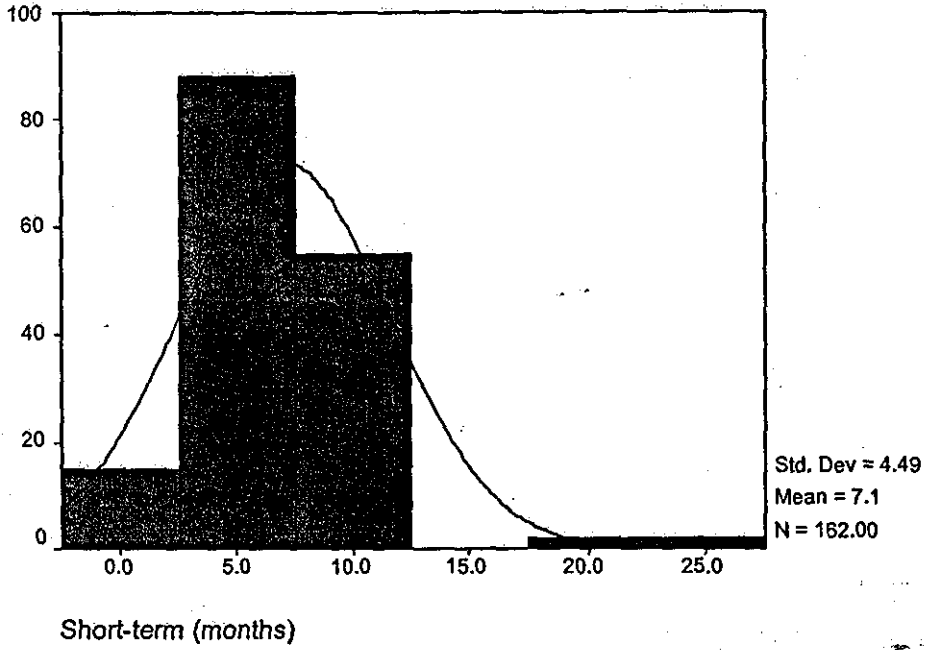
**Table 5.49: Testing for normality**

	One sample K-S test statistics
Short-term	$Z=2.91, p=.000, 2\text{-tailed}$
Long-term	$Z=2.33, p=.000, 2\text{-tailed}$

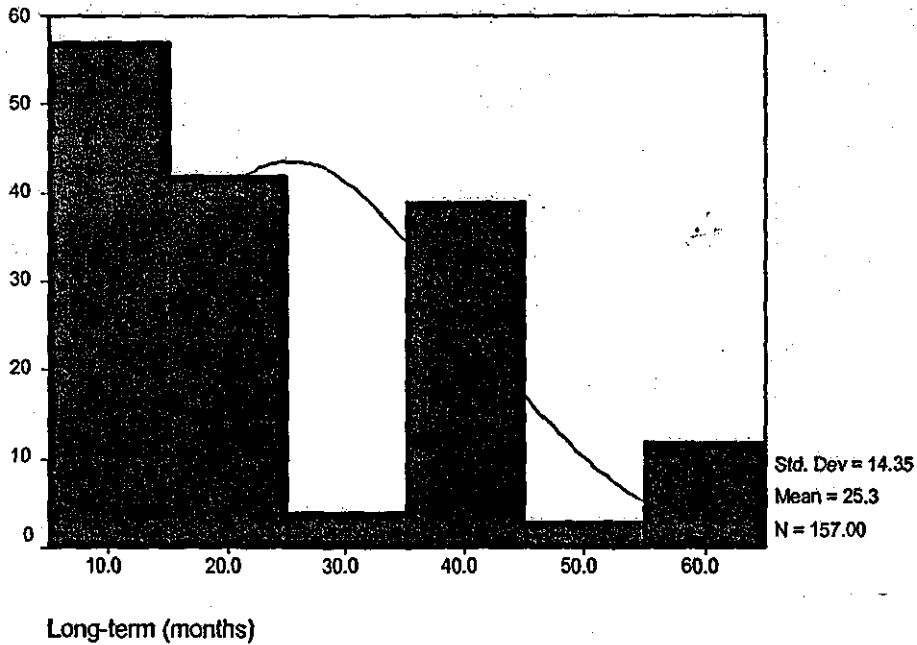
In light of the number of valid responses reported for both variables (see table 5.48), it could be argued that export firms tend to use *both* time horizons when undertaking performance evaluations. This is also supported by the Spearman's rho (non-parametric) correlation between the two non-normally distributed variables. While it would have been expected for the two variables to be negatively related (or unrelated as a minimum), the resulting correlation coefficient reveals a significant positive relationship at the .01 level between the relative emphases placed on short- and long-term horizons ( $r=.724, p=.000, 2\text{-tailed}$ ).

The data distributions for both variables are shown below:

**Figure 5.32: Short-term horizon**



**Figure 5.33: Long-term horizon**



#### 5.7.4 The time horizon used in performance evaluations based on Own plan.

The following three statements refer to the exporters' relative preference for short versus long-term assessments of the export sales, export profit and new product introduction objectives against the own plan referent. Specifically:

When assessing the attainment of your export objectives against your *own plan*, what is the *relative* importance of short- versus long-term considerations?

- Short-term export sales relative to long-term export sales.
- Short-term export profits relative to long-term export profits.
- Short-term new product introduction (NPI) relative to long-term NPI.

Descriptive statistics for each of the three statements are shown in table 5.50.

**Table 5.50: The time horizon used in performance evaluations against own plan**

		Export Sales against Own Plan in the Short-term vs Long-term	Export Profits against Own Plan in the Short-term vs Long-term	New Product Intro against Own Plan in the Short-term vs Long-term
N	Valid	171	170	169
	Missing	0	1	2
Mean		4.7895	4.6765	4.2781
Median		5.0000	5.0000	5.0000
Mode		5.00	5.00	5.00
Std. Deviation		2.04137	2.05430	1.93638
Variance		4.16718	4.22015	3.74958
Minimum		1.00	1.00	1.00
Maximum		9.00	9.00	9.00

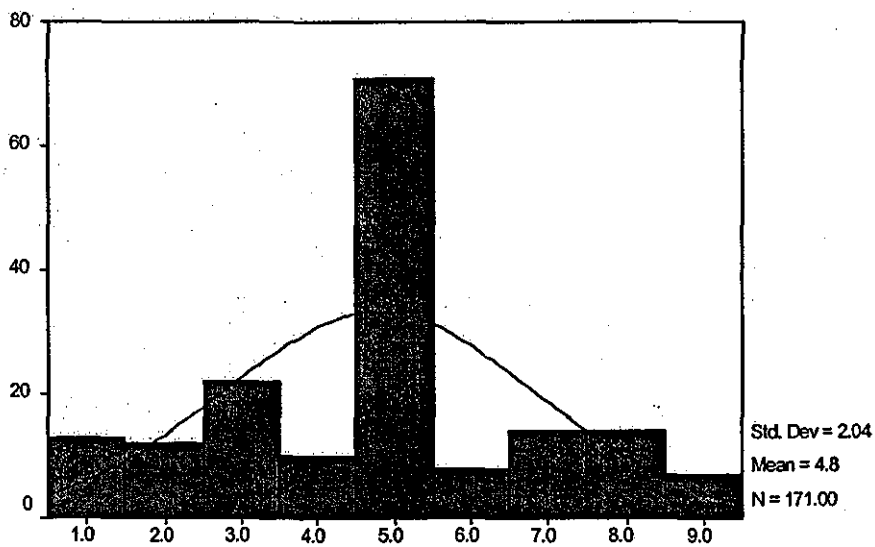
The first relative comparison has no missing values while the second has one and the third has two. The mean values differ slightly while the respective median scores are the same as the mode for all three of them.

The K-S test gave significant results (see table 5.51) showing that none of the above statements satisfies the normality assumption. This is obvious in the figures below.

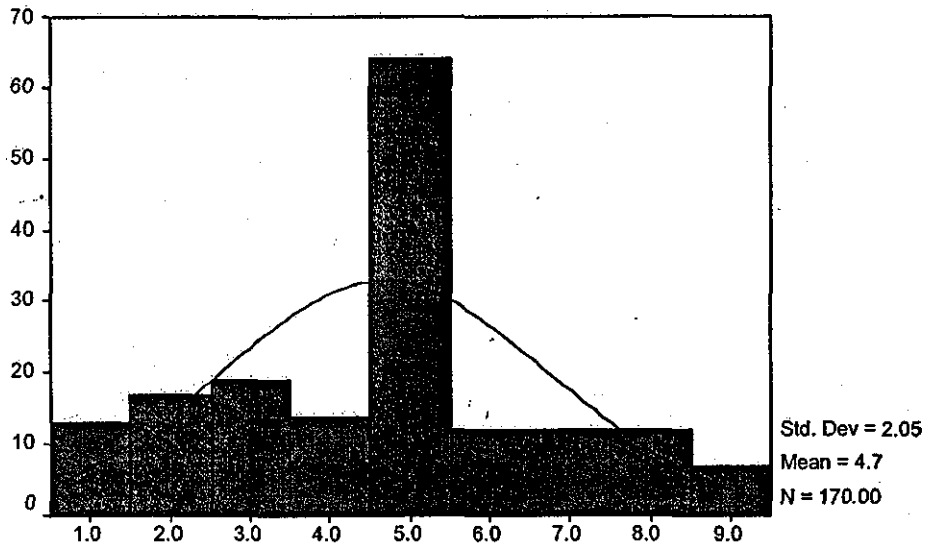
**Table 5.51: Testing for normality**

	One sample K-S test statistics
Export sales against Own plan relative to short- versus long-term.	$Z=2.71, p=.000, 2-tailed$
Export profit against Own plan relative to short- versus long-term.	$Z=2.50, p=.000, 2-tailed$
New product introduction against Own plan relative to short- versus long-term.	$Z=2.62, p=.000, 2-tailed$

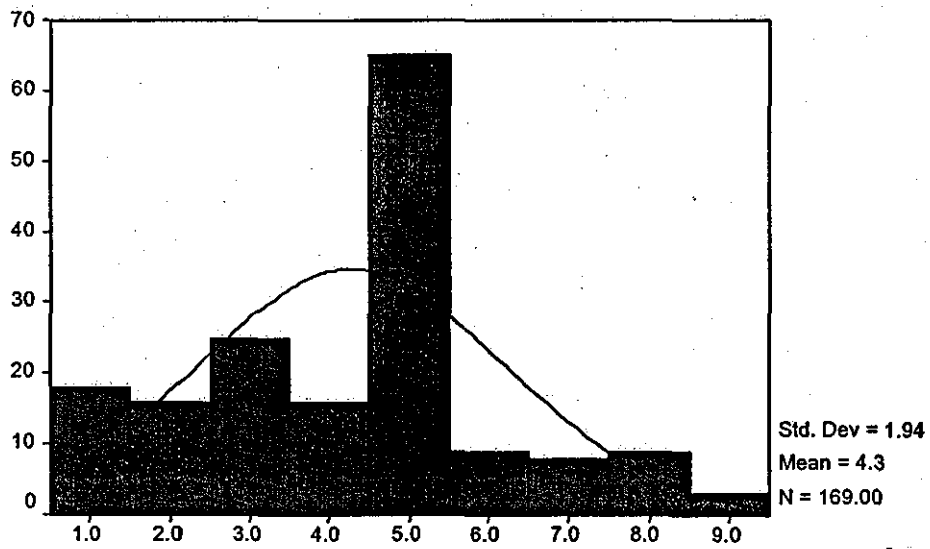
**Figure 5.34: Export sales against Own plan relative to short- versus long-term.**



**Figure 5.35: Export profit against Own plan relative to short- versus long-term.**



**Figure 5.36: NPI against Own plan relative to short- versus long-term.**



### 5.7.5 The time horizon used in performance evaluations based on Competition.

Following the assessment against own plan above (see section 5.7.4), this section focuses on similar performance assessments against export competition. Specifically, the three statements below reflect an equal number of comparisons capturing the exporters' relative preference for short vs. long-term evaluations of the export sales, export profit and NPI objectives against competition. Specifically:

When assessing the attainment of your export objectives against your main *export competitors*, what is the *relative* importance of short- versus long-term considerations?

- Short-term export sales relative to long-term export sales.
- Short-term export profits relative to long-term export profits.
- Short-term new product introduction (NPI) relative to long-term NPI.

Descriptive statistics for each of the three statements are included in table 5.52. The three statements correspond to an equal number of comparisons similar to those described above. Competition is now the frame of reference (instead of own plan).

**Table 5.52: The time frame used in performance evaluations against competition**

		Export Sales against Competition in the Short-term vs Long-term	Export Profits against Competition in the Short-term vs Long-term	New Product Intro against Competition in the Short-term vs Long-term
N	Valid	169	169	169
	Missing	2	2	2
Mean		4.5385	4.5799	4.3728
Median		5.0000	5.0000	5.0000
Mode		5.00	5.00	5.00
Std. Deviation		1.96396	1.98382	1.91721
Minimum		1.00	1.00	1.00
Maximum		9.00	9.00	9.00

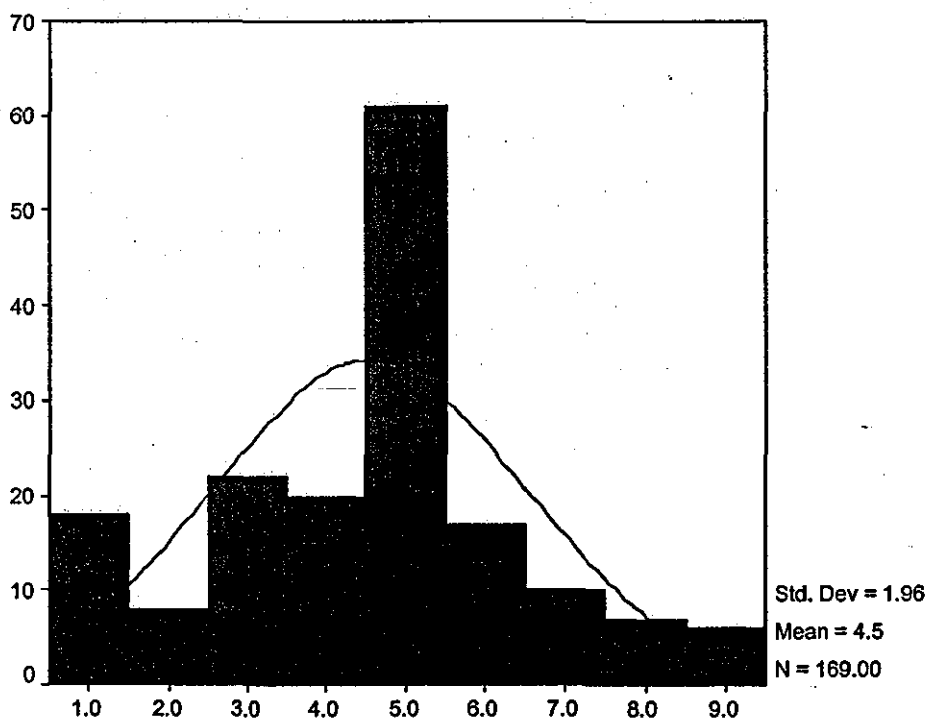
The descriptive statistics show that there are 169 valid cases (2 missing values). For all three variables, the mean values are slightly smaller than the median scores, which have the same value (5.0) as the mode. The standard deviations do not differ either. The respective distributions were tested for normality with the help of the K-S test. The highly significant results are show below.

**Table 5.53: Testing for normality**

	One sample K-S test statistics
Export sales against Competition relative to short-versus long-term.	$Z=2.47, p=.000, 2\text{-tailed}$
Export profit against Competition relative to short-versus long-term.	$Z=2.59, p=.000, 2\text{-tailed}$
New product introduction against Competition relative to short- versus long-term.	$Z=2.32, p=.000, 2\text{-tailed}$

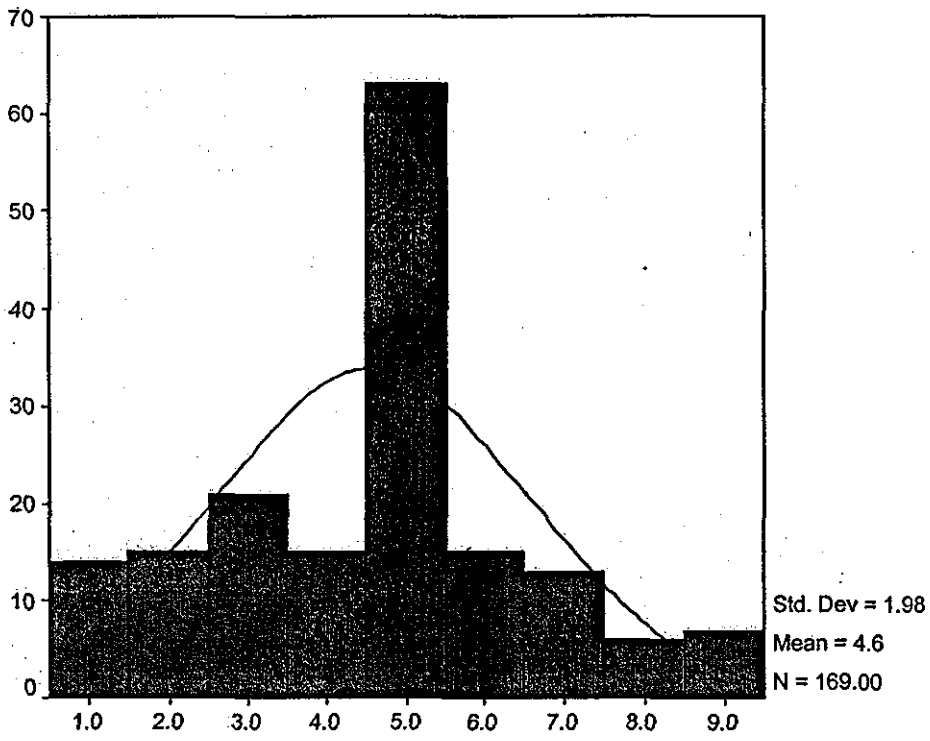
Evidently there are deviations from a normal distribution, which one can see clearly, in the following three figures.

**Figure 5.37: Export sales against Competition in the short- versus long-term.**

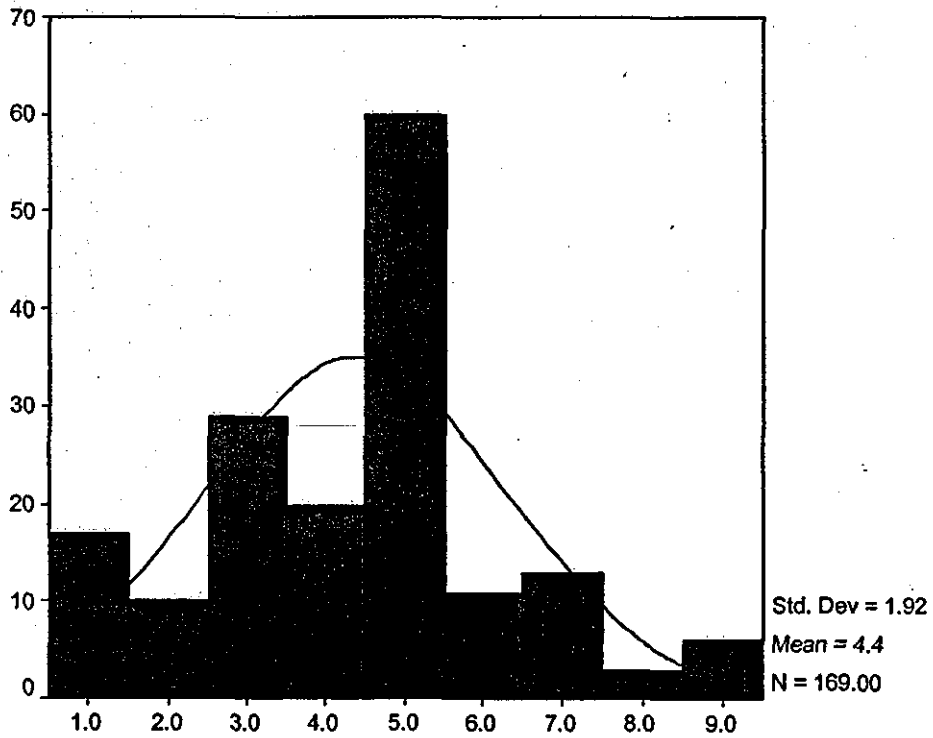




**Figure 5.38: Export profit against Competition in the short- versus long-term**



**Figure 5.39: NPI against Competition in the short- versus long-term**



## 5.8 Validity

Having completed the testing for (i) internal consistency reliability (i.e. whether there is an underlying variable that influences variation of each scale's set of items in repeated trials) and (ii) uni-dimensionality (i.e. whether there is only one underlying variable/construct captured by the set of each scale's items) discussed above, the remaining part of scale development involves the scales' validation. This has to do with the interpretation of what the scores of a particular scale actually represent. Further explanation follows.

Remember that a reliable scale does *not* imply that the underlying (latent) variable responsible for the co-variation of the items is the particular construct that the scale is supposed to measure. Assuming that a scale is reliable, validation refers to whether the specific variable/construct actually measured by that scale "is the underlying cause of item covariation" (DeVellis, 1991, p.43). Thus, any differences among export firms in terms of the scores would reflect the firms' true differences on the construct (variable) measured rather than any measurement errors (constant or random) (Churchill, 1999). If one considers that constructs "captured" by operational measures (scales) are essentially theoretical abstractions that cannot be objectively experienced (Spector, 1992), one realises that scale validity is difficult to test as "its appropriateness cannot be proven. Instead, evidence is collected to either support or refute validity" (Spector, 1992, p.46). There are different types of validity such as content, construct (convergent, discriminant, nomological) and criterion (predictive, concurrent) validity and support for most of them is mainly inferred through testing a set of hypothesised interrelations among constructs and measures.

An exception to the above is the content validity implying the manner with which a scale was constructed (i.e. characterises a scale whose items are randomly chosen from a large subset of items) (De Vellis, 1991). However, it is reminded that this study's scales were selected (adapted) from the relevant literature where they had gone through the relevant stages of measure development and refinement (see Churchill, 1999) and they were found to be content valid. As this study has not attempted to develop any new multi-item measures, it was not considered necessary to

go to the extent to re-scrutinise the scales in terms of content validity. The scales used were treated as already content valid. Additionally, the study provided respondents with the chance to clarify potentially difficult construct domains during the pre-test (and the main e-mail survey) so as to ensure the content validity of a scale. Having achieved that, the study focused on other types of validity discussed below.

### 5.8.1 Construct Validity

The progress of science is based on unobservable constructs that are operationally defined (i.e. their behaviour is measured) in terms of "observables" (scales) (De Vellis, 1991). Given that we do not know the true score of an object (e.g. an export firm) with respect to a specific characteristic (e.g. risk orientation), we try to infer how valid is the scale used (i.e. reflects the true differences among export firms on, say, the risk orientation construct) by looking for evidence on the types of validity mentioned above (Churchill, 1999). In this context, construct validity is extremely important (but also difficult to establish), as it refers to what the instruments (i.e. scales) used in this study are actually measuring (Churchill, 1979). This type of validity "is directly concerned with the theoretical relationship of a variable (e.g., a score on some scale) to other variables" (De Vellis, 1991, p. 46) and is assessed by whether the measure confirms or denies the hypotheses predicted from theory based on the constructs (Churchill, 1999). In the context of construct validity, two types of validity are often studied together, namely, convergent and discriminant validity and both "involve the studying of hypothesised relations between a scale of interest and other variables" (Spector, 1992, p.47). Determining whether the construct behaves as expected with respect to the other constructs to which it is theoretically related is consequently referred to as establishing its nomological validity (Carmines and Zeller, 1979; Churchill, 1999). In relation to the assessment of the latter, sound (i.e. not controversial and ambiguous) theoretical guidance is required as any disconfirming evidence (i.e. unsupported hypothesised relationships among scales) has to be due to the shortcomings of the scale used, rather than the actual (incorrect) theory (Peter, 1981).

To ensure the existence of an "unobservable" construct, convergent validity requires that such construct should be measurable by different (independent) methods whose

measures should be highly correlated; if the latter is not the case, then a construct could be considered an artefact of the measurement procedure (Churchill, 1999). Equally important evidence for the existence of a particular construct is provided by the discriminant validity assessment, which is obtained by "the absence of correlation between measures of unrelated constructs" (DeVellis, 1991, p.50). In this respect, the MTMM (multitrait-multimethod matrix) approach (Canel and Fiske, 1959) could be used to assess simultaneously both the convergent and discriminant validities of a construct, but it requires that "at least two constructs are measured, and each has been measured with at least two separate methods" (Spector, 1992, p.50). Given that alternative methods of measurement for the constructs involved were not available, the former tool could not be used. Instead, the assessment of nomological, discriminant and convergent validity was based on theoretically driven evidence. This is explained below.

### **5.8.2 Assessing Construct (Nomological) Validity**

While the assessment of the scales' construct validity based on ambiguous theory is pointless as explained above, it would be an "erroneous conclusion to assume that only formal, fully developed theories are relevant to construct validation" (Carmines and Zeller, 1979, p.24). Indeed it could be claimed that the development of a comprehensive model of predictors and criterion variables is not necessary for the testing of construct validity. The opposite would have made validation difficult particularly in an export performance context where fragmented literature and in some instances, conflicting findings have hindered sound theory development (see relevant discussion in chapter 2). Instead, it could be argued that what is required is to examine only relationships that are based on "a few theory-driven hypotheses as part of measure validation (a much more modest aim)" (Souchon and Diamantopoulos, 1999, p.158). However, it is unlikely to find such established relationships in the interdisciplinary performance measurement literature and use them for nomological validity investigation purposes. As an alternative, it was thought to use the hypothesised relationships developed earlier in chapter 3. It is stressed that the former hypotheses are theory driven and do *not* reflect established (or even fairly established) relationships; if they did then it would have meant that their substantive contribution to the purpose of this study would have been minimal. They are used only tentatively

here, in order to be able to provide some evidence of nomological validity. Such evidence is provided by the bivariate (correlation) analysis undertaken between independent and dependent variables in chapter 7. The relevant bivariate results are presented and discussed in section 7.1, within a framework where other substantive issues are investigated; yet, the findings relating to the assessment of nomological validity are reported below along with the different types of validity assessed.

Specifically, nomological validity is assessed for the variables, export commitment, resource inadequacy, shared vision/purpose, innovativeness, open-mindedness, commitment to learning, future-oriented culture, risk orientation, export market orientation, environmental uncertainty, performance orientation (i.e. efficiency, effectiveness, adaptiveness), performance documentation. Based on the hypothesised relationships between the former independent variables and the different export performance assessment-related variables (see section 3.5.1), the bivariate results shown in section 7.1 suggest there is evidence of nomological validity for 11 measures. To be specific, export commitment, shared vision/purpose, innovativeness, open-mindedness, future-oriented culture, risk orientation, efficiency, adaptiveness and performance documentation exhibit *significant* correlations supporting their nomological validity while resource inadequacy, commitment to learning, export market orientation, environmental uncertainty and effectiveness are *not* found to behave as hypothesised.

### 5.8.3 Evidence for Construct (Discriminant, Convergent) Validity

The above scales have also been inter-correlated in order to establish their discriminant validity. The latter is actually supported by the correlations included in the following table 5.54. According to these results there is no obvious reason for concern because the scales seem to behave in a manner that is not theoretically different from what one would expect. The table reveals no theoretically "strange" findings among the existing correlations; despite the fact that most variables are somehow related, none of them correlates perfectly with another. Both observations are in accordance to how the scales should behave. For instance, it would be expected that within the context of a firm's culture, there should be (theoretically) a positive relationship among such constructs as, say, shared vision/purpose, open-mindedness

and commitment to learning (Sinkula et al., 1997) as it was (empirically) found to be the case (see coefficients in table below). However one could not expect such clearly different constructs to be perfectly correlated with each other; such expectation would not have made any conceptual sense. In that particular case, if for instance, innovation and commitment to learning (two theoretically different constructs) were exhibiting very high (significant) correlation would suggest that "the method per se accounted for a substantial amount of the variation (and covariation) associated with similar measures of the dissimilar constructs" (De Vellis, 1991, p.50). Such conclusion would have caused concern for the measures used as each of them is expected to capture a specific construct only (i.e. the co-variation of a scale's items should be due to one (latent) construct only).

In light of the above, the fact that the moderate correlations presented in table 5.54 are theoretically sound supports the *discriminant* (divergent) validity of the scales (i.e. their ability to discriminate among different constructs).

**Table 5.54: Spearman's rho correlates for Validity Assessment <sup>1</sup>**

	EC	RI	SV	INN	OM	RO	FOC	CL	EMO	EU	EFI	EFE	ADA
Export Commitment													
Resource Inadequacy	<b>-.39**</b>												
Shared Vision	<b>.31**</b>	-.10											
Innovation	<b>.31**</b>	-.02	<b>.68**</b>										
Open Mindedness	<b>.39**</b>	-.07	<b>.53**</b>	<b>.62**</b>									
Risk Orientation	<b>.28**</b>	-.03	<b>.43**</b>	<b>.44**</b>	<b>.45**</b>								
Future Orient. Culture	<b>.41**</b>	-.14	<b>.47**</b>	<b>.48**</b>	<b>.45**</b>	<b>.39**</b>							
Commit. to Learning	<b>.23**</b>	.00	<b>.50**</b>	<b>.54**</b>	<b>.47**</b>	<b>.47**</b>	<b>.59**</b>						
Ex Market Orientation	<b>.47**</b>	<b>-.20**</b>	<b>.34**</b>	<b>.32**</b>	<b>.50**</b>	<b>.31**</b>	<b>.42**</b>	<b>.35**</b>					
Environ. Uncertainty	-.068	.11	.02	.06	.03	.08	-.03	.04	-.04				
Efficiency	<b>.25**</b>	-.11	<b>.20**</b>	.11	<b>.23**</b>	.04	<b>.17*</b>	<b>.21**</b>	.10	-.01			
Effectiveness	<b>.32**</b>	<b>-.24**</b>	<b>.18*</b>	.15	<b>.16*</b>	.10	<b>.15*</b>	.13	<b>.21**</b>	-.07	<b>.47**</b>		
Adaptiveness	<b>.33**</b>	<b>-.18*</b>	<b>.24**</b>	<b>.31**</b>	<b>.27**</b>	<b>.24**</b>	<b>.25**</b>	<b>.26**</b>	<b>.33**</b>	-.02	<b>.32**</b>	<b>.35**</b>	
Perf. Documentation	<b>.39**</b>	<b>-.26**</b>	<b>.31**</b>	<b>.31**</b>	<b>.30**</b>	<b>.20**</b>	<b>.28**</b>	<b>.22**</b>	<b>.36**</b>	.05	.15	<b>.28**</b>	<b>.22**</b>

<sup>1</sup> Given that eleven of the above variables are not normally distributed (see summary at the end), the non-parametric (Spearman) test has been used through out. Also note that constructs correlate perfectly with themselves across the diagonal but such values have been excluded.

\*\* .Correlation is significant at the 0.01 level (2-tailed).

\* .Correlation is significant at the .05 level (2-tailed).

Furthermore, evidence for *convergent* validity was found by entering all the significantly inter-correlated variables shown in table 5.54 into a factor analysis. These are twelve altogether: export commitment (EC), shared vision (SV), innovation (INN), open mindedness (OM), risk orientation (RO), future oriented culture (FOC), commitment to learning (CL), export market orientation (EMO), efficiency (EFI), effectiveness (EFE), adaptiveness (ADA) and performance documentation (PD).

A three-factor solution was extracted by using principal axis factoring. The total variance explained is 63.5%. Specifically, the constructs, shared vision (SV), innovation (INN), open mindedness (OM), risk orientation (RO), future oriented culture (FOC) and commitment to learning (CL), load on the first factor explaining most of the variance (nearly 48,8 %). This suggests the tapping of a higher order construct. Indeed all the former constructs are related to a firm's organisational culture. Such higher order construct could be called Forward-looking (progressive) culture and its existence provides further evidence for *convergent* validity among the six constructs involved. To report the rest of the factor analysis results, export commitment (EC), export market orientation (EMO) and performance documentation (PD) variables load on the second factor that explains about 12.4% of the variance, while efficiency (EFI), effectiveness (EFE) and adaptiveness (ADA) load on the third factor respectively. The latter accounts for 8.4% of the variance and reveals an underlying performance orientation construct the existence of which supports convergence validity among the three variables involved.

Following construct validity, the discussion now focuses on the criterion-related validity that is introduced below.

#### **5.8.4 Criterion-related Validity**

Criterion validity, as the term implies, involves the testing of hypotheses to ensure that a particular construct behaves empirically as expected with respect to some other variable(s) (criteria) (Spector, 1992). According to the definition, a scale's criterion-related validity is determined when its scores are correlated with the scores of other variable(s) when there is evidence that justifies the role of the latter as criterion (or



criteria). However, “[w]hether or not the theoretical basis for that association is understood is irrelevant for criterion related validity...because it is not concerned with understanding a process but merely with predicting it” (DeVellis, 1991, p.44). The latter provides a defining distinction between criterion and construct validity.

*Criterion validity is also known as predictive validity (both terms have been used interchangeably) because it focuses on the usefulness of the measuring instrument as a predictor of some other characteristic or behaviour of the individual (Churchill, 1999). Predictive validity is ascertained by testing “how well the scale can predict future variables” (Spector, 1992, p.48) but “does not necessarily imply any causal relationship among variables, even when the time ordering of the predictor and the criterion are unambiguous” (De Vellis, 1991, p.44).*

Within the context of criterion validity, there is also what is called as concurrent validity and is concerned with the relationship between the predictor variable and the criterion variable when both are assessed at the same point in time (Churchill, 1999). It can be tested by “simultaneously collecting data from a sample of respondents on the scale of interest and on criteria, hypothesised to relate to the scale of interest” (Spector, 1992, p.48). Nevertheless, the most important aspect that determines the criterion-related validity “is not the time relationship between the measure in question and the criterion whose value one is attempting to infer” (DeVellis, 1991, p.45), but the strength of the empirical relationship strictly reflected by high correlation between the two variables (Churchill, 1999).

Despite the conceptual difference between construct and criterion validity, it is often possible for exactly the same correlation to “serve either purpose. The difference resides more in the investigator’s intent than in the value obtained” (De Vellis, 1991, p.47). In this respect, if theory suggests a positive relationship between say, the export firms’ risk orientation and the relative importance of firms’ own export plan in the assessment of export performance, then both nomological and criterion-related validity would be assessed provided that own plan’s selection as criterion could be explained/justified. Nevertheless, it is often difficult to justify the choice of a criterion in order to be able to assess criterion-related validity. This is also the case in this

study where there is little evidence to allow such decision on the appropriate criteria to be made. Therefore, it was not possible to examine criterion-related validity.

In this context, it is worth noting that while the development of new scales would have made the assessment of criterion validity a relatively more important requirement (e.g. Souchon and Diamantopoulos, 1999), this is less likely to be the case here. The scales this study employed have been adapted from the literature where they have been already purified and found to be valid. They have also been found to be reliable and uni-dimensional in the context of this study. Furthermore, remember that the examination of the former correlates (see table 5.54) has not suggested any theoretically unexpected relationships among the variables involved; this is conducive to the construct validity of the scales employed. In light of the fact that no evidence was found to suggest the opposite, there is reason to believe that the scales are valid.

### **5.9 Testing for common method variance**

The variables used in this study were tested for common method variance, too. The possibility for bias due to common method variance should be an important concern for a survey research that relies on self-reported data (Podsakoff et al, 2003). Such bias may artificially inflate observed relationships between variables and was tested here using a Harman's one-factor test for common method bias (see Harman 1976; Podsakoff and Organ, 1986). Specifically, the independent and dependent variables of this study (all the self-report items of the questionnaire) were entered simultaneously into a principal components factor analysis with varimax rotation. According to this approach, common method variance would be present if either a single-factor emerged from the analysis or one factor accounted for more than 50% of the variance in the data. This is not the case in this study. In fact, the factor analysis resulted into 24 factors with eigenvalues greater than 1 that accounted for 77.6% of the total variance in the data; also note that the first factor explained 21.6 % of the variance only.

### 5.10 Summary and comments on the descriptive findings.

The section starts by offering a summary of findings that help picture the sample of exporters used in the data collection stage. The following table 5.54 focuses on five descriptors. Starting with the size of the firms studied, nearly 80% of them have less than 221 employees. For the majority of the firms, the turnover does not exceed £31.22 million (this is the average value). The firms' export experience is on average, 28.5 years. While the export destinations for the products exported vary from 1 to 200 countries, for a cumulative 62% of the firms, the number of export destinations does not exceed 38 countries. Also, more than 50% of the firms export less than half (44.5%) of their annual sales turnover.

**Table 5.54: Sample profile**

Firm Descriptors	Level	Frequency	Mean (Standard Deviation)
Number of people employed	Less than 100	61.3%	221.72 (633.57)
	101 to 250	19.7%	
	251 to 500	12.5%	
	501 to 1000	2.3%	
	1001 to 2040	2.4%	
	More than 2040	1.8%	
Annual Sales Turnover (£ million)	Less than 10 million	58.3%	31.22 million (95.04)
	10.1 to 50 million	30.2%	
	50.1 to 250 million	9.6%	
	More than 250 million	1.9%	
Years of export experience	Less than 25 years	57.1%	28.5 years (25.26)
	26 to 50 years	34.3%	
	51 to 100 years	6.2%	
	More than 100	1.8%	
Number of countries exported to	Less than 25 countries	48.2%	38 (33.7)
	26 to 50 countries	30.6%	
	51 to 100 countries	15.9%	
	More than 100	5.3%	
(% of sales from exporting	Less than 25 %	33.5%	44.52% (22.6)
	25.1% to 50%	28.3%	
	50.1% to 75%	22.3%	
	More than 75%	15.9%	

Furthermore, it was found that 70% of the sample consists of firms that are younger than the average age (i.e. 50 years). More than half of them (53.8%) are private independent firms, 17.5% are a division of a multinational company, 15.2% are subsidiary/affiliate companies and 13.5% are PLC companies. Most of them (74.2%) concentrate on one product type only, although about a quarter of them (25.8%) focus on more than one product types (i.e. mainly industrial goods and/or consumer goods and/or services).

Also, up to half of the firms reported higher than average commitment to exporting while their export activities are constrained by the resources available. With respect to cultural characteristics, it was found that about half of the exporters consider themselves to be more than average open-minded, risk oriented, innovative, committed to learning, future-oriented, export market oriented as well as share common values and purpose. Approximately 50% of the firms claim they place higher than average emphasis on an efficiency orientation and documentation of their performance; 47% of them also reported a higher than average emphasis on effectiveness and adaptiveness. Last, about 20% of the exporters are on average satisfied with their export sales and profitability while about a quarter of the sample reported average satisfaction with NPI performance.

Finally, the entire set of the 19 *independent* variables used in the proposed framework (see Figure 3.1) have been examined in terms of normality and there are 11 of them whose distributions depart from a normal curve. These findings can have implications for the multivariate analysis (i.e. non-normally distributed variables have to be transformed in order to perform a particular type of analysis, see more in section 7.3.4).

Table 5.55 summarises the independent variables in terms of whether they meet the normality assumption.

**Table 5.55: Normality findings for the independent variables.**

<i>Normally distributed variables</i>	<i>Non-normally distributed variables</i>
Export dependence	Export experience
Resource inadequacy	Export commitment
Shared vision/purpose	Export destination diversity
Innovativeness	Firm's size
Risk orientation	Total annual sales turnover
Commitment to learning	Open-mindedness
Export market orientation	Future-oriented culture
Environmental uncertainty	Efficiency
	Effectiveness
	Adaptiveness
	Performance documentation

In addition to the non-normally distributed constructs mentioned above, the K-S tests undertaken showed that *all* the export performance assessment-related variables (14 altogether) exhibit a *lack of normality*. This result suggests that the dependent variables of this study (see more in the next chapter) may not satisfy the normality assumption required for the use of certain multivariate methods such as multiple regression analysis (see more in section 6.2.5). Moreover, the graphs corresponding to the export performance-related variables show that clear *groupings* of firms emerge reflecting either high or low or equal preference for specific modes of export performance assessment. Both the above findings can have implications for the multivariate analysis such as the need to consider analytical techniques that can accommodate variables composed of different categories/groups (e.g. multiple discriminant analysis). Yet, this issue is discussed further in chapter 7 where the selection of the multivariate method is dealt with.

The next chapter looks into the rest of this study's descriptive component. The discussion emphasises the all-important export performance assessment (AHP) output, constituting the dependent variable of this study.

## **CHAPTER 6**

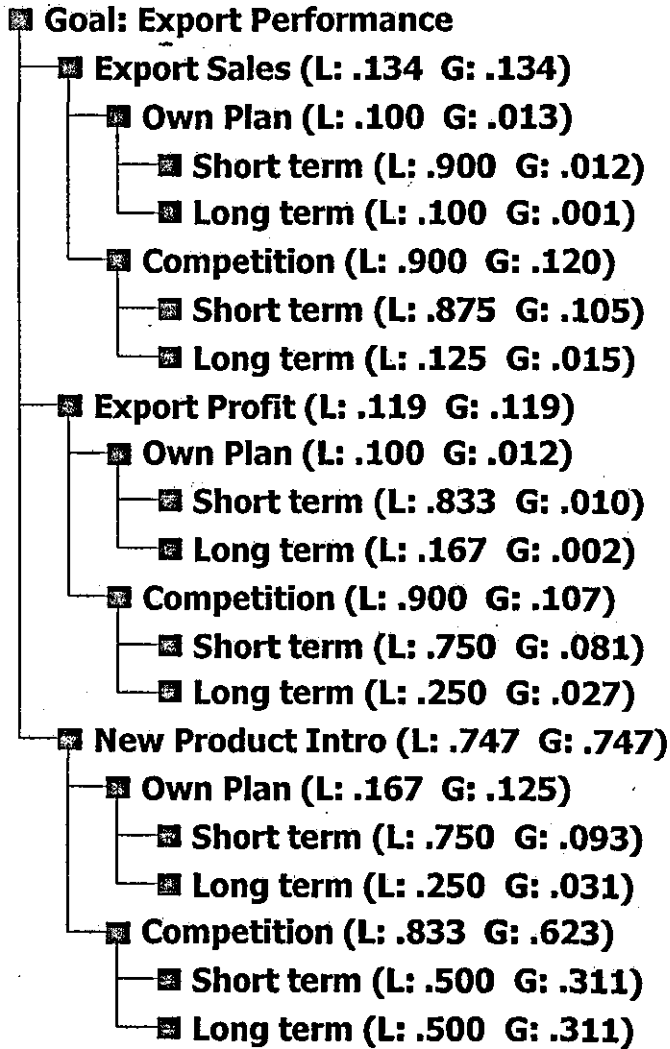
# **EMPIRICAL FINDINGS ON EXPORT PERFORMANCE ASSESSMENTS**

## 6 EMPIRICAL FINDINGS ON EXPORT PERFORMANCE ASSESSMENTS

Following the descriptive analysis of findings concerning the organisational and environmental factors that provide the context within which export performance is assessed, this chapter focuses on describing the Analytic Hierarchy Process (AHP) output. The latter was derived with the assistance of the Expert Choice 2000 (EC 2000) software package introduced in section 4.2. The AHP output is essentially the dependent variable of this study (i.e. the assessment of export performance shown in Figure 3.1) and provides key evidence on exporters' assessments of success. All relevant findings are discussed below and also summarised at the end of this chapter.

Remember that an AHP model was defined to operationalise the assessment of export performance (see more in section 4.2). The AHP model structures the assessment of export performance hierarchically (in four levels) and comprises from top to bottom: (i) the *overall goal* (i.e. export performance), (ii) the *export objectives* pursued (i.e. export sales, export profit and new product introduction), (iii) the *frame of reference* (i.e. own plan vs. competition) and (iv) the *time frame* (i.e. short vs. long-term) utilised. Next, the export decision makers' responses (i.e. the data collected with the web-based survey) regarding the (i) – (iv) above, were entered into the EC 2000 software. Subsequently, a numerical algorithm was used by the EC 2000 to calculate the priorities for each element of the hierarchy (see also section 4.2.1); specifically, the *local priority* (i.e. the relative importance of the element with respect to its "parent" element) and the *global priority* (i.e. the relative importance of the element with respect to the overall goal). In addition, remember that the overall goal at the top of the hierarchy is, by definition, assigned a global priority of 1.00 that is also its local priority. The rest of the local and global priorities (weights) derive from reciprocal (pairwise) comparisons and appear as fractions of 1.00. An actual example of an AHP output chosen randomly out of this study's sample of respondent firms is clearly illustrated in figure 6.1 below. The relevant (G) and (L) weights in the specific output reflect the relative importance the particular export firm (called 48) places on the different aspects of its export performance assessment namely, export objectives, frame of reference and the time horizon. Details on how the relevant global and local weights are distributed (and interpreted) can be found in sections 4.2.1 and 4.2.2.

Figure 6.1: AHP model and output for firm No 48



The AHP output for each of the export firms that participated in this study is identical to the output depicted above; other than that, the global and local priorities for each of the elements of the former AHP model differ across firms (i.e. examples relating to



the interpretation of a firm's AHP output have been already presented in section 4.2.2). The cross-firm sum of the (G) weights for each element of the AHP model represents an aggregate AHP global priorities output. The cross-firm sum of the (L) weights for each element of the AHP model represents an aggregate AHP local priorities output.

The aggregate AHP global priorities (G) output for all the different elements of the hierarchy is presented in the map shown in figure 6.2 below. The aggregate AHP local priorities (L) map is shown in figure 6.3 respectively (see second part of this chapter, before section 6.2.1). Note that from now on, when a reference on the AHP (G) map is made, this implies the aggregate global priorities map, while the respective aggregate local priorities map is stated as AHP (L) map. Both the AHP (G) and (L) maps provide an overview of the assessment of export performance. To be more specific, both maps include pertinent descriptive statistical output so as to inform the reader about the relative importance (or emphasis) exporters place on the different aspects of export performance assessments (i.e. export objectives, frame of reference and time frame). Such information is essential to understand the managerial perspective on export success. However, note that the map that serves better the objectives of this study is the AHP (G) map.

This chapter is divided into two parts; both focus on presenting the AHP (G) and (L) output and highlight findings relating to the measurement of export performance. The first part in particular (see 6.1), presents findings on the assessment of export performance *across objectives*, while the second part (see 6.2) interprets the output corresponding to the performance assessment of *individual* export objectives. The former part (6.1) deals with cross-objective comparisons and discusses the overall emphasis placed on specific frames of reference and/or time frames used (across objectives). In contrast, the second part (6.2) presents findings relating to the performance evaluation of each objective (namely, export sales, export profit, NPI) separately; the export sales related output is presented first, followed by the export profitability objective's output while the new product introduction's output follows last. The presentation of the findings follows the top-down structure of an AHP model starting from the top (1<sup>st</sup> level) down to the last (4<sup>th</sup>) level of the hierarchy. The

presentation of the findings would be better understood if the reader follows the (top-down) structure of the AHP (G) and (L) maps shown at the beginning of each section.

Last, this chapter discusses the existence of inconsistency in the respondents' judgments and its likely causes. The inconsistency ratio (mentioned also in section 4.3) is a feature of the EC 2000 software utilised and measures the ability of a decision-maker to make consistent judgments when reciprocal (pairwise) comparisons are involved. It was computed separately for each respondent firm's AHP output and differs substantially across firms. Finally, this chapter concludes with a summary and a discussion of the export performance assessment related findings.

#### *Aggregate Maps and Matrix of the AHP output*

This study's AHP output includes global, local priority weights and the inconsistency ratio per respondent firm. The output resulted in forty-three variables analysed statistically with the SPSS software; the results are summarised in figure 6.2 (aggregate (G) map), figure 6.3 (aggregate (L) map) and figure 6.4 (aggregate matrix).

The AHP (G) map conveys the overall picture regarding the relative importance (or emphasis) placed by the respondents on the different aspects of export performance assessments (export objectives, frame of reference and time frame); it summarises the relevant output in terms of mean, standard deviation (s.d), minimum (min) and maximum (max). By studying the mean global priority scores shown in figure 6.2, one can explicitly compare (i) the relative importance export decision makers attach to the export sales versus export profit versus new product introduction objectives (see more in section 6.1.1); (ii) the average emphasis placed on assessing performance against own plan as opposed to export competition for *each* export objective separately as well as *across* objectives (see more in section 6.1.2); (iii) the average preference for short- versus long-term considerations for *each* export objective/frame of reference combination as well as *across* export objectives and frames of reference (see more in section 6.1.3). Similarly, the AHP (L) map (see figure 6.3) and the aggregate matrix of export performance assessments (see figure 6.4) reflect the rest of

the descriptive component of the AHP output (both are presented in the second part of this chapter, see 6.2).

Note also that the aggregate AHP output derives from a total of 167 AHP models. Each model corresponds to each respondent firm. Although the sample size is 171 export firms, four respondent firms were excluded from the sample due to their answers being treated as missing. Hence, the aggregate descriptive findings of the AHP output have been computed from a (reduced) total of 167 exporters. This is the sample size used in the subsequent analysis of the AHP output presented here.

To clarify the issue of missing answers mentioned above note that some export decision makers carried out only *some* (not all) of the relevant (pairwise) comparisons required by the AHP model; then, the computation of a firm's relative importance weights is possible but only in approximation. In fact, the priority weights computed can be different (i.e. more accurate) had a firm's export decision maker answered all questions relating to pairwise comparisons. When using the AHP approach, it is also recommended to compute an inconsistency ratio for each firm (Dyer and Forman, 1991); it was mentioned in section 4.3 that this ratio has to do with the quality of the managers' input. The computation is based on the managers' judgments entered and any missing values are likely to affect this ratio (see more in section 6.3). Due to the aforementioned reasons, only exporters that responded to *all* questions associated with the paired comparisons have been included in the statistical analysis. The aim was to generate the most accurate estimate possible for the relative importance weights placed on the different aspects of export performance assessments.

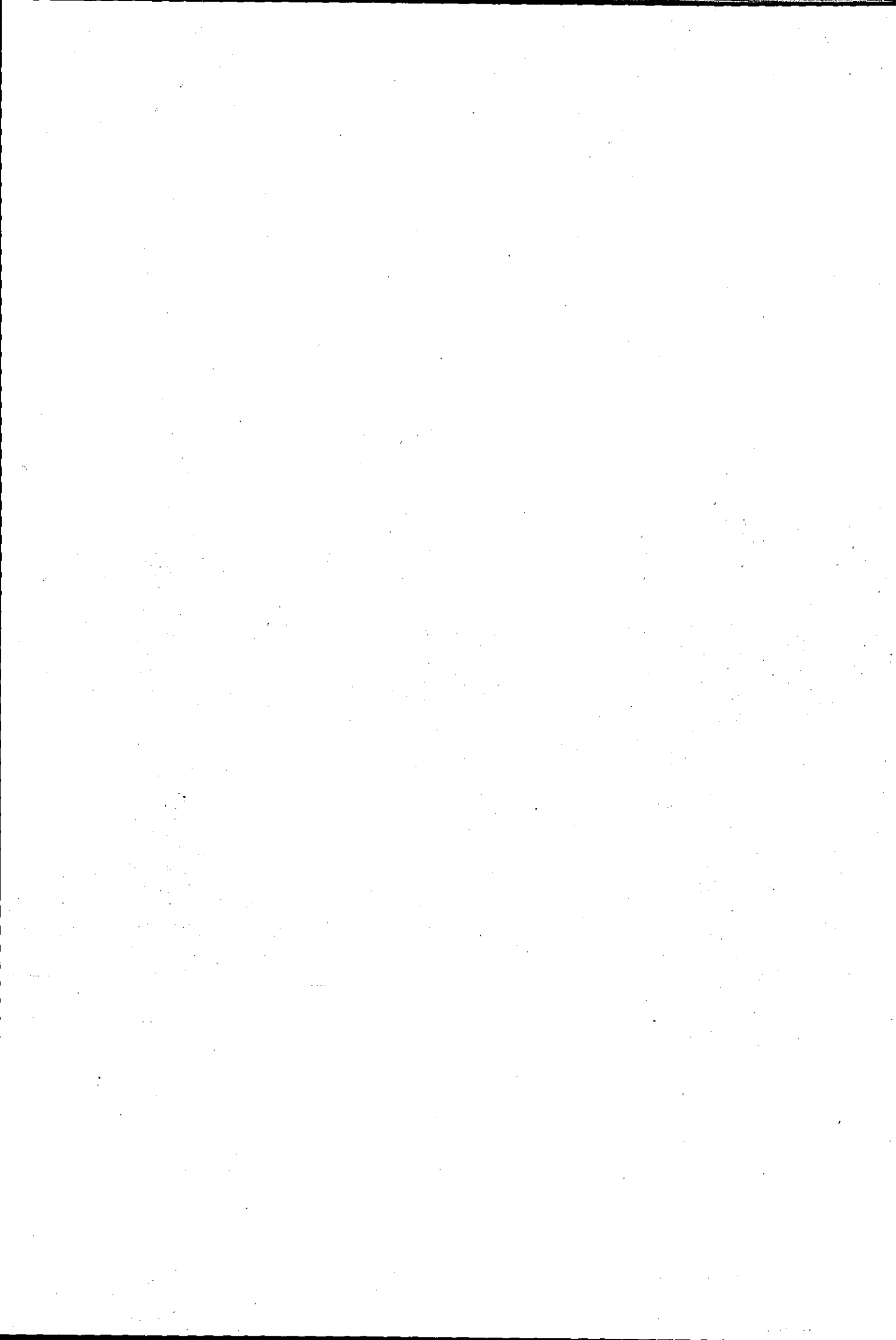
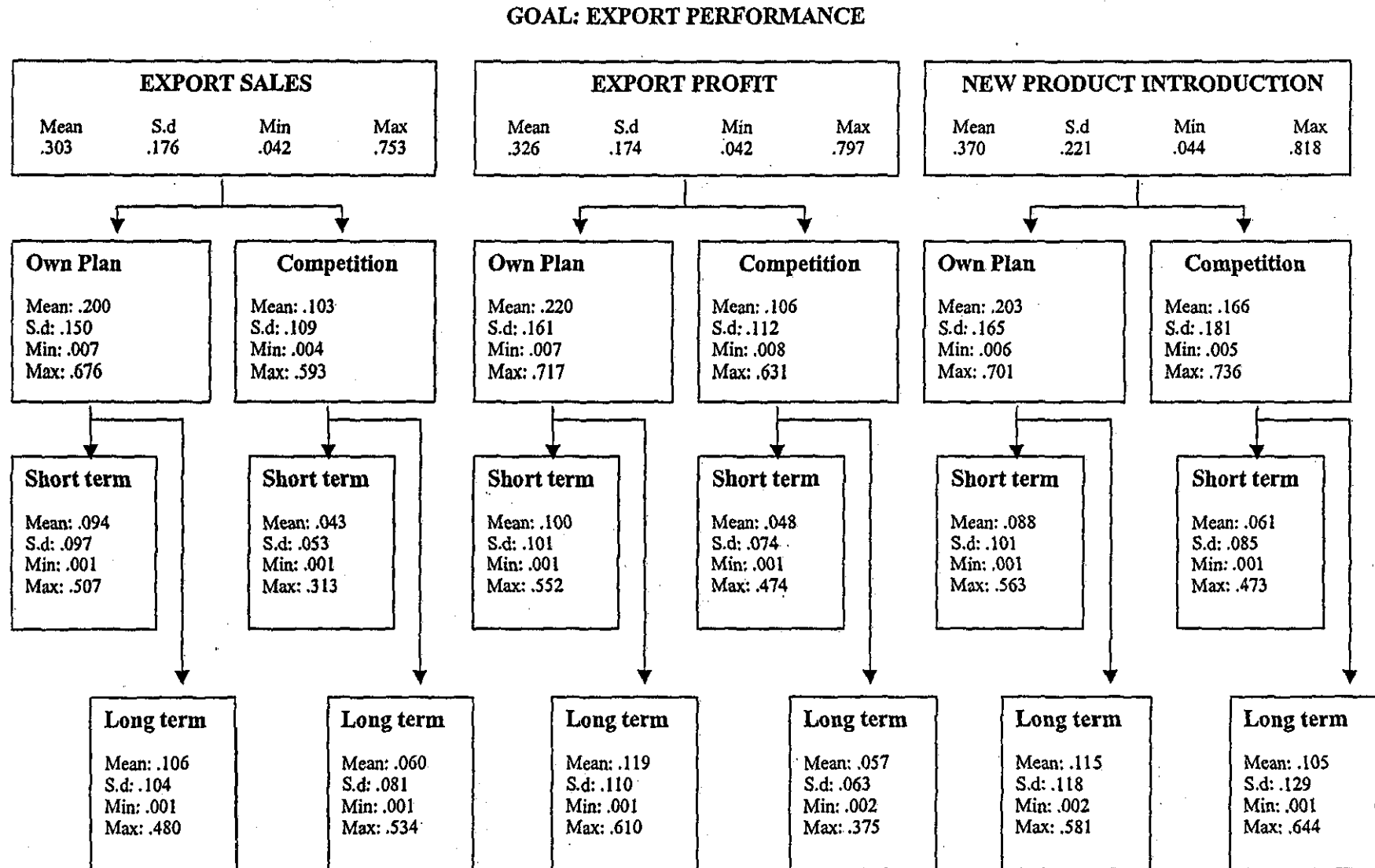


Figure 6.2: Aggregate AHP (G) map of global priority weights



## 6.1 AHP OUTPUT COMPARISONS ACROSS EXPORT OBJECTIVES

### 6.1.1 RELATIVE IMPORTANCE OF THE EXPORT OBJECTIVES

The export objectives' mean global priority weights (across the sample of 167 respondent firms) are shown in figure 6.2 (see 2<sup>nd</sup> level of the hierarchy). The global (G) priority weights reflect each export objective's mean relative importance when export performance is assessed. It is evident from figure 6.2 that respondents favour primarily the new product introduction objective; the latter is shown (see the AHP (G) map) to have a mean of 0.370 that exceeds the mean values associated with the export profitability (mean 0.326) and the export sales (mean 0.303) objectives respectively.

Despite the fact that the new product introductions' mean global priority score is higher in comparison to the scores of the other two objectives (see the AHP (G) map), a conclusion cannot be reached before determining whether mean differences among the relative emphases placed on the three objectives are actually significant. In this respect, the paired samples t-test was employed for each pair of objectives. Note that although the distributions of all three variables diverge from a normal curve (see normality test statistics in section 6.1.4 below), one can still apply the former parametric test when there is a reasonably large ( $n > 30$ ) sample size (Diamantopoulos and Schlegelmilch, 1997). In the context of this study that size was considered to be quite large (i.e.  $n=167$ ). The t-test results for all three pairs are shown in table 6.1.

**TABLE 6.1: GLOBAL PRIORITY MEAN DIFFERENCES AMONG EXPORT SALES, PROFIT AND NEW PRODUCT INTRODUCTION**

<i>Mean global priorities (AHP) output</i>	<i>Paired samples t-test (2-tailed)</i>
Export Sales (G=.303) vs. Export Profit (G=.326)	1.07, p=.28
Export Sales (G=.303) vs. New Product Introduction (NPI) (G=.370)	2.38, p=.018*
Export Profit (G=.326) vs. New Product Introduction (NPI) (G=.370)	1.58, p=.115

\*Significant result at the .05 level

Remember that the null hypothesis assumes *no difference* between the mean global priorities of each pair of objectives; hence, the interpretation of a significant statistic is that there is low probability of rejecting the null hypothesis when in fact the latter is correct. The scores in table 6.1 indicate that there is only one *significant* mean difference; this is between the new product introduction and the export sales objectives. In contrast, the mean difference between the new product introduction and export profitability objectives is not significant. Finally, there is no significant difference between the emphasis (or importance) export managers place on export profitability relative to the emphasis placed on export sales performance.

Bearing also in mind that global priorities at any level add up to the weight of the goal (i.e. 1.00), the resulting output (see figure 6.2) actually suggests that export firms place an almost *balanced emphasis* on their financial and non-financial objectives. The fact that managerial views of export success incorporate the achievement of both financial and operational goals is consistent with the idea of a multifaceted export performance construct (Matthyssens and Pauwels, 1996; Diamantopoulos, 1998; Katsikeas et al., 2000). However, the fact that the *most* important consideration for exporters has been a non-financial export objective (i.e. NPI) followed by profitability, supports claims in the marketing performance literature relating to a shifting measurement focus from financial to non-financial objectives (e.g. Clark, 1999). Having said that, such shift of measurement emphasis does not seem to downgrade the importance of export profitability (a financial objective) relative to export sales.

Shifting attention to the minimum and maximum global priority (G) values computed for the three export objectives (see figure 6.2), there are clearly great differences in the relative importance of each export objective. For the new product introduction in particular, the maximum global priority score (max) is 0.818 and indicates the very high emphasis a firm places on the specific objective, while the minimum global priority score (min) is 0.044 and shows the very low emphasis a different firm places on this specific export objective. Similarly, export profit and export sales objectives exhibit variation in the distribution of their respective global priority weights; for instance the export profitability's importance has reached as low as 0.042 for one firm

and as high as 0.797 for another. Taken together, the standard deviations and particularly the minimum/maximum values shown in figure 6.2 reveal *substantial variations* across firms in terms of the relative emphases export decision makers place on their export objectives. This result is consistent with the view that export firms pursue multiple and different goals (Madsen, 1987); by implication, conducting inter-firm performance comparisons on *any single* export performance indicator that captures the attainment of a particular export objective (e.g. export sales, export profit) is “likely to yield opposite views of how “successful” a company is” (Hart, 1993, p.32). Although a single export performance indicator has been employed extensively in an export context (for a relevant review see Leonidou et al., 2002), the foregoing empirical findings provide support for the normative recommendation (see section 3.3) that at the very least, performance comparisons on a given indicator should make allowance for the differential importance of objectives across firms.

The aforementioned variations in export performance assessment practices have been inadequately captured by conventional measures used in export performance research (see review by Katsikeas et al., 2000). To illustrate this point take the new product introduction objective (NPI). The global priority of the new product introduction (see figure 6.2) indicates its considerable importance in the eyes of the exporters; this is an extremely interesting finding from a performance measurement point of view because it highlights a new “dimension” that had been largely neglected in previous studies. According to Katsikeas et al., (2000), export related studies have predominantly used export sales and/or profit indicators while only a handful of studies (about 4%) have employed product related measures to assess export performance. Although rarely used, such indicators are indeed “justified on the grounds that the product and its performance are key to any export marketing strategy” (Katsikeas et al., 2000, p.498). Thus, it seems that earlier export research work treated new product introduction as an objective of *least* importance in comparison to export sales and export profitability. In this respect, fears expressed in the literature that academics may differ from practitioners in terms of the performance measurement approach utilised (Otley, 1994; Matthyssens and Pauwels, 1996) are not unfounded.

In addition to the above, note that the importance export firms place on objectives other than export profit and export sales may not be limited to the NPI objective only;



in fact it could be possible for different objectives such as employee retention to attract the same or even higher importance had they been included in this study (see Maltz et al., 2003). However, this study does not try to rank all export objectives in terms of their relative importance but to illustrate that there are cross-firm variations in the emphases attached on any given set of objectives that can have an impact on valid export performance comparisons (this is discussed further in chapter 9).

### 6.1.2 RELATIVE IMPORTANCE OF OWN PLAN VS COMPETITION

Remember that own plan and competition are the two frames of reference utilised to evaluate the performance of three export objectives; these two frames of reference are (hierarchically) placed under each export objective (see figure 6.2 above) while their relative emphases are compared (pairwise) for each objective assessed. Following reciprocal comparisons, each export objective's global priority is divided between own plan and competition; thus, the resulting global priorities for the two frames of reference add up to each objective's global priority. The global priorities output for each frame of reference (per export objective) has been aggregated across the sample of firms. The respective aggregate weights are shown in the AHP (G) map in figure 6.2. The AHP (G) map shows clearly the own plan's mean global priority score to be higher in comparison to competition's mean (G) weight; this seems to be a general trend across export objectives (see more below) and indicates the respondents' confidence on their firms' export plans when assessing export success.

To determine the overall importance of the frames of reference (i.e. own plan and competition) used for the evaluation of export performance *across export objectives*, two new variables have been created. The first variable represents the sum of the global priority weights resulted for own plan (per export objective assessed), while the second variable represents the sum of the respective (G) weights for competition. Thus, own plan's overall global priority was computed by adding own plan's global priorities across export objectives (see figure 6.2) as shown by the formula used for the relevant computations:

*Own plan's total (G) weight (across objectives) = Export sales/own plan (G) + Export profit/own plan (G) + New product introduction/own plan (G).*

Similarly competition's overall global priority was computed by adding (i.e. across export objectives) the relevant global priorities resulted for competition (see figure 6.2); the formula used for the computation is the following:

$$\text{Competition's total (G) weight (across objectives)} = \text{Export sales/competition (G)} + \text{Export profit/competition (G)} + \text{New product introduction/competition (G)}.$$

The relevant descriptive statistics are included in table 6.2. The summated (G) output across objectives indicates a higher mean score for the own plan frame of reference (mean score 0.624) relative to competition (mean score 0.375).

**TABLE 6.2: DESCRIPTIVE STATISTICS FOR THE GLOBAL PRIORITIES OUTPUT RELATING TO THE FRAMES OF REFERENCE**

Statistics	Own Plan (Emphasis across export objectives)	Competition (Emphasis across export objectives)
<i>Mean</i>	0.624	0.375
<i>Median</i>	0.654	0.345
<i>Std. Deviation</i>	0.247	0.247
<i>Minimum</i>	0.099	0.099
<i>Maximum</i>	0.901	0.901

As before, a t-test was employed to determine whether the difference in the own plan's mean global priority is actually significant. The result is shown in table 6.3.

**TABLE 6.3: GLOBAL PRIORITY MEAN DIFFERENCES BETWEEN OWN PLAN AND COMPETITION ACROSS EXPORT OBJECTIVES**

<i>Aggregate global priorities output (across export objectives)</i>	<i>Paired samples t-test (2-tailed)</i>
Own plan (G=0.624) versus Competition (G=0.375)	6.48, p=.000**

\*\* Significant result at the .01 level

Given that the t-test statistic indicates that the mean difference is highly significant, it can be concluded that the average emphasis placed on own plan (across export objectives) is higher in comparison to competition. The relatively lower emphasis respondents place on export competitors actually indicates less reliance on competitive benchmarking for export performance evaluation purposes. In contrast, the higher preference for the own plan referent, suggests that exporters place more emphasis on the "setting of internal benchmarks for improvement" (Katsikeas et al, 2000, p.501) and the evaluation of export success against company goals.

While there is "no empirical knowledge to suggest that the use of any particular performance referent is inherently superior to any other" (Morgan et al., 2002, p.370), this study's findings seem to partly agree with a study by Day and Nedungadi (1994) where it was argued that managers' primary emphasis is on internally oriented representations of competitive advantage, followed (closely) by competitor and customer focused perspectives. In addition, the foregoing empirical findings are in line with Maltz et al, (2003) who reported that most firms consider indicators such as sales and profit margin (both imply the use of own plan as a referent) to be more important than market share (the latter implies the use of competition as a referent) when assessing organisational success. In contrast, the findings stated above contradict with suggestions made in the literature regarding the importance of performance comparisons relative to competition (e.g. Eccles and Pyburn, 1992; Kokkinaki and Ambler, 1999). Moreover, such findings raise questions about the degree of the respondents' market orientation, a construct implying attention to an external referent (i.e. the competitive environment) and associated with higher performance (e.g. Narver and Slater, 1990; Cadogan and Diamantopoulos, 1998).

In respect to the rest of the descriptive statistics shown in table 6.2 it is evident that the distribution of the own plan's global priorities shows some slight negative skewness (i.e. its mean value is lower than its median); in contrast, the competition's distribution of global priority weights is slightly positively skewed (i.e. the mean score is higher than the median). However, both distributions share the same standard deviation (s.d. 0.247), minimum (min 0.099) and maximum (max 0.901) global

priority values; below it is explained why the distributions have the same min and max scores, before actually discussing the significance of this finding.

According to the rationale underlying the AHP methodology, a decision maker "must be able to make comparisons and state the strength of his preferences. The intensity of these preferences must satisfy the reciprocal condition: If A is  $x$  times more preferred than B, then B is  $1/x$  more preferred than A" (Vargas, 1990, p.2). Comparisons between own plan and competition have been made in a pairwise fashion (three paired comparisons in all, reflecting three objectives) and the respondents' judgements have followed the aforementioned reciprocal condition. Consequently, for each export firm, the global priorities that correspond to own plan and competition reflect a *reciprocal* relation between the pair of variables compared (see also section 4.2.1); for example, a minimum value an export firm places on its own plan corresponds to a maximum value for competition and the opposite. As a result of such reciprocal comparisons, the own export plan and competition variables representing the aggregate global priorities (across firms) end up having the same dispersion as well as the same minimum and maximum scores (see table 6.2). Moreover, the fact that for each firm, the foregoing global priorities are expressed as fractions of the weight of the Goal (which is 1.00) means that they are always *complementary* to each other. The complementarity between the pair of global priorities corresponding to own plan and competition variables is illustrated in table 6.2 where it is evident that own plan's minimum score + competition's maximum score = 1.00 and the opposite (i.e. own plan maximum score + competition minimum score = 1.00).

With regards to the substantive meaning of the output presented above in table 6.2, the standard deviation and particularly the minimum and maximum scores point out that exporters' preferences show considerable differences in terms of the frames of reference utilised for the assessment of export performance. However such variations in export management practices have not been studied before nor taken into account in earlier attempts to assess export performance; according to Katsikeas et al., (2000), the great majority of the export related studies focused on internally oriented export performance measures as opposed to only a fraction of studies (i.e. 8%) that used competition as a referent. The almost exclusive adoption of an internal measurement orientation may reflect a narrow definition of performance "associated with low use

of external information and an unsure view of competitive strategy” (Day and Nedungadi, 1994, p.37). Although this study provides some empirical support for selecting internally oriented export indicators, the notable variation in the exporters’ preferences for the performance referents employed, suggests that over-emphasis on the former indicators often exhibited in export research may be misguided.

### 6.1.3 RELATIVE EMPHASIS ON SHORT VS LONG-TERM HORIZONS

Shifting attention to the time frames employed in export performance assessments, the same procedure as above is utilised to capture preferences for short- vs. long-term performance evaluations across export objectives (and frames of reference). Again, two new variables were created. The first variable represents the sum of the global priority weights for the short-term horizon across the three export objectives studied; the second variable represents the sum of the (G) weights for the long-term horizon, respectively. The aggregate (G) priority for the short-term horizon is computed by adding all the short-term global priorities *across* frames of reference and export objectives (see figure 6.2). The formula used to compute the short-term horizon’s (G) priority weight across export objectives, follows:

*Short-term's total (G) weight (across objectives) = [Export sales/own plan/short-term (G) + Export sales/competition/short-term (G)] + [Export profit/own plan/short-term (G) + Export profit/competition/short-term (G)] + [New product introduction / own plan / short-term (G) + New product introduction / competition / short-term (G)].*

Similarly, the long-term horizon’s (G) priority weight across export objectives is computed by summing-up all the relevant global priorities *across* frames of reference and export objectives (see figure 6.2). The formula used for the computation is:

*Long-term's total (G) weight (across objectives) = [Export sales/own plan/long-term (G) + Export sales/competition/long-term (G)] + [Export profit/own plan/long-term (G) + Export profit/competition/long-term (G)] + [New product introduction / own plan / long-term (G) + New product introduction / competition / long-term (G)].*

The descriptive statistics for the two variables are shown in the table 6.4.

**TABLE 6.4: DESCRIPTIVE STATISTICS FOR THE GLOBAL PRIORITIES OUTPUT RELATING TO THE TIME FRAME**

Statistics	Short-term horizon (Emphasis across export objectives)	Long-term horizon (Emphasis across export objectives)
<i>Mean</i>	0.435	0.565
<i>Median</i>	0.448	0.553
<i>Std. Deviation</i>	0.195	0.195
<i>Minimum</i>	0.10	0.12
<i>Maximum</i>	0.88	0.90

By looking at the min and max global priority values as well as the standard deviation shown in table 6.4, it is evident that export decision makers' views vary in terms of the time horizon used in export performance evaluations. However, respondents prefer on average, the long- (mean 0.565) rather than the short-term (mean 0.435) horizon *irrespective* of the frame of reference employed (see also the AHP (G) map in figure 6.2). Subsequently, a t-test was used to determine whether mean differences between the global priorities shown in the table 6.4 are actually significant. The result is presented in table 6.5.

**TABLE 6.5: GLOBAL PRIORITY MEAN DIFFERENCES BETWEEN SHORT- AND LONG-TERM HORIZONS USED ACROSS OBJECTIVES**

<i>Aggregate global priorities output (across export objectives)</i>	<i>Paired samples t-tests (2-tailed)</i>
Short-term (G=.435) versus Long-term (G=.565)	4.27, p=.000**

\*\* Significant result at the .01 level

The t-test statistic shows that the mean difference between the respective global priorities is highly significant. In contrast to Madsen's (1998) findings, this finding highlights the role of the long-term horizon in export performance evaluations (*across* export objectives and frames of reference) and indicates that exporters place less emphasis on short-termism. In terms of the actual time frame involved export firms

perceive the short-term horizon to range from 1 month to 2 years, while the long-term from 6 months up to 5 years. Although there is some overlap between the two time horizons, further inspection of the respective distributions revealed that for the vast majority of firms, 12 months seemed to be the cut-off value, separating the short- from the long-term horizon. Reliance on long-term performance evaluations thus, may well reflect the fact that the time period within which the success of an export strategy can be assessed does not necessarily coincide with financial accounting periods (i.e. *fiscal quarters and financial year-ends*) (Morgan et al., 2002).

While the aforementioned managerial practices downgrade the importance of short-term export performance assessments advocated recently (e.g. Lages and Lages, 2004), they also seem to be consistent with claims made in the marketing literature (e.g. Clark, 1999) that firms have shifted their performance focus, from solely short-term gains (i.e. an efficiency view of performance) into striving for success in the long run (i.e. an effectiveness view of performance). Thus, the results lend support to a dynamic (as opposed to static) assessment of performance proposed in the interdisciplinary business performance literature (e.g. Kaplan and Norton, 1992; Katsikeas, et al., 2000; Morgan, et al., 2002; Maltz et al., 2003).

Despite the fact that the findings reported above do not favour reliance on short-term indicators that is often exhibited in export research (e.g. see Mathyssens and Pauwels, 1996; Leonidou et al, 2002), the majority of the relevant work is dominated by static economic measures that may only “reflect past company actions and not specifically current export behaviour” (Katsikeas et al, 2000, p.504). The export literature has yet to endorse the former findings. In fact, failing to capture cross-firm variations in terms of the time frame employed is unlikely to facilitate the conduct of valid performance comparisons as explained later (in the discussion chapter 9).

#### **6.1.4 NORMALITY TESTS FOR VARIABLES CORRESPONDING TO THE EXPORT PERFORMANCE ASSESSMENT ACROSS OBJECTIVES**

The relevant AHP global priorities output associated with the assessment of export performance at an aggregate level (across export objectives) has also been tested for normality. The absence (or not) of normality is important from a methodological point

of view because it has implications for the multivariate analysis of the AHP output. The multivariate statistical analysis is hoped to answer questions such as why export decision makers (i) place higher importance on specific export objectives notably NPI as opposed to others, (ii) prefer their own firms' export plan as opposed to export competitors' performance and (iii) emphasise on long- relative to short-term export performance assessments (see research objectives in section 1.1). The satisfaction of the normality assumption provides an analyst with the option of multivariate techniques such as multiple regression that can be used to explain variations in the exporters' evaluations of export success (see more in chapter 7). To examine whether the relevant distributions of (G) weights satisfy assumptions of normality, the Kolmogorov-Smirnov (K-S) test has been used. The results are summarised below.

**TABLE 6.6: NORMALITY TESTS FOR VARIABLES RELATING TO EXPORT PERFORMANCE ASSESSMENTS ACROSS OBJECTIVES**

<i>AHP (global priorities) output</i>	<i>Kolmogorov-Smirnov (K-S) (2-tailed) test statistic (Z)</i>
<b>Export Objective</b>	
Export Sales	2.12, p=.000**
Export Profit	2.51, p=.000**
New Product Introduction (NPI)	2.11, p=.000**
<b>Frame of Reference (used across export objectives)</b>	
Own plan	1.99, p=.001**
Competition	1.988, p=.001**
<b>Time Frame (used across export objectives)</b>	
Short-term	.798, p=.547
Long-term	.791, p=.559

\*\* Significant result at the .01 level

Remember that (i) the null hypothesis assumes *no difference* between the distribution at hand and a theoretical normal curve while (ii) the interpretation of a *significant* K-S test statistic is that there is low probability of rejecting the null hypothesis when in fact the latter is correct. As table 6.6 shows the K-S test produced highly significant statistics for the variables relating to the export objectives, own plan and competition. According to the resulting statistics, the pertinent distributions diverge from a



theoretical normal curve; hence, the normality assumption is not justified. In contrast to the actual lack of fit between the foregoing distributions and a theoretical normal distribution, the global priorities for both the short- and long-term horizons utilised to assess export performance (across export objectives) can be described with a normal curve (see non-significant statistics in table 6.6).

All the findings discussed above are summarised at the end of this chapter.

## 6.2 AHP OUTPUT COMPARISONS WITHIN AN EXPORT OBJECTIVE

While the previous part of this chapter has outlined the exporters' performance assessment profile at an aggregate level (i.e. across objectives), this (second) part presents findings relating to the evaluation of individual export objectives and points out cross-firm differences in the assessment of each objective studied. The presentation begins with the two maps containing the rest of the AHP output; the aggregate (AHP) local priorities map (see figure 6.3) and the aggregate matrix (see figure 6.4). The aggregate local priorities (L) map expresses in numerical terms the allocation of the relative importance on the frames of reference and the time frames utilised when assessing *each* export objective's performance. Remember that the AHP (G) output presented earlier is used a lot more in the context of this study (in comparison to the AHP (L) map); yet, the latter can still be useful when looking into the assessment of performance within the context of *individual* export objectives (more details on the use of the AHP (L) map and the matrix follow in section 6.2.1).

Figure 6.3: Aggregate AHP (L) map of local priority weights

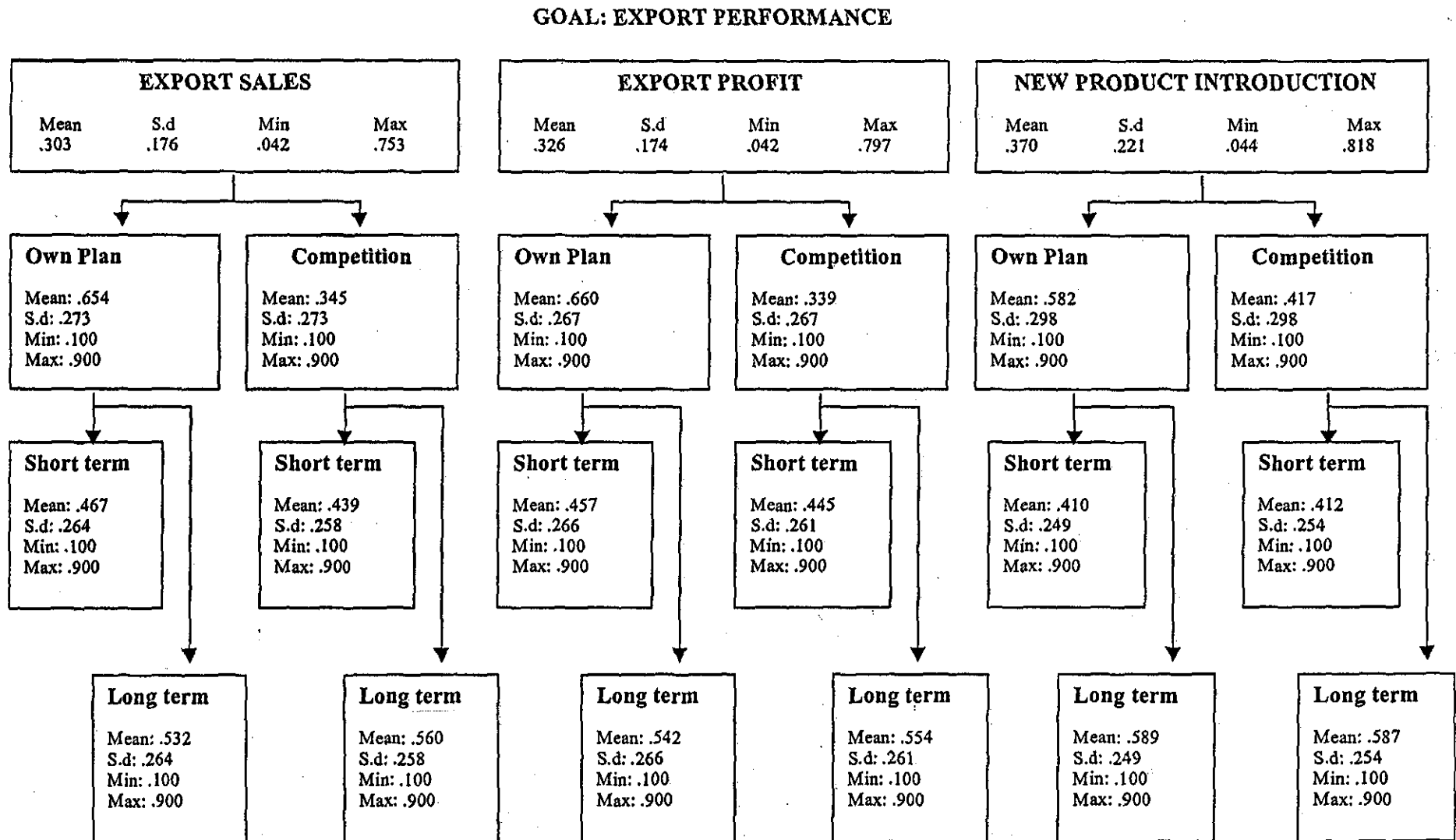


Figure 6.4: Aggregate Matrix of export performance assessments\*

	EXPORT SALES**		EXPORT PROFIT**		NPI**	
	Own plan	Competition	Own plan	Competition	Own plan	Competition
	1. 0.654	2. 0.345	3. 0.66	4. 0.339	5. 0.582	6. 0.417
Short-term	7. 0.308	8. 0.152	9. 0.303	10. 0.150	11. 0.255	12. 0.155
Long-term	13. 0.346	14. 0.193	15. 0.357	16. 0.189	17. 0.327	18. 0.261

\* Each box has been assigned with a number (see top left corner) that is used (instead of each box's content) to express the following sums.

<i>For Export Sales</i>	<i>For Export Profit</i>	<i>For New Product Introduction</i>
(1)+(2)=1.00	(3)+(4)=1.00	(5)+(6)=1.00
(7)+(8)+(13)+(14)=1.00	(9)+(10)+(15)+(16)=1.00	(11)+(12)+(17)+(18)=1.00
(7)+(13)=(1)	(9)+(15)=(3)	(11)+(17)=(5)
(8)+(14)=(2)	(10)+(16)=(4)	(12)+(18)=(6)

\*\* Boxes 1 to 6 contain local priority scores (see the aggregate AHP (L) map in figur...)

Boxes 7 to 18 contain *normalised* global priority scores (i.e. normalised against the respective objective's global priority weight).

### 6.2.1 THE AGGREGATE AHP (L) MAP AND THE AGGREGATE MATRIX

The aggregate AHP (L) map shown in figure 6.3 derives from combining the individual AHP local priority outputs produced by the EC 2000 for each of the 167 export firms of this study's sample. It is reminded that the local priorities at any level of the hierarchy are generated through reciprocal (pairwise) comparisons with respect to the *parent node* (or element); given that the latter is *always* assumed to have a priority of 1.00, local priorities at *any given level* always add to 1.00 (see more in section 4.2.1). In this context it should be noted that the local priority of the overall goal in the hierarchy (i.e. export performance) is the same as its global priority (which is 1.00); in consequence, each export objective's global and local priorities are identical (e.g. see both the aggregate mean global and local priorities for the export sales objective, one level below the goal in the hierarchy shown in figures 6.2 and 6.3 respectively). By studying the aggregate AHP (L) map one can determine (i) for *each* export objective individually, the relative emphasis export managers place on evaluating performance against own plan versus evaluating performance against competitor(s) and (ii) for each export objective/frame of reference combination (six in all, reflecting three objectives times two frames of reference), the relative emphasis placed on short- versus long-term considerations (see also examples regarding the interpretation of the AHP output in section 4.2.2).

Nevertheless, there are comparisons that cannot be made with the help of the local priorities output. As mentioned earlier (see section 4.2.1), local priorities at any given level in the hierarchy are always computed with respect to a parent node and reflect relative preferences with respect to that *particular* node. For instance, the parent node for the time horizon is the frame of reference (see AHP (L) map in figure 6.3); the time horizons' local priorities refer *specifically* to its parent node namely, the frame of reference (*not* the export objectives). Hence, it does not make sense for any given export objective, to aggregate first the short-term local priorities (across the two frames of reference) then the long-term local priorities (across both frames of reference) and subsequently compare (a) the short- and long-term horizons' local priorities with respect that particular objective; (b) nor compare two export objectives in terms of, say, their short-term horizons' local priorities so as to find out which of the two objectives is more likely to be assessed statically (in the short-term).

To be able to make the aforementioned comparisons (see (a) and (b) above), it would be better to use the respective time horizons' global priorities. Specifically, it was shown in table 4.1 in section 4.2.1 that the time horizons' global priorities (per export objective) derive from *each* export objective's global priority weight. To be able to make valid comparisons within (as well as across) export objectives then, it would be better to *normalise* (i.e. adjust) *each* time horizon's global priority to the respective export objective's global priority (see AHP (G) map in figure 6.2). The *normalisation* (or adjustment) requires the global priority of the former to be the numerator and the global priority of each objective to be the denominator; the formula is: *Time frame's global priority / Export objective's global priority*. Essentially this particular ratio represents a time horizon's weight *relative* (or *in proportion*) to the respective export objective's weight. Therefore, the resulting (*normalised*) priorities for each export objective/frame of reference/time horizon combination (twelve in all, reflecting three objectives times two frames of reference times two time horizons) facilitate the conduct of comparisons on equal terms within (as well as among) export objectives. Such comparisons are presented later in this chapter (see an example in section 6.2.2.2); the normalised weights computed with the help of the formula mentioned above are included in the aggregate matrix (see figure 6.4).

The construction of the aggregate matrix of export performance assessments combines local and normalised global priority weights such as those described above. This matrix depicts the relative importance (or emphasis) placed on specific frames of reference and time horizons employed when evaluating the performance of *each* export objective as a separate entity. Specifically, the matrix includes eighteen (18) boxes and each box has been assigned with a number in the top left corner (for presentation purposes). Thus it summarises: (i) the mean local priority scores attributed to the different frames of reference used for each objective's performance evaluation (boxes 1 to 6 in figur.. above) and (ii) the *normalised* mean global priority scores for each export objective/time horizon combination (12 in all, reflecting three objectives times four horizons) (boxes 7 to 18 in figure 6.4). This matrix is complementary to the AHP (G) and (L) maps (presented in figures 6.2 and 6.3 respectively) and serves cross-objective comparisons on the preference for each frame of reference/time frame combination used to assess *individual* export objectives (see

the conceptualisation of an export objective's assessment in section 3.3). Findings relating to the performance evaluation of *each* export objective follow.

## 6.2.2 THE EXPORT SALES OBJECTIVE

This section provides an overview of findings relating to the performance evaluation of the export sales objective. It describes statistically the relevant AHP output and discusses the relative importance placed on (i) the frames of reference (i.e. own plan and competition), (ii) the time frames (short- and long-term) and (iii) the frame of reference/time frame combination, when the export sales objective is assessed. Relevant statistics are presented in summary tables in order to facilitate the ensuing discussion. Table 6.7 summarises the export sales-related output, in terms of mean, median, standard deviation, minimum and maximum scores.

**TABLE 6.7: DESCRIPTIVES FOR THE EXPORT SALES OUTPUT**

<i>Export Sales</i>	<i>Mean</i>	<i>Median</i>	<i>Std.Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Own plan (local priority)	0.654	0.833	0.273	0.100	0.900
Competition (local priority)	0.345	0.167	0.273	0.100	0.900
Own plan/short-term (normalised)	0.308	0.250	0.232	0.008	0.810
Own plan/long-term (normalised)	0.346	0.375	0.234	0.007	0.815
Competition/short-term (normalised)	0.152	0.085	0.174	0.009	0.808
Competition/long-term (normalised)	0.193	0.116	0.187	0.009	0.811
Short-term (normalised sum)	0.460	0.498	0.237	0.101	0.897
Long-term (normalised sum)	0.539	0.502	0.237	0.100	0.901

The standard deviations, minimum and maximum scores shown in table 6.7 suggest great variation among exporters in the approach adopted for the evaluation of export sales performance. Also note that all the variables representing the assessment of the export sales' performance have been tested for normality using the K-S test. The latter resulted into highly significant statistics (see table 6.13, in section 6.2.5) indicating that all the respective distributions diverge from a theoretical normal curve. Although

the normality assumption is not satisfied, t-tests have been used throughout the AHP output (for the same reason as before) to examine whether there are significant mean differences between groups of exporters emphasising (i) the own plan vs. competition referent, (ii) a short- vs. long-term horizon and (iii) alternative frame of reference/time frame combinations such as those shown in table 6.7 above. As mentioned earlier (see section 6.1.1), the use of the former parametric test is recommended when there is a reasonably large ( $n > 30$ ) sample size (Diamantopoulos and Schlegelmilch, 1997) and in the context of this study that size was considered to be quite large (i.e.  $n = 167$ ).

Table 6.8 below summarises the resulting statistics for the group mean comparisons undertaken between export sales assessment-related variables (the respective mean scores are shown in table 6.7).

**TABLE 6.8: SIGNIFICANT MEAN WEIGHT DIFFERENCES IN THE ASSESSMENT OF THE EXPORT SALES OBJECTIVE**

<i>Export sales related output</i>	<i>Paired samples t-tests (2-tailed)</i>
<i>Own Plan vs. Competition</i>	7.28, $p = .000^{**}$
<i>Own Plan/Short-term vs. Long-term</i>	1.31, $p = .189$
<i>Competition/Short-term vs. Long-term</i>	2.2, $p = .029^*$
<i>Short-term vs. Long-term</i>	2.14, $p = .033^*$

\*\* Significant result at the .01 level

\* Significant result at the .05 level

#### 6.2.2.1 Export sales assessment: emphasis on own plan vs. competition

With respect to the export sales objective's assessment, the average relative preference exporters place on their own export plan ( $L = 0.654$ ) is higher in comparison to competition ( $L = 0.345$ ) (see boxes 1 and 2 in figure 6.4). Moreover, the t-test statistic (see table 6.8) indicates that the difference in the own plan's mean local priority is highly significant ( $t = 7.28$ ,  $p = 0.00$ , 2-tailed). Although firms differ in terms of the relative attention paid to own plan vs. competition referents (see minimum, maximum and standard deviation scores in table 6.7), the respective t-test result suggests that export decision makers exhibit a clear preference for export sales'

performance assessments against their own export sales plan rather than their export competitors' sales performance. This is consistent with findings presented earlier in section 6.1.3, where it was evident that assessments of export success rely less on competitive benchmarking; such assessments may reflect (to an extent) managerial practices relating to the documentation of export firms' performance (see more in section 8.2.1). Also, note that there are only a handful of studies in export research that used measures reflecting comparisons with competitors' export sales performance (see Katsikeas et al, 2000). Although no justification was provided for that particular measure selection, the former seems to be in line with export practices.

#### 6.2.2.2 Export sales assessment: emphasis on short- vs. long-term horizon

To determine the relative importance of a short- as opposed to a long-term time frame when the export sales objective is evaluated across frames of reference, two variables were used; the first, for the short- and the other for the long-term time horizon. The first represents the sum of the short-term horizon's global priorities (across the two frames of reference) *normalised* to the export sales objective's global priority. The formula used for the normalisation (see also 6.2.1) is:  $[(Own\ plan-Short-term's\ global\ priority + Competition-Short-term's\ global\ priority)/Export\ sales'\ global\ priority]$

A similar formula was used for the second variable representing the sum of the long-term horizon's global priorities (across the two frames of reference) *normalised* to the export sales objective's global priority:  $[(Own\ plan-Long-term's\ global\ priority + Competition-Long-term's\ global\ priority)/Export\ sales'\ global\ priority]$ .

The descriptive statistics for the resulting (normalised) output is included in table 6.7 showing clearly (see relevant standard deviations, minimum and maximum scores) that export firms differ in terms of the relative emphases placed on the time horizons. The variable corresponding to the short-term horizon has a (normalised) mean score of 0.460, while the respective score for the long-term horizon is 0.539. The t-test used to compare the foregoing means, resulted in a significant statistic ( $t=2.14$ ,  $p=0.033$ , 2-tailed) indicating that the mean difference between a long- and a short-term horizon is statistically significant (see table 6.8).



From a practitioner's point of view, a long term horizon emerges as the most attractive option to use for the measurement of export sales performance although the evidence shows that performance evaluations are undertaken both statically (capturing export sales performance in the short-term) as well as dynamically (capturing changes in export sales performance over a period of time). However, relevant studies in exporting have not acknowledged cross-firm variations in terms of the time perspective adopted for export sales assessments (for a review see Katsikeas et al., 2000); specifically, attention was paid to indicators offering a short-term view as opposed to focusing either on long-term or maintaining a balanced perspective. The next section looks into the export sales performance assessments in detail. It presents findings relating to the evaluation of the export sales objective against different frame of reference/time frame combinations.

### 6.2.2.3 Emphasis on Export Sales/Own plan/Short- vs. Long-term horizon

The aggregate AHP (G) map (see figure 6.2), shows that when the export sales objective is assessed against own plan in particular, the actual difference between short-term's mean global priority (mean 0.094) from the respective long-term horizon's score (mean 0.106) is only marginal. For comparison purposes however, the foregoing time horizons' global priority weights are normalised against the export sales global priority weight (see more about normalisations in sections 6.2.21 and 6.2.2.2). The formulae used for the normalisation are: (i) *Own plan-Short-term's global priority / Export sales global priority* and (ii) *Own plan-Long-term's global priority / Export sales global priority*.

As before, two variables were used. The first represents the own plan/short-term (normalised) priorities while the second variable the own plan/long-term (normalised) priorities. Descriptive statistics for the normalised output are shown in table 6.7. The former variable in particular has a mean score of 0.308 and the latter's mean score is 0.346, respectively. The t-test statistic is non-significant ( $t=1.31$ ,  $p=0.189$ , 2-tailed) indicating there is no statistically significant difference between the emphases placed on short- vs. long-term considerations (see table 6.8). This suggests a balance between static (short-term) and dynamic (long-term) assessments of export sales performance

against own plan, pointing to measures such as export sales volume, export sales ratio as well as export sales growth, export sales ratio growth respectively.

#### **6.2.2.4 Emphasis on Export Sales/Competition/Short- vs. Long-term horizon**

Following the procedure described in the previous section 6.2.2.3 the global priorities relating to the short- and long-term horizons when assessing export sales performance relative to competition were normalised against the export sales' global priorities. The formulae used for normalisations are: (i) *Competition-Short-term's global priority / Export sales global priority* and (ii) *Competition-Long-term's global priority / Export Sales global priority*.

Again, two variables, one for the short and the other for the long-term were used the mean scores of which are 0.152 and 0.193 respectively (see table 6.7). Once again (see also section 6.2.2.3), the emphasis of managerial export sales evaluations varies from a short- to a long-term (see minimum, maximum and standard deviation in table 6.8). Yet, the t-test statistic is significant at the 5% level ( $t=2.2$ ,  $p=0.029$ , 2-tailed) suggesting a significant mean difference between the time horizons practitioners use when monitoring export sales performance against competitors' performance. In line with earlier findings (see 6.1.3 and 6.2.2.2), this result highlights a preference for a long-term horizon and points out measures such as export market share growth (implying a long-term focus against competition) as more popular in comparison with measures reflecting a short-term view against competitors (e.g. export market share).

#### **6.2.2.5 Summary of findings on the assessment of the export sales objective.**

The output presented above shows that individual firms differ substantially in their assessment of export sales performance. This is clearly demonstrated in the minimum, maximum and standard deviation scores computed. Such cross-firm differences have not been captured so far in export research. According to these findings, it seems legitimate to select export sales measures that reflect either static (short-term) or dynamic (long-term) performance assessments against both own plan and competition referents. Yet, the empirical findings suggest that respondents (on average) consider (i) export sales evaluations against firms' *own plan* as more *important* relative to

competition (see section 6.2.2.1). The analysis also showed that there is (ii) a *significant difference* between the average emphasis respondents place on short- vs. long-term considerations when evaluating their export sales objectives' attainment *across* referents (see section 6.2.2.2). In fact, the results highlight a *long-term* horizon as the more preferable between the two. By implication, researchers should preferably use long-term export sales measures that do not require comparisons with export competitors. Further analysis (at a disaggregate level) actually showed that attention should be paid to the time horizon when assessing export sales performance against *different* referents. With respect to the own plan referent (see 6.2.2.3) in particular, the measures selected may reflect either a short-term (static) or a long-term (dynamic) orientation because no significant difference has been found between the two. Such measures are for instance, export sales volume, export sales ratio or export sales growth; these measures have been used extensively in the export performance literature (see Katsikeas et al, 2000). With respect to export sales performance evaluations against competition (see 6.2.2.4), it seems that using measures such as export market share growth (as opposed to export market share) is in line with this study's findings pointing to a long-term horizon as more important in comparison.

### **6.2.3 THE EXPORT PROFIT OBJECTIVE**

This section presents the AHP output relating to the performance assessment of the export profit objective. Specifically, it discusses the importance export firms place on (i) the frames of reference, (ii) the time frames and (iii) the frame of reference/time frame combinations when export profitability is assessed. Relevant statistics are presented in summary tables. Table 6.9 in particular, summarises the export profit related output in terms of mean, median, standard deviation, minimum and maximum scores. Once again the standard deviations and particularly the difference between the respective minimum and maximum scores show that export profitability assessments vary across export firms.

**TABLE 6.9: DESCRIPTIVES FOR THE EXPORT PROFIT OUTPUT**

<i>Export Profit</i>	<i>Mean</i>	<i>Median</i>	<i>Std.Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Own plan (local priority)	0.660	0.833	0.267	0.100	0.900
Competition (local priority)	0.339	0.167	0.267	0.100	0.900
Own plan/short-term (normalised)	0.303	0.249	0.230	0.007	0.811
Own plan/long-term (normalised)	0.357	0.375	0.227	0.007	0.811
Competition/short-term (normalised)	0.150	0.084	0.172	0.007	0.807
Competition/long-term (normalised)	0.189	0.104	0.185	0.009	0.811
Short-term (normalised sum)	0.453	0.498	0.238	0.099	0.896
Long-term (normalised sum)	0.546	0.500	0.239	0.096	0.904

The t-test was used as before (see section 6.1.1) to determine whether there are any significant mean differences between (i) performance referents, (ii) time horizons and (iii) frame of reference/time horizon combinations employed to assess export profitability. The resulting t-test statistics are shown in table 6.10.

**TABLE 6.10: SIGNIFICANT MEAN WEIGHT DIFFERENCES IN THE ASSESSMENT OF THE EXPORT PROFIT OBJECTIVE**

<i>Export profit related output</i>	<i>Paired samples t-tests (2-tailed)</i>
<i>Own Plan vs. Competition</i>	7.76, p=.000**
<i>Own Plan-Short-term vs. Long-term</i>	1.85, p=.066
<i>Competition-Short-term vs. Long-term</i>	2.12, p=.035*
<i>Short-term vs. Long-term</i>	2.49, p=.014*

\*\* Significant result at the .01 level

\* Significant result at the .05 level

The findings relating to export profitability assessments are presented in detail below.

### 6.2.3.1 Export profit assessment: emphasis on own plan vs. competition

Table 6.9 shows that the average relative preference exporters place on their own plan (mean 0.660) is higher in comparison to competition (mean 0.339). Moreover, the t-test statistic (see table 6.10) indicates a highly significant difference for the own plan's mean local priority ( $t=7.76$ ,  $p=0.000$ , 2-tailed). It seems that respondents prefer to compare export profitability against their firms' *own export plan* rather than using their export competitors' profitability as a benchmark. In light of the findings discussed earlier concerning the evaluation of the export sales objective (see section 6.2.2), firms tend to be consistent in their choice of the frame of reference used to interpret the achievement of their export profit and export sales objectives. Such finding is not surprising considering the relative importance of the own plan highlighted earlier (see section 6.1.2) but contrasts with the claim that internally oriented managerial views of competitive advantage have been associated with lower levels of economic performance (Day and Nedungadi, 1994).

### 6.2.3.2 Export profit assessment: emphasis on short- vs. long-term horizon

To be able to make comparisons between the relative emphases placed on short- as opposed to long-term considerations when the export profit objective is evaluated (*across* frames of reference), two variables are used; one for the short and the other for the long-term horizon (i.e. a similar procedure was employed for export sales, see section 6.2.1). Each variable represents the sum of a time horizon's global priority weights (across the two referents) normalised to the export profit objective's global priority. The formulae used for the normalisation are: (i) [*Own plan-Short-term's global priority + Competition-Short-term's global priority*]/*Export profit's global priority*] and (ii) [*Own plan-Long-term's global priority + Competition-Long-term's global priority*]/*Export profit's global priority*].

The descriptive statistics for the resulting (normalised) output are shown in table 6.9; it is clear that the relative emphases on both time horizons vary substantially among firms (see standard deviations and differences between minimum and maximum scores). However, the variable corresponding to the short-term horizon has a

(normalised) mean score of 0.453 but the respective (normalised) score for the long-term horizon is 0.546. The respective t-test statistic (see table 6.10) indicates that the difference in the long-term horizon's mean priority is statistically significant ( $t=2.49$ ,  $p=0.014$ , 2-tailed). The emergence of a *long-term* perspective as the most preferred time frame shows that export firms focus on export profit maximisation in the long run. This is actually in line with findings presented earlier in section 6.1.4, showing that export performance assessments (across objectives) are predominantly conducted with long-term considerations in mind. Managerial practices seem to have endorsed criticism made in the relevant business literature against the exclusive use of static, short-term (accounting-based) indicators that capture only past strategies' financial performance (Day and Wensley, 1988; Otley, 1994; Ittner and Larker, 1998a). The export literature however, seems to have captured neither the former empirically determined managerial orientation nor the cross-firm variations mentioned above; to be more specific, it is only about 9% of the relevant studies that adopted a long-term perspective to translate the export profit objective into indicators so as to evaluate export profit performance (see Katsikeas et al., 2000). The next section looks into such evaluations in detail (at a disaggregate level) presenting evidence on profitability assessments against different frame of reference/time frame combinations.

### 6.2.3.3 Emphasis on Export profit/Own plan/Short- vs. Long-term horizon

Shifting attention to the time horizons utilised for the assessment of the export profit objective relative to own plan, the short and long-term horizons' global priorities (see 4<sup>th</sup> level in the hierarchy shown in figure 6.2) were normalised against the export profit's global priority weight. The formulae used for the normalisations are: (i) *Own plan-Short-term's global priority/Export profit's global priority* and (ii) *Own plan-Long-term's global priority/Export profit's global priority*. As before (remember that a similar procedure was followed for the export sales objective) two variables have been used for comparison purposes. The first represents the own plan/short-term normalised priorities and the second, the own plan/long-term normalised priorities for the export profit objective.

The descriptive statistics in table 6.9 show great differences across firms (see standard deviation and particularly the minimum and maximum scores) in terms of the export

profit objective's performance evaluation. It is also evident that the mean normalised priority for the own plan/short-term is lower (mean 0.303) than the respective score (mean 0.357) for the own plan/long-term combination (see table 6.9 or boxes 9 and 15 in figure 6.4). The respective t-test statistic ( $t=1.85$ ,  $p=0.066$ , 2-tailed) indicates that no statistically significant difference between the emphases on short- vs. long-term considerations when export profitability is evaluated against own plan. In other words, the findings do not underscore any preference for particular indicators used to measure the attainment of the export profit objective.

#### **6.2.3.4 Emphasis on Export Profit/Competition/Short- vs. Long-term horizon**

Following the same procedure for the export profitability's performance evaluation against competition, the global priorities corresponding to the short- and long-term horizons were normalised against the export profit's global priority. The formulae used for normalisations are: (i) *Competition-Short-term's global priority / Export profit's global priority* and (ii) *Competition-Long-term's global priority / Export profit's global priority*.

The difference between the relevant minimum, maximum and standard deviation scores shown in table 6.9 implies that exporters' profitability evaluations relative to competitors can vary from a short- to a long-term focus. Furthermore, the mean scores for the short- and long-term horizons' normalised global priorities are 0.150 and 0.189 respectively (see table 6.9 or boxes 10 and 16 in figure 6.4) and the respective t-test statistic (see table 6.10) is significant at the 5% level ( $t=2.12$ ,  $p=0.035$ , 2-tailed). The latter result indicates a significant mean difference between the time frames employed when undertaking export profitability assessments against competition. This finding points out once again the greater importance exporters attribute to a long-term orientation (see relevant findings section 6.2.3.2 and 6.2.3.3), which is something that has to be considered when translating the export profit objective into indicators.

#### 6.2.3.5 Summary of findings on the assessment of the export profit objective.

In general, export firms demonstrate significant differences in the monitoring of their export profitability. However, export firms' *own plan* is found to be the dominant frame of reference across time frames (see section 6.2.3.1) and the preference for a *long-term* horizon (see 6.2.3.2) is found to be significantly higher (across both frames of reference). In contrast, when looking into export profit evaluations against *each* referent (i.e. own plan and competition) exporters' approaches vary; yet, there is *no* significant emphasis on any particular time horizon when translating the export profit objective into financial indicators. Specifically, there is *not any* significant difference between the mean emphases placed on a short- vs. long-term horizon when export profitability is assessed against own plan (see 6.2.3.3). The same is also the case when the referent is the competition (see 6.2.3.4).

Unlike previous findings in exporting (see Madsen, 1998), this study points out that on average, exporters seem to *pay less* attention to the maximisation of their short-term export profits. Instead, the measurement of financial performance is more likely to be approached dynamically (with a long-term perspective in mind), preferably using firms' own export plan. Such an approach indicates an emphasis on the firms' long-term prosperity; this is also in line with recent empirical findings in the performance literature reporting that profit growth (which implies a long-term view) tends to be more important than ROI (a short-term measure) when assessing business success (see Maltz et. al., 2003).

With regards to the assessment of the export profit objective in the literature, earlier export studies do not tend to endorse the above export performance measurement practices. Specifically, exporters' preferences for long-term profitability evaluations against own plan suggest measures such as export profit growth or export profit ratio growth. Yet, the majority of relevant studies used measures that do not reflect attention to both own plan and long-term horizon. In fact, out of 40 empirical studies utilising export profit-related indicators, only 8 (20%) employed indicators such as export profit growth (see Katsikeas et al., 2000). Consequently, the relevant literature



is less likely to reflect managerial views of financial success, which may have implications when studying the determinants of such success.

#### 6.2.4 THE NEW PRODUCT INTRODUCTION (NPI) OBJECTIVE

This section provides a statistical description of the output relating to the assessment of the new product introduction (NPI) objective; remember that the NPI was found to be the *most* important objective in comparison (see aggregate AHP (G) map in figure 6.2). The NPI performance assessment's output is summarised in terms of mean, median, standard deviation, minimum and maximum scores in Table 6.11.

**TABLE 6.11: DESCRIPTIVES FOR THE NPI RELATED OUTPUT**

<i>NPI</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Own plan (local priority)	0.582	0.500	0.298	0.100	0.900
Competition (local priority)	0.417	0.500	0.298	0.100	0.900
Own plan/short-term (normalised)	0.255	0.150	0.227	0.010	0.811
Own plan/long-term (normalised)	0.327	0.250	0.227	0.013	0.811
Competition/short-term (normalised)	0.155	0.093	0.154	0.009	0.810
Competition/long-term (normalised)	0.261	0.189	0.231	0.007	0.814
Short-term (normalised sum)	0.410	0.446	0.229	0.099	0.901
Long-term (normalised sum)	0.589	0.559	0.230	0.099	0.906

Based on the mean scores shown in table 6.11, the t-test was used as before (see sections 6.1.1 and 6.2.1) to identify whether there are any significant group mean differences between exporters' emphases on (i) the frames of reference, (ii) the time frames and (iii) the frame of reference/time frame combinations adopted when the NPI objective's attainment is assessed. Table 6.12 shows the resulting t-test statistics for the four group mean comparisons undertaken.

**TABLE 6.12: SIGNIFICANT MEAN WEIGHT DIFFERENCES IN THE PERFORMANCE ASSESSMENT OF THE NPI OBJECTIVE**

<i>NPI related output</i>	<i>Paired samples t-tests (2-tailed)</i>
<i>Own Plan vs. Competition</i>	3.57, p=.000**
<i>Own Plan-Short-term vs. Long-term</i>	2.72, p=.007**
<i>Competition-Short-term vs. Long-term</i>	5.40, p=.000**
<i>Short-term vs. Long-term</i>	5.04, p=.000**

\*\* Significant result at the .01 level

#### 6.2.4.1 NPI assessment: emphasis on own plan vs. competition

Exporters generally differ in terms of the emphasis they place on the frame of reference employed for NPI performance evaluations (see minimum, maximum and standard deviation scores in table 6.11). However, the mean local priority score for own plan (mean 0.582) is higher than the respective mean score for competition, which is 0.417 (see also boxes 3 and 6 in the aggregate matrix, figure 6.4). The t-test used to examine whether these mean scores are statistically different (see table 6.12), resulted in a highly significant statistic ( $t=3.57$ ,  $p=0.000$ , 2-tailed) indicating that export firms' own plan is much preferred to competition when the NPI objective is assessed. Hence, when evaluating the NPI objective's performance, the adoption of any measure that assumes comparisons with competition is less likely to reflect the average manager's point of view. This finding is similar to previous findings relating to the assessment of the export sales (see 6.2.2.1) and export profit objectives (see 6.2.3.1) and demonstrates that exporters are largely consistent in the frame of reference they adopt when evaluating different export objectives.

#### 6.2.4.2 NPI assessment: emphasis on short vs. long-term horizon

The relative emphasis exporters place on short- vs. long-term considerations when assessing NPI is reflected in the sum of each time horizon's global priorities (across both frames of reference). To be able to compare the relative (weighted) emphases on the two time horizons, the same procedure was followed as before (see sections 6.2.2

and 6.2.3). Specifically, the sum of the global priorities corresponding to the short-term horizon (*across* the two referents) was normalised against the NPI objective's global priority weight by using the formula: (i)  $[(\text{Own plan}/\text{Short-term's global priority} + \text{Competition}/\text{Short-term's global priority})/\text{NPI's global priority}]$

Then the normalisation was undertaken for the long-term horizon using the formula: (ii)  $[(\text{Own plan}/\text{Long-term's global priority} + \text{Competition}/\text{Long-term's global priority})/\text{NPI's global priority}]$ .

The descriptive statistics for the normalised output shown in table 6.11 indicate that the relative preference for the time frame varies among respondents (see standard deviations, minimum, maximum scores). Subsequently, the t-test was used to identify whether there is any significant mean difference between the group of exporters emphasising the long-term horizon (mean score 0.589) and those focusing on the short-term (mean score 0.410). The resulting t-test statistic (see table 6.12) is highly significant ( $t=5.04$ ,  $p=0.000$ , 2-tailed) highlighting the fact that firms place greater emphasis on the long-term assessment of their NPI objective's performance.

Despite differences in the exporters' preferences for short- vs. long-term NPI evaluations, the higher average emphasis firms place on NPI success in the long run is not surprising considering the strategic importance of NPI for export performance (see section 6.1.1). This finding is consistent with previous findings highlighting the relative importance of the long-term horizon in export sales' and export profitability evaluations. Taken together the findings (so far) point out that irrespective of the export objective assessed, exporters are on average, less interested in short-term (efficiency-oriented) results *per se*. The implications for the translation of objectives into indicators (i.e. measure selection) are discussed in chapter 9. The next section presents detailed findings on NPI assessments (at a disaggregate level) involving different frame of reference/time frame combinations.

#### **6.2.4.3 Emphasis on NPI/own plan/short- vs. long-term horizon**

The global priorities for the short and long-term time frames used for NPI evaluations against firms' own export plan, have been normalised to the NPI's global priority. The normalised weights for the short-term horizon are based on the formula: (i) *Own*

*plan/short-term's global priority/NPI's global priority*. Similarly, the formula used to normalise the weighted importance of the long-term horizon used in NPI assessments against own plan is: (ii) *Own plan/long-term's global priority/NPI's global priority*.

The short-term horizon's mean score is 0.255, which is lower than the long-term's score (mean 0.327) shown in table 6.11 (or see boxes 11 and 17 in the aggregate matrix in figure 6.4). The t-test was employed in order to determine whether the mean scores mentioned above are significantly different. Indeed the t-test statistic (see table 6.12) is highly significant ( $t=2.72$ ,  $p=0.007$ , 2-tailed). Hence, the majority of exporters seem to be more interested in measuring NPI success in the long-run (as opposed to any short-term results) against firms' own export plans. This result is in line with the significant preference exporters place on the long-term horizon in combination with the own plan referent when assessing export profit.

#### 6.2.4.4 Emphasis on NPI/competition/short- vs. long-term horizon

Following the same procedure that was used in section 6.2.4.3, the short- and long-term global priorities associated with the NPI's evaluation against competition have been normalised to the NPI objective's global priority weight (see mean scores in the aggregate AHP (G) map, figure 6.2). The two formulae used for the respective normalisations are: (i) *Competition/Short-term's global priority/NPI's global priority* and (ii) *Competition/Long-term's global priority/NPI's global priority*.

The variable reflecting the normalised global priority sums for the short-term horizon has a lower mean score (0.155) in comparison to that, representing the respective long-term horizon's score (0.261) (see both scores in table 6.11). Moreover, table 6.12 shows that the t-test statistic produced is highly significant at the 5% level ( $t=5.40$ ,  $p=0.000$ , 2-tailed) thereby emphasising (once again) the long-term horizon's *higher* average importance when evaluating the NPI objective's performance against export competitors. The result suggests that exporters' views of NPI success are *not* short-term oriented *irrespective* of the referent employed. This particular finding is in line with the findings presented earlier (see sections 6.2.4.2 and 6.2.4.3).

#### 6.2.4.5 Summary of findings on the assessment of the NPI objective

The AHP output presented above shows that individual firms exhibit differences in the approach they use to assess NPI performance. This is clearly demonstrated in the relevant minimum, maximum and standard deviation scores shown in table 6.11. In addition, the mean importance exporters place on NPI assessments against own plan is found to be *significantly higher* relative to those assessments made against export competitors' performance (see section 6.2.4.1). Further analysis of the output shows that the average emphasis respondent firms place on the *long-term* evaluation of the NPI objective (across frames of reference) is *significantly higher* in comparison (see section 6.2.4.2). The importance of the long-term horizon has also been emphasised for each referent separately (see sections 6.2.2.3 and 6.2.2.4) thereby pointing out that long-term assessments can be "critical to the appraisal of the long-term existence of the firm" (Katsikeas et al., 2000, p.501)

In light of the above, one may conclude that, on average the performance evaluation of NPI is undertaken *dynamically* and against export firms' *own plan*. Bearing in mind that the NPI objective is found to be more important in comparison, future studies in exporting should focus on measuring new products' long-term success relative to export firms' plans as opposed to providing information relating to short-term new product-related performance relative to export competitors'.

#### 6.2.5 Normality tests for all variables relating to each objective's assessment.

The AHP output presented in this (second) part of this chapter was tested for normality. To be specific, the Kolmogorov-Smirnov (K-S) test was used as before (see section 6.1.5) to examine whether the distributions of the relevant weights corresponding to each export objective's performance assessment, satisfy the normality assumption. The results are summarised in table 6.13 below. It is obvious that the K-S test has produced highly significant statistics for all the variables concerned. It is evident from the resulting statistics that the respective distributions diverge from a theoretical normal curve, which suggests that *none* of the variables discussed above satisfies the normality assumption.

As mentioned earlier in section 6.1.5, the actual lack of fit between a theoretical normal distribution and the dependent variables (the AHP output) has methodological implications for this study. This is because the absence of normality restricts the options offered to the analyst regarding the use of multivariate statistical analysis techniques such as multiple regression (see more in chapters 7 and 8).

**TABLE 6.13: NORMALITY TESTS FOR VARIABLES RELATING TO THE PERFORMANCE ASSESSMENT OF EACH EXPORT OBJECTIVE**

<i>AHP (global priorities) output</i>	<i>Kolmogorov-Smirnov (K-S) (2-tailed) test statistic (Z)</i>
<b>Export Sales</b>	
Export Sales/Own plan	1.79, p=.003**
Export Sales/Competition	2.80, p=.000**
Export Sales/Own/Short-term	2.39, p=.000**
Export Sales/Own/Long-term	2.65, p=.000**
Export Sales/Competition/Short-term	2.83, p=.000**
Export Sales/Competition/Long-term	3.24, p=.000**
<b>Export Profit</b>	
Export Profit/Own plan	1.70, p=.006**
Export Profit/Competition	2.61, p=.000**
Export Profit/Own plan/Short-term	2.36, p=.000**
Export Profit/Own plan/Long-term	2.27, p=.000**
Export Profit/Competition/Short-term	3.39, p=.000**
Export Profit/Competition/Long-term	2.53, p=.000**
<b>New Product Introduction (NPI)</b>	
NPI/Own plan	2.40, p=.000**
NPI/Competition	2.88, p=.000**
NPI /Own plan/Short-term	2.78, p=.000**
NPI/Own plan/Long-term	2.63, p=.000**
NPI/Competition/Short-term	3.10, p=.000**
NPI/Competition/Long-term	2.77, p=.000**

\*\* Significant result at the .01 level

### 6.3 INCONSISTENCY IN THE RESPONDENTS' JUDGEMENTS.

The AHP methodological approach (operationalised with the help of the EC 2000 software) requires the examination of the quality of the respondents' input (Dyer and Forman, 1991). This is reflected in the consistency of the reciprocal judgements made when undertaking comparisons pairwise. The computerised version of the AHP (i.e. the Expert Choice 2000 software) facilitated the computation of an "inconsistency ratio" for each AHP model corresponding to each respondent firm. Given that the sample consists of 167 firms altogether, this is also the number of ratios that have been computed.

In general, accurate judgements are fairly consistent but perfect consistency is not common in real life and should not be expected when employing the AHP; as a rule of thumb, the recommended inconsistency that a respondent's judgements should demonstrate is 0.1 (10%) (see Dyer and Forman, 1991). Descriptive statistics about the inconsistency exhibited across the sample are displayed in table 6.14. This provides information about two groups of exporters' input. The first consists of *all* the firms in the sample (167 in total) and the second group (93 firms) entails only those exporters whose judgements tend to *exceed* the acceptable level of inconsistency mentioned above. The mean inconsistency ratio (across the sample) is 0.41, while 93 out of 167 respondents (55.6%) seem to have made inconsistent judgements. In contrast, the ratio is within the acceptable range for 74 firms (44.4%) that may be seen to have provided more "accurate" judgements (Saaty, 1990).

**Table 6.14: Descriptive statistics for the Inconsistency ratio**

	<i>Inconsistency</i>	<i>Inconsistency &gt; 0.11</i>
<i>Number of firms</i>	167	93
<i>Mean</i>	0.41	0.73
<i>Median</i>	0.13	0.42
<i>Std. Deviation</i>	0.89	1.10
<i>Minimum</i>	0.00	0.13
<i>Maximum</i>	6.78	6.78

Different reasons could cause inconsistent judgements. First, the measurement methodology itself could be a likely cause. Second, inconsistent judgements may occur due to "an improper conceptualisation of the hierarchy, lack of information, a mental lapse, or clerical errors" (Dyer and Forman, 1991, p.93). Third, certain contextual factors (see below) could be the reason for a high inconsistency ratio. Let's examine each of these likely causes mentioned above starting with the methodology used to operationalise the proposed framework along with the conceptualisation of the hierarchy. In this respect, recall that the AHP (Saaty, 1980) has been a well-established methodology in the literature and also tested in numerous applications with success (see Vargas, 1990; Davies, 2001). The feedback received from the pilot testing of the questionnaire as well as the main survey, showed that respondents had no problem in understanding the questions about the hierarchical model (see respondents' feedback on the questionnaire's response difficulty in sections 4.5.5 and 5.6.2). Moreover, the respondents' judgements (raw data) have been correlated with the output computed by the EC 2000 software. The conclusion is that inconsistent judgements are by no means related to either the conceptualisation of the hierarchy or the application of the AHP method.

Second, this study explicitly targeted key decision makers in each firm (e.g. the export director or manager) that is unlikely to lack export related information; moreover, those firms (i.e. 4 firms) that failed to answer all the AHP related questions were excluded from the sample. Third, particular attention was paid when entering the data into the EC 2000 so as to avoid any clerical errors on the researcher's behalf. While such errors are extremely common in any computerised analysis they were easily spotted with the help of the inconsistency ratio computed for each firm's AHP model. In contrast, mental lapses and clerical errors on behalf of the key informants could neither be dismissed as potential causes of inconsistency nor confirmed. It seems however, improbable that the manifestation of inconsistency at such a large scale across the sample (i.e. 55.6%), is mainly due to clerical errors and mental lapses on the respondents' behalf. Thus, additional factors were examined in order to be able to establish what might have caused an inconsistency ratio greater than 0.10.



In an attempt to provide alternative explanations for the likely cause of inconsistency in managerial judgements, this study looked also into different groups of factors such as export-, company-, performance- and management-related characteristics (i.e. the independent variables of this study shown in Figure 3.1). First, particular attention was paid to the performance dimensions (efficiency, effectiveness and adaptiveness); these three are inter-correlated although they are supposed to be conceptually different (not overlapping). Such overlap may be seen to indicate some degree of conceptual confusion and might reflect export decision-makers' lack of clarity in terms of distinguishing their firms' performance assessment orientation. Initially, it was thought that inconsistent judgements could be a result of a lack of clear, consistent rationale underlying performance assessment practices. Thus, each of the foregoing performance dimensions was correlated against the inconsistency variable associated with 93 of the respondents. Given that the inconsistency variable is not normally distributed, the non-parametric Spearman test was used because it works regardless of the distribution of the variables concerned. There was only one *significant* relationship (0.212,  $p=0.41$ , 2-tailed) shown in table 6.15.

**Table 6.15: Spearman's rho correlation coefficients**

	<i>Inconsistency &gt; 0.11(N=93 firms)</i>
<i>% of Total sales from exporting (N=93 firms)</i>	<i>0.212*, p=.041 (2-tailed)</i>

\*Correlation is significant at the 0.05 level

Note that there is no directional hypothesis involved and the 2-tailed option makes it more difficult to find a significant result. The above correlation shows a relationship between high export dependence (% export sales) and the inconsistency variable. This result is surprising because it suggests a link between exporters that are doing quite well in the export sales front and those making more inconsistent judgements.

The complexity facing decision-makers may not help coherence and consistency in any judgments made because it might be "beyond the capacity of the brain to synthesise intuitively and efficiently" (Saaty, 1990, p.259). Yet, a high inconsistency ratio can also be an indication of "an actual lack of consistency in whatever is being modelled" (Dyer and Forman, 1991, p.141). It could be the case that this group of 93

export firms have established performance measurement systems that are inconsistent. For instance, exporters may be evaluating conflicting objectives, measuring simultaneously say, short-term export profitability (assessed against own plan) as well as long-term export sales (assessed against competition). This is in line with the marketing performance literature where it has been proposed that, "metrics will evolve a-rationally in conformity with sector norms. We do not expect that firms can provide rational explanations for the metrics they adopt" (Ambler et al., 2004, p. 492). Such performance evaluations may also imply difficulties with the translation of firms' strategic goals into actual performance measures (Kaplan and Norton, 1992) and confusion in terms of linking the attainment of key export objectives to appropriate metrics. However, it is important to point out that any inconsistent judgements found in relation to export performance assessments capture *accurately* the export reality as reflected in exporters' measurement practices.

Also (and related to the last point above) a distinction needs to be made between the notions of inconsistency and inaccuracy. Despite the fact that the AHP assumes a link between inconsistent and less accurate judgements these notions are not mutually exclusive. The following example illustrates how inconsistent judgements can still make perfect sense in real life. Consider for instance, three football teams, A, B and C that compete with each other. Team A has defeated B ( $A > B$ ) and team B has defeated C ( $B > C$ ); while it is logically consistent to assume that team A will also defeat C ( $A > C$ ), this judgement need not be true. In fact it would also make sense if the opposite happens where team C plays better and wins the game against A ( $C > A$ ). Although the latter seems to be inconsistent it can be absolutely accurate. In fact, "responses of the nature  $A > B$ ,  $B > C$  and  $C > A$  are sometimes feasible and are known as intransitive responses" (Diamantopoulos and Schlegelmilch, 1997, p.41). Hence, consistency should not be always identified with accuracy, while a high inconsistency ratio does not have to reflect inaccurate judgements. The latter may be seen in the link found between the inconsistency variable and exporters with a high percentage (%) of export sales (see table 6.15); such link seems to suggest that in the modern commercial reality an inconsistent approach to export performance assessments is not necessarily counterproductive.

In light of the above, a greater than the recommended 0.10 inconsistency ratio (see Dyer and Forman, 1991) does *not* suggest by any means that the exporters' performance assessment-related input data are somehow problematic (less accurate); instead, it merely reflects the fact that the majority of export firms (93 out of 167 respondents) use less consistent judgements when assessing their export performance. Bearing in mind that this study aims to test empirically the export performance assessment framework proposed, what had to be ensured is *accurate* (but not necessarily consistent) judgements (Dyer and Forman, 1991); hence, any inconsistent responses could not have been dismissed from being inputted into the model hierarchy. Acknowledging the existence of inconsistencies in multi-attribute problem solving and decision-making, the computerised version of the AHP (EC 2000 software) accommodates for any such judgements by averaging them instantaneously (which is essentially what the AHP methodology does) in order to derive the weighted priorities for each export firm.

#### 6.4 SUMMARY OF FINDINGS ON ASSESSMENTS OF EXPORT SUCCESS.

This chapter presented the managerial point of view in terms of the assessment of export performance. The chapter concludes with a summary of the empirical results presented above (see tables 6.16 and 6.17 below). According to the AHP mean global priority values shown in table 6.16, exporters place a *balanced emphasis* on financial (export profitability) and non-financial (export sales and NPI) objectives; new product introduction (NPI) seems to be the *most important* (non-financial) export objective followed by export profit. In practice, the emphases exporters place on their export profitability and export sales objectives do not differ significantly. It was also found that exporters' performance assessments (across objectives) rely more on the firms' *own plans* as opposed to competitors' performance. Finally, unlike pertinent findings in an export context where short-termism prevailed (e.g. Madsen, 1998), the empirical results of this study advocate a *long-term* view of export success.

**Table 6.16: Findings on the assessment of export performance (in aggregate).**

Export Objectives
<i>New Product Introduction (NPI) (G= 0.370)</i> <i>Export Profit (G=0.326),</i> <i>Export Sales (G=0.303)</i> <i>NPI&gt;Export Sales (t=2.383, p=0.018, 2-tailed)</i> <i>NPI=Export Profit (t=1.58, p=0.115, 2-tailed)</i> <i>Export Profit=Export Sales (t=1.07, p=0.28, 2-tailed)</i>
Frame of Reference
<i>Own plan (G=0.624), Competition (G=0.376)</i> <i>Own plan&gt;Competition (t=6.48, p=0.00, 2-tailed)</i>
Time Frame
<i>Short-term (G=0.435), Long-term (G=0.564)</i> <i>Long-term&gt;Short-term (t=4.27, p=0.00, 2-tailed)</i>

Table 6.17 summarises findings relating to *each* export objective's assessment (findings at a *disaggregate* level). With respect to the assessment of the export sales performance, firms prefer to use their *own plans* and a *long-term* horizon (across both referents). The results at the lowest level of aggregation also suggest that there is no significant emphasis on any particular time frame when export sales performance is assessed against a firm's own export plan, unlike export sales assessments against export competition where greater attention is paid to a *long-term* horizon.

The results relating to the export profit objective's assessment are similar to those of the export sales'. Specifically, the majority of exporters consider their *own profit plans* as a more important benchmark than their competitors' financial performance. Furthermore, export firms on average, place more emphasis on their *long-term* export profitability maximisation (across both referents). Furthermore, it seems that there is no difference between a short vs. a long-term perspective when assessing export profitability against firms' own plans. In contrast, there is clearly a higher emphasis on a *long-term* horizon when profitability is assessed against competitors.

**Table 6.17: Findings at the disaggregate level of assessment.**

Export sales
<p><i>Own plan</i> (<math>L=0.654</math>), <i>Competition</i> (<math>L=0.345</math>)  <i>Own plan</i>&gt;<i>Competition</i> (<math>t=7.28</math>, <math>p=.000</math>, 2-tailed)</p> <p><i>Short-term</i> (<math>G=0.460</math>), <i>Long-term</i> (<math>G=0.539</math>)  <i>Short-term</i>&lt;<i>Long-term</i> (<math>t=2.14</math>, <math>p=.033</math>, 2-tailed)</p> <p><i>Own plan/short-term</i> (<math>G=0.308</math>), <i>Own plan/long-term</i> (<math>G=0.346</math>)  <i>Own plan/short-term</i>=<i>Own plan/long-term</i> (<math>t=1.31</math>, <math>p=.189</math>, 2-tailed)</p> <p><i>Competition/short-term</i> (<math>G=0.152</math>), <i>Competition/long-term</i> (<math>G=0.193</math>)  <i>Competition/short-term</i>&lt;<i>Competition/long-term</i> (<math>t=2.2</math>, <math>p=.029</math>, 2-tailed)</p>
Export profit
<p><i>Own plan</i> (<math>L=0.660</math>), <i>Competition</i> (<math>L=0.339</math>),  <i>Own plan</i>&gt;<i>Competition</i> (<math>t=7.76</math>, <math>p=.000</math>, 2-tailed)</p> <p><i>Short-term</i> (<math>G=0.453</math>), <i>Long-term</i> (<math>G=0.546</math>),  <i>Short-term</i>&lt;<i>Long-term</i> (<math>t=2.49</math>, <math>p=.014</math>, 2-tailed)</p> <p><i>Own plan/short-term</i> (<math>G=0.303</math>), <i>Own plan/long-term</i> (<math>G=0.357</math>)  <i>Own plan/short-term</i>=<i>Own plan/long-term</i> (<math>t=1.85</math>, <math>p=.066</math>, 2-tailed)</p> <p><i>Competition/short-term</i> (<math>G=0.150</math>), <i>Competition/long-term</i> (<math>G=0.189</math>)  <i>Competition/short-term</i>&lt;<i>Competition/long-term</i> (<math>t=2.12</math>, <math>p=.035</math>, 2-tailed)</p>
New product introduction (NPI)
<p><i>Own plan</i> (<math>L=0.582</math>), <i>Competition</i> (<math>L=0.417</math>),  <i>Own plan</i>&gt;<i>Competition</i> (<math>t=3.57</math>, <math>p=.000</math>, 2-tailed)</p> <p><i>Short-term</i> (<math>G=0.410</math>), <i>Long-term</i> (<math>G=0.589</math>),  <i>Short-term</i>&lt;<i>Long-term</i> (<math>t=5.04</math>, <math>p=.000</math>, 2-tailed)</p> <p><i>Own plan/short-term</i> (<math>G=0.255</math>), <i>Own plan/long-term</i> (<math>G=0.327</math>)  <i>Own plan/short-term</i>&lt;<i>Own plan/long-term</i> (<math>t=2.72</math>, <math>p=.007</math>, 2-tailed)</p> <p><i>Competition/short-term</i> (<math>G=0.155</math>), <i>Competition/long-term</i> (<math>G=0.261</math>)  <i>Competition/short-term</i>&lt;<i>Competition/long-term</i> (<math>t=5.40</math>, <math>p=.000</math>, 2-tailed)</p>

Finally, the *own plan* referent and a *long-term* horizon emerged to be the dominant considerations when evaluating NPI performance in practice. Also, the majority of exporters consider the adoption of a *long-term* time frame as more attractive for NPI performance assessments *irrespective of* the frame of reference employed (see above).

This chapter provided rare evidence on *how* export practitioners assess performance at an aggregate level (across export objectives) as well as (ii) for each export objective individually. Summing up the entire set of findings on exporters' assessment practices note that: (i) the exporters' attention is found to be almost *equally* divided between

financial and non-financial objectives. The average exporter (ii) tends to *rely less* on competitive benchmarking (but more on plan) and also (iii) tends to show greater interest in *long-term* success; short-termism per se does not seem to be what the majority of export managers strive for. These empirical findings offer much needed guidance for the operationalisation of export performance (Matthyssens and Pauwels, 1996) and their implications for both the operationalisation of the construct and the conduct of export success comparisons are discussed in chapter 9.

An important finding the implications of which are also discussed in chapter 9, is the considerable differences identified among exporters' performance assessment practices both in aggregate (*across* export objectives) and at a disaggregate level of assessment (for *each* export objective). The inter-firm variations found suggest that further (multivariate) analysis is required in order to *explain why* export firms exhibit preferences and differences of the sorts described above. This is the main question that the next chapter addresses in order to determine the contextual drivers of export performance assessments.

## **CHAPTER 7**

# **EMPIRICAL EVIDENCE ON THE CONTEXTUAL ANTECEDENTS OF EXPORT PERFORMANCE ASSESSMENTS**

## 7 EMPIRICAL EVIDENCE ON CONTEXTUAL ANTECEDENTS OF EXPORT PERFORMANCE ASSESSMENTS

Having already presented the findings relating to the AHP output (representing the dependent variables), this chapter focuses on the context-specific determinants of export performance assessments (the independent variables). The importance of the context for export performance assessments was discussed earlier (see sections 2.7.10 and 3.5) and led to the development of several hypotheses (see section 3.5.1). To identify the relationship between the different sets of characteristics examined and the key dependent variables of interest (the relative importance of export objectives, the emphases on the frames of reference and the time frames employed), the statistical analysis was conducted in two levels (aggregate and disaggregate). This chapter presents the first part focusing mainly on the assessment of export success *across* objectives (in *aggregate*). The second part (see chapter 8) focuses on the *disaggregate* level of assessment; the latter involves the performance assessment of *each* export objective individually (namely, export sales, export profit and NPI).

The chapter begins with the results of the bivariate analysis involving the independent and the dependent variables of this study (see sections 7.1 and 7.1.1). Subsequently, the presentation continues with the rationale, the procedures used, the results and the findings of the multivariate analysis carried out with the help of the multiple discriminant analysis technique. The ensuing analysis is based on well-established procedures in the literature (e.g. Kleinbaum et al, 1988; Mason and Perreault, 1991; Hair et al, 1995; Norusis, 1998).

### 7.1 Correlation analysis involving contextual influences on export performance assessments.

Remember that the conceptual framework considered (19 altogether) contextual factors as likely antecedents of the construct of interest (see Figure 3.1); these factors were grouped into five different sets representing export-, company-, management-, environmental, and performance-related variables profiled in previous chapters. The



correlation analysis presented below (see table 7.1), provides an overview of the significant relationships between each contextual factor studied and the 3 key dependent variables representing the assessment of export success (at an *aggregate* level) namely the relative importance of export objectives (see section 6.1.1), the emphasis on the frame of reference (see section 6.1.2) and the time horizon (see section 6.1.3) considered when translating objectives into measures. Remember these dependent variables reflect the AHP (G) output presented earlier (see map in figure 6.2).

Note also that table 7.1 presents 1-tailed Spearman's rank-order correlation coefficients (non-parametric correlations) due to a lack of normality in the dependent variables (see univariate analysis, chapter 5). Spearman correlations represent a measure of association that can be used to test the relationships hypothesized earlier (see section 3.4.1), because it allows one to investigate not only the strength of the association between two variables but also the direction (Diamantopoulos and Schlegelmilch, 1997).

With regards to table 7.1, it may be thought that two dependent (export performance assessment-related) variables are missing (i.e. the variables relating to competition and the short-term horizon). This is not actually the case as explained below. Remember that within the context of the AHP methodology, the respondents' judgments on any two alternatives compared (e.g. own plan vs. competition) are *relative* to each other; by multiplying any pair of such *reciprocal* judgments the result is one (1.00) (see section 4.12.1). Thus the relative comparisons made between own plan and competition produce AHP output weights that are *complementary* to each other (Dyer and Forman, 1991) as explained in section 6.1.2 (i.e. the sum of the own plan's and competition's priority weights equals one (1.00) which is the weight of the overall goal). By implication, the correlation coefficients corresponding to the own plan (see table 7.1) have the same *absolute* magnitude (but opposite signs) with those of competition. Thus, any independent variable's significant *positive* correlation with the own plan referent *also* indicates a significant *negative* correlation (of the same magnitude) with competition. Similarly, a negative correlation with the own plan implies a positive correlation (of the same magnitude) with competition. Given that the same principle of reciprocal judgments

applies also to the comparisons made between the short- and long-term horizons (see the time horizons' complementary output in table 6.4, in section 6.1.3), the correlation coefficients of both time horizons have equal absolute values. Hence, the following table includes such correlations only once (see long-term horizon's correlations in table 7.1).

**Table 7.1: 1-tailed Spearman's rho between independent variables and AHP output.**

CONTEXTUAL CHARACTERISTICS	EXPORT OBJECTIVES			FRAME OF REFERENCE	TIME FRAME
	Export Sales	Export Profit	NPI	Own Plan	Long-term
<b>Export-specific</b>					
Export Experience	.163*	-.077	-.022	.066	-.109
Export Commitment	.155*	.013	-.117	.154*	.050
Exp. Dependence	.176*	-.088	-.067	-.006	-.067
Exp. Destin. Diversity	.113	-.104	-.021	.005	-.122
Resource Inadequacy	-.116	-.002	.099	.029	-.017
<b>Company-specific</b>					
Firm's Size	.216**	.017	-.121	.190**	-.131*
Annual Sales Turnover	.189**	.054	-.168*	.170*	-.083
<b>Management-related</b>					
Shared Vision	-.040	.232**	-.178*	.056	.165*
Innovativeness	.037	.157*	-.169*	.109	.182**
Open-mindedness	.020	.077	-.061	.022	.163*
Risk Orientation	-.033	.112	-.063	.196**	.117
Future-oriented Culture	-.040	.075	-.032	.066	.227**
Commitment to Learning	-.079	.110	-.021	.030	.123
Ex. Market Orientation	.057	.045	-.044	-.002	.107
<b>Environmental</b>					
Environm. Uncertainty	-.154*	-.022	.196**	-.153*	-.126
<b>Performance-related</b>					
Efficiency	.088	.204**	-.240**	.191**	.024
Effectiveness	.055	.138*	-.152*	.218**	.099
Adaptiveness	.033	.185**	-.139*	.242**	.176*
Performance Document.	.035	.028	-.021	.207**	.076

\* Correlation is significant at the .05 level (1-tailed).

\*\*Correlation is significant at the .01 level (1-tailed).

Various contextual factors seem to influence assessments of export success. To be more specific, table 7.1 indicates associations between all the antecedents used in the framework and the three dependent variables representing the assessment of export success namely, the relative (i) importance of the export objectives, (ii) emphasis on the frames of reference and (iii) preference for the time frames considered. These

relationships are highlighted below in order to point out differences among exporters' performance assessment practices. Such differences certainly make it more difficult to undertake inter-firm export success comparisons in aggregate (across objectives), an issue that is further discussed in chapter 9.

*Bivariate results involving the relative importance placed on export objectives.*

*The export sales objective.*

The relative emphasis on the export sales objective is mainly associated with export-, company-related and environmental influences. In fact, export dependent ( $r=.176$ ,  $p=.012$ ), experienced ( $r=.163$ ,  $p=0.20$ ), committed exporters ( $r=.155$ ,  $p=.023$ ) as well as larger firms ( $r=.216$ ,  $p=.003$ ) having a higher sales turnover ( $r=.189$ ,  $p=.010$ ) seem to place greater importance on the export sales objective. In contrast, exporters operating in an uncertain environment place less emphasis on export sales performance ( $r= -.154$ ,  $p=.025$ ) and focus more on NPI (see below).

*The export profit objective.*

A higher emphasis on the export profit objective is associated with management- and performance-related characteristics. In fact, table 7.1 suggests that exporters whose culture encourages a shared vision/purpose ( $r=.232$ ,  $p=.001$ ) and innovativeness ( $r=.157$ ,  $p=.022$ ) place more emphasis on export profitability when assessing success. Export profitability is the primary consideration for exporters irrespective of their performance orientation; indeed, significant positive correlations have been found with efficiency ( $r=.204$ ,  $p=.004$ ), effectiveness ( $r=.138$ ,  $p=.038$ ) and adaptiveness ( $r=.185$ ,  $p=.009$ )

*The new product introduction (NPI) objective.*

With the exception of the export-related set of variables, table 7.1 shows links between the relative emphasis placed on NPI and the rest of the contextual factors included in the framework. In fact, firms with a higher sales turnover ( $r= -.168$ ,  $p=.019$ ) and a culture encouraging a shared vision ( $r= -.178$ ,  $p=.011$ ) and innovativeness ( $r= -.169$ ,  $p=.015$ ) place less emphasis on NPI (and more on export profitability, see above) when assessing success. Any of the three performance dimensions firms adopt (see efficiency ( $r= -.240$ ,

$p=.001$ ), effectiveness ( $r= -.152$ ,  $p=.025$ ) adaptiveness ( $r= -.139$ ,  $p=.038$ ) above) is negatively related to the importance placed on NPI while firms operating in uncertain environments focus on NPI ( $r=.196$ ,  $p=.006$ ) more than on export sales (see above).

*Bivariate results involving the relative emphasis on the frame of reference.*

Shifting attention to the frame of reference, it seems that exporters' preference for the own plan referent is linked to various contextual influences too. Specifically, committed ( $r=.154$ ,  $p=.024$ ), larger exporters ( $r=.190$ ,  $p=.007$ ), those having a higher sales turnover ( $r=.170$ ,  $p=.018$ ) and risk oriented exporters ( $r=.196$ ,  $p=.006$ ) tend to favour their own plan when assessing their success. In addition, there is a positive (and highly significant) relationship between own plan and firms' performance orientation irrespective of the fact that it can be efficiency ( $r=.191$ ,  $p=.007$ ), effectiveness ( $r=.218$ ,  $p=.002$ ) or adaptiveness ( $r=.242$ ,  $p=.001$ ) the orientation adopted. Exporters documenting their performance ( $r=.207$ ,  $p=.004$ ) prefer to evaluate success against their own plan, too. In contrast, less emphasis is placed on performance evaluations against own plan when the environment is uncertain ( $r= -.153$ ,  $p=.026$ ).

*Bivariate results involving the relative preference for the time frame.*

With respect to time considerations involved in assessments of export success, there are links with company-, management- and performance-related factors. Larger firms do not seem to favour a long-term horizon when evaluating success ( $r= -.131$ ,  $p=.047$ ). In contrast, a learning-oriented culture (shared vision ( $r=.165$ ,  $p=.017$ ), open-mindedness ( $r=.163$ ,  $p=.018$ ), innovativeness ( $r=.182$ ,  $p=.010$ ) shown in table 7.1) and a future-oriented ( $r=.227$ ,  $p=.002$ ) culture are both associated with long-term views of success. The adoption of a long-term perspective is also favoured by firms focusing on adaptiveness ( $r=.176$ ,  $p=.012$ ), the latter being the only performance dimension that is significantly related to a long-term horizon assessments of export success (see table 7.1).

### 7.1.1 Correlations reflecting trade-off interactions in assessments of export success.

The correlations shown in table 7.1 *do not* suggest any distinctly different performance assessment practices among exporters focusing on efficiency, effectiveness and adaptiveness. Such practices (examined here at an aggregate level) involve the relative emphasis exporters place on their export objectives, the frame of reference and the time horizon (when assessing success across objectives). By implication, the bivariate analysis has *not (so far)* demonstrated that the notion of trade-offs between different performance orientations applies in export practice; instead, it could be claimed that the three orientations are likely to be complementary (see discussion in sections 2.3.1 and 2.3.2).

In this context, this study looked further into the lowest (disaggregate) level of the AHP output (the 4<sup>th</sup> level of assessment) representing different frame of reference/time frame combinations used to translate objectives into measures (see figure 6.2). This is to be able to determine whether any conflicts (trade-offs) and/or complementarities are actually involved in exporters' efforts to maximize their objectives' performance (see more in section 2.3.2). In fact, any complementarities (and/or conflicts) among performance dimensions should be manifested (see section 2.3.1) in the emphasis placed on the frame of reference and time frame used to assess each export objective's attainment (see conceptualization in section 3.2). For instance, an efficiency orientation should reflect short-term export profitability assessments against own plan (e.g. using ROI).

All (Spearman-rho) correlations among the relevant dependent variables are included in table 7.2 and table 7.3. The former displays the *negative* relationships (suggesting trade-offs) and the latter the *positive* relationships (suggesting complementarities) between the *dependent* variables shown at the lowest (4<sup>th</sup>) level of the AHP output (see figure 6.2). The resulting correlations have implications for the *formative* measurement approach adopted to capture export success; yet, this is further discussed in chapter 9.

**Table 7.2: Trade-offs between different export performance assessment modes**

	Export Sales (ES)				Export Profit (EP)				NPI	
	OP/S-T <sup>a</sup>	OP/L-T <sup>b</sup>	CO/S-T <sup>c</sup>	CO/L-T <sup>d</sup>	OP/S-T <sup>a</sup>	OP/L-T <sup>b</sup>	CO/S-T <sup>c</sup>	CO/L-T <sup>d</sup>	OP/S-T <sup>a</sup>	OP/L-T <sup>b</sup>
<b>ES</b>										
OP/ST <sup>a</sup>										
OP/LT <sup>b</sup>										
CO/ST <sup>c</sup>										
CO/LT <sup>d</sup>										
<b>EP</b>										
OP/ST <sup>a</sup>				-0.272**						
OP/LT <sup>b</sup>			-0.357**							
CO/ST <sup>c</sup>		-0.243**								
CO/LT <sup>d</sup>	-0.376**				-0.260**					
<b>NPI</b>										
OP/ST <sup>a</sup>				-0.234**		-0.156* (.044)				
OP/LT <sup>b</sup>					-0.206**		-0.322**	-0.185* (.017)		
CO/ST <sup>c</sup>	-0.250**	-0.427**			-0.240**	-0.475**				
CO/LT <sup>d</sup>	-0.342**	-0.380**			-0.399**	-0.325**			-0.181* (.019)	

\* Correlation is significant at the .05 level (2-tailed).

\*\*Correlation is significant at the .01 level (2-tailed).

(a): Own plan/Short-term, (b): Own plan/Long-term,

(c): Competition/Short-term, (d): Competition/Long-term.

It is obvious from table 7.2 that there are a number of negative relationships among the different performance assessment modes (frame of reference/time frame combinations) exporters may adopt to assess their export objectives' performance. In fact the majority of those are noted between different export objectives. The results actually indicate the presence of *trade-offs* among performance dimensions underlying the translation of different export objectives into performance indicators. For instance, table 7.2 shows that export firms' short-term (efficiency-oriented) profit goals assessed against own export plans (e.g. using ROI) conflict with company intentions to increase long-term export sales performance relative to competition (e.g. assessed by using market share growth); this implies a trade-off ( $r = -.272$ ,  $p = .00$ ) between efficiency and effectiveness

perspectives. Also a short-term efficiency approach tends to conflict with adaptiveness; for example, there is a trade-off between an efficiency-oriented view of export profit goals and firms' adaptiveness goals reflected in long-term NPI evaluations against either own plans ( $r = -.206, p = .007$ ) or export competitors ( $r = -.399, p = .00$ ). Moreover, there are trade-offs between effectiveness and adaptiveness; for instance, long-term export sales assessments against own plan are negatively related to long-term NPI assessments against competition ( $r = -.380, p = .000$ ).

Some conflicting relations are also evident when evaluating the attainment of *individual* export objectives. For instance, striving for short-term export profitability against own plan (i.e. an efficiency perspective of performance) conflicts with ( $r = -.260, p = .001$ ) firms' attempts to out-perform financially export competition in the long run (i.e. reflects an emphasis on effectiveness). There are only two trade-offs of this sort and there is none between the performance dimensions underlying the evaluation of export sales. According to the results shown in table 7.2, trade-offs among dimensions are much more likely to be encountered when a *set of different* export objectives are pursued. In light of the trade-offs mentioned above, it obviously makes little sense to use any single performance indicator (e.g. export profitability or export sales growth) to compare different exporters' performance and pronounce one firm "more successful" than another (e.g. see review by Gemunden, 1991).

In addition to the foregoing conflicting relations between different performance assessment modes, the following table 7.3 shows the *positive* relationships found at the lowest (the 4<sup>th</sup>) disaggregate level of the AHP output. It is clear from the correlations included in table 7.3 that exporters focusing on efficiency, believe they can "legitimately" strive to maximize both export sales volume and export profitability (simultaneously) in the short-run ( $r = .405, p = .00$ ).

**Table 7.3: Complementarities between different modes of export performance assessments.**

	Export Sales (ES)				Export Profit (EP)				New Product Introduction (NPI)			
	OP/ S-T <sup>a</sup>	OP/ L-T <sup>b</sup>	CO/ S-T <sup>c</sup>	CO/ L-T <sup>d</sup>	OP/ S-T <sup>a</sup>	OP/ L-T <sup>b</sup>	CO/ S-T <sup>c</sup>	CO/ L-T <sup>d</sup>	OP/ S-T <sup>a</sup>	OP/ L-T <sup>b</sup>	CO/ S-T <sup>c</sup>	CO/ L-T <sup>d</sup>
<b>ES</b>												
OP/ST <sup>a</sup>												
OP/LT <sup>b</sup>	.290**											
CO/ST <sup>c</sup>												
CO/LT <sup>d</sup>			.446**									
<b>EP</b>												
OP/ST <sup>a</sup>	.405**											
OP/LT <sup>b</sup>		.443**			.249**							
CO/ST <sup>c</sup>			.479**									
CO/LT <sup>d</sup>				.446**			.305**					
<b>NPI</b>												
OP/ST <sup>a</sup>												
OP/LT <sup>b</sup>									.427**			
CO/ST <sup>c</sup>			.282**				.254**					
CO/LT <sup>d</sup>									.181* (.019)		.625**	

\* Correlation is significant at the .05 level (2-tailed).

\*\*Correlation is significant at the .01 level (2-tailed).

(a),(e),(k): Own plan/Short-term, (b),(f),(m): Own plan/Long-term,

(c), (g), (n): Competition/Short-term, (d), (h), (q): Competition/Long-term.

The fact that the majority of exporters tend to monitor the attainment of their objectives *both* in the short- and the long-run (see section 5.7.3), facilitates the presence of *complementarities* among different dimensions. These are reflected on the positive correlations between the different modes firms may use to assess the achievement of *individual* export objectives. For instance, exporters adopting an efficiency (short-term) perspective in export profitability evaluations (e.g. captured by ROI) are also likely to



measure long-term changes in financial performance (e.g. captured by export profit growth); this reflects a complementary relationship between efficiency and effectiveness goals ( $r=.249$ ,  $p=.00$ ). Positive relationships between efficiency and effectiveness are also noted when evaluating the export sales objective's performance ( $r=.290$ ,  $p=.00$ ). The results are in line with Shoham's (1998) empirical study reporting that "firms that emphasise short-term export sales may be as successful, long-range, as firms that emphasise short-term export profitability...the road to both future sales and future profits may take firms through either sales emphasis or profits emphasis, short-term" (Shoham, 1998, p. 73). By the same token, it can be also suggested that studies adopting a reflective measurement approach may employ export sales volume, export sales growth and export profitability indicators (simultaneously) to capture the attainment of export sales and profit objectives (e.g. see Zou et al., 1998).

To sum up, it is clear that both trade-offs *and* complementarities may co-exist in an export performance assessment context (i.e. between different performance measures and the associated performance dimensions). To be more specific, the bivariate analysis results have not dismissed the notion of performance trade-offs in export practice; instead, the results support relevant views expressed in the literature (see section 2.3.1) notably that when firms pursue *different* export objectives, "[e]mphasising one facet of performance may come at the expense of another" (Shoham, 1998, p.74). However, there are also complementarities that are mainly noted among different performance assessment modes corresponding to a single export objective (as opposed to different objectives). By implication, exporters' performance assessments may focus on more than one performance dimension when assessing any given export objective; in other words, it seems possible for an export firm to excel in *more than one* performance dimension simultaneously. The findings actually support concerns expressed earlier (see section 2.3.2) regarding the widely acknowledged three-dimensional performance framework used to explain export firms' success (e.g. see Styles, 1998; Shoham, 1998). However, the implications of the above for both the conceptualisation and operationalisation of export success are discussed in chapter 9, after taking into account the outcome of the

multivariate analysis pertaining to the relationship between the different performance orientations and the export performance measurement practices.

## **7.2 The selection of the multivariate method**

In light of the various significant correlations between independent and dependent variables shown in table 7.1 above, the analysis has so far provided some support for this study's conceptual model (see Figure 3.1) linking various contextual-factors to the evaluation of export achievement. However, it is the multivariate statistical analysis that allows for the simultaneous consideration of the entire set of the antecedents included in Figure 3.1 and the determination of both their individual and combined impact on the assessment of export success. The following multivariate analysis assesses the hypothesized relationship between different contextual factors and the relative emphases placed on (i) the different export objectives, (ii) the alternative frames of reference and (iii) the time frames employed when assessing export success. The aim is to understand differences among exporters' performance assessments and also provide a rationale as to why export success should be assessed in the specific manner proposed.

For the purpose of the multivariate analysis of the data, the plan was to employ the multiple linear regression technique. Multiple regression is a powerful analytical tool that has been used extensively in a business context (e.g. for forecasting) in order to describe the relationship between several independent variables and a single continuous dependent variable; the regression method helps to determine the independent variables' individual and combined relationship with the dependent variable (Hair et al., 1995). Therefore, the former multivariate method was initially thought to be appropriate for the identification of those characteristics that have a direct impact on export performance assessments.

The selection of a multivariate method has to take into account "(1) the purpose of the investigation, (2) the mathematical characteristics of the variables involved, (3) the statistical assumptions made about these variables and (4) how the data are collected (e.g. the sampling procedure). The first two considerations are generally sufficient to

determine an appropriate analysis" (Kleinbaum et al., 1988, p.12). Bearing in mind the foregoing considerations, the descriptive analysis of the dependent (export performance assessment-related) variables showed that most of them *are not* normally distributed (see the distributions of the relevant variables in chapter 5); this finding violates an important statistical assumption underlying multiple regression (i.e. the normality of the dependent variable) that "can yield spurious results" (Kleinbaum et al., 1988, p.108). The foregoing analytical method could not be employed due to the dependent variables' extreme departure from normality. Instead, it was decided to adopt either the discriminant analysis technique (see assumptions required in section 7.3.4) or multinomial logistic regression, a technique that is discussed later in section 7.6 (limitations relating to the choice of the above multivariate techniques can also be seen in section 9.6).

The purpose of discriminant analysis is to determine "how one or more independent variables can be used to discriminate among different categories of a nominal dependent variable" (Kleinbaum, et al., 1988, p.12). To do so, a concept called the discriminant function is employed. This is very similar to the regression equation and it "is nothing more than a *derived variable* defined as the weighted sum of values on individual predictor variables" (Kachigan, 1986, p.361, emphasis in the original). The discriminant function is used to actually classify objects into groups (categories). The application and interpretation of the discriminant analysis technique is "much the same as in regression analysis...[t]he key difference is that discriminant analysis is appropriate for research problems in which the dependent variable is categorical (nominal or nonmetric), whereas regression is utilized when the dependent variable is metric" (Hair et al., 1995; p.183). However, some assumptions are different; for instance, linear regression assumes normality for the dependent variable while discriminant analysis "requires multivariate normality of the independent variables" (Kleinbaum, et al., 1988, p.560-561).

### 7.3 Discriminant analysis

This section discusses important issues pertaining to the discriminant analyses employed. Specifically, the dependent variables, the sample and group sizes, the treatment of

outliers, the assumptions required, the rationale used to estimate the discriminant functions and the subsequent interpretation of the relevant findings.

The main objective of the multivariate statistical analysis undertaken was to examine the hypothesized relationships between contextual antecedents and the assessment of export success. To do so, the discriminant analysis method was employed (see more in section 7.3.1); this involves linear combinations of independent variables that are used to discriminate among different groups of exporters in terms of (i) the relative importance placed on the export objectives, (ii) the relative emphasis on the frames of reference considered and (iii) the preference for the time horizons employed.

In light of these three key dependent variables (see (i)-(iii) above), an equal number of discriminant analyses were undertaken. Each analysis utilises the entire set of the (19) independent variables included in the framework (see Figure 3.1). The aim has been to investigate additional relationship between the set of contextual antecedents and export performance assessments (see section 3.4). Such investigation would offer richer evidence on exporters' performance assessment practices and is consistent with this study's intention to contribute to the better understanding of the notion of export success.

In this respect, remember that the multiple discriminant analysis technique involves metric independent variables and a single categorical (non-metric) dependent variable; yet, *each* of the former three dependent variables is metric. Therefore, for the purpose of the analyses performed, it was necessary to create *nominal* (dependent) variables (more on the properties of nominal scales can be seen in Diamantopoulos and Schlegelmilch, 1997). The procedure utilized is described in detail below.

### **7.3.1 Converting the continuous dependent variables into categorical variables.**

To be able to determine the drivers of export performance assessments at an aggregate level, *three* nominal variables have been created; these reflect the former three key aspects (see (i) - (iii) above) involved in such assessments. Each of these categorical

dependent variables consists of mutually exclusive and collectively exhaustive groups (categories). Specifically, (i) a five-group (categorical) dependent variable corresponds to the relative importance of the export objectives, (ii) a three-group variable represents the emphasis on the frames of reference and another (iii) three-group variable reflects the relative preference for the time horizons employed. Three discriminant analyses have been performed altogether, corresponding to each of the dependent variables mentioned.

The assignment of 167 cases to the foregoing categories (groups) is based on the global priorities output computed (by EC 2000) for each firm individually. Thus, for *each* nominal dependent variable, each particular case (export firm) was designated into one group (category) only. The procedure used to designate cases into groups is the *same* for all three dependent variables; this procedure is described below using the former five-group variable (see (i) above) as an example.

Remember that the score the AHP attributes to the overall goal is 1.00 (see Figure 6.2), and that a global priority weight of 0.333 indicates that the three export objectives are equally important. The latter global priority was decided to be the cut-off threshold used to identify cases (objects) that are eligible for classification into each of the five categories (groups) of the variable representing the export objectives' importance. Thus:

*Group 1:* Cases whose export sales (G) priority is higher than the rest of the objectives were designated to group (1), called *export sales* (i.e. this group includes firms whose export sales objective is more important in comparison).

*Group 2:* The second (2) group, called *export profit*, includes cases whose export profit (G) priority is relatively higher (i.e. higher importance is placed on export profitability).

*Group 3:* Those cases whose NPI (G) priority score is greater in comparison (i.e. more emphasis is put on the NPI objective) were designated to group (3), called *NPI*.

*Group 4:* The fourth (4) group called *balanced*, consists of cases that consider the aforementioned objectives to be of equal importance (i.e. export objectives' (G) priorities are the same).

*Group 5:* Finally those cases that reflect something other than the above (i.e. equally high emphasis put on any two export objectives and lower emphasis placed on a single objective) have been assigned to the fifth (5) group (called, *other*).

Taken together, the five groups described above, compose the multichotomous nominal variable capturing the relative importance of export objectives. The numbers of cases designated into these five groups are shown in table 7.4. To facilitate the presentation of the analyses, the group membership (i.e. the group sizes) for the remaining (three-group) dependent variables (i.e. the emphasis on the frames of reference and the preference for the time horizons) are presented in sections 7.4.2 and 7.4.3, along with the respective discriminant analyses performed.

**Table 7.4: The export objectives' importance (nominal) dependent variable.**

<i>Original group membership</i>	
<i>Categories (groups)</i>	<i>Number of cases (Total=167)</i>
Export Sales (1)	33
Export Profit (2)	34
New Product Introduction (3)	58
Balanced (4)	28
Other (5)	14

The discriminant analysis aims to identify those context-specific (independent) variables that are most effective in terms of discriminating among the different groups constituting the dependent variable (see table 7.4). Before discussing the assumptions required for the conduct of this discriminant analysis, the following section looks into the relevant sample and group sizes suggested in the literature.

### 7.3.2 Sample and group sizes.

When conducting discriminant analysis, the sample size should better be in proportion to the number of predictors. Although a sample-to-parameter ratio of (more or less) 15 observations (per independent variable) would be preferable, such ratio is hard to

maintain in practice (Hair et al., 1995). Remember the model considered 19 independent variables as likely predictors of export performance assessments (see Figure 6.2); all these potential predictors have been included in the discriminant analyses. To be specific, one (1) environmental, two (2) company, four (4) performance-related, five (5) export-related and seven (7) management-related factors have been involved in the estimation of the relevant discriminant functions. A smaller sample (e.g. less than 150 cases) relative to the number of predictors may result in unreliable parameter estimates and unstable results (Hair et al, 1995). The sample size used here is slightly smaller than what the above guideline suggests; yet it is adequately large for the purpose of the multivariate analysis. The significance level was set to .10 to help the detection of any weaker discriminating effects associated with the independent variables studied.

Furthermore, particular attention was paid to both the *actual* and *relative* group sizes (see table 7.4) in order to allow the construction of good (i.e. optimal) linear combinations of predictors that help classify respondents into groups (Kachigan, 1986). First, the minimum number of observations assigned to each dependent variable's groups bears consideration because even the smallest group "must exceed the number of independent variables. As a practical guideline, each group should have at least 20 observations" (Hair et al., 1995, p.195). With the exception of the smallest group (5), the rest conform to this practical guideline; indeed, table 7.4 shows that the original membership (number of observations) for groups (1) to (4) exceeds the number of observations suggested above.

Second, the *relative* size of the aforementioned groups is important from a statistical point of view because it can influence the probability for an individual case to be assigned to a larger as opposed to a smaller group (Kleinbaum et al., 1988). Thus, "[i]f the groups vary widely in size, this may impact the estimation of the discriminant function and the classification of observations. In the classification stage, larger groups have a disproportionately higher chance of classification" (Hair et al., 1995, p.195). The number of observations contained in each of the dependent variable groups shown in table 7.4 makes them comparable enough in size. Nevertheless, the SPSS statistical package was asked to take the non-equal group sizes into account when computing the

*prior* probabilities for group membership so as to assist the classification process (Hair et al. 1995; Norusis, 1998).

### 7.3.3 Outliers and influential data points

Outliers are called those observations that have “a unique combination of characteristics identifiable as distinctly different from the other observations” (Hair et al., 1995, p.64). Keeping the outliers in a dataset may either add to or deduct from the representativeness of a sample, thereby affecting the generalization of a study’s findings to the population (Hair et al., 1995). Although the study’s primary purpose is to test the proposed export performance assessment framework as opposed to generalise findings, likely influential cases were detected prior to actually using them in the multivariate data analysis.

Different methods have been suggested for the identification of influential observations and extreme values. Specifically, univariate detection (i.e. examining the distribution of observations), bivariate (i.e. using scatterplots for pairs of variables) and multivariate detections (i.e. plotting residuals, checking leverage or using single-case diagnostics in a regression model) can be employed. With respect to the univariate method, it is common to consider the standard deviation (often greater than 2.5) before removing observations; in contrast, the multivariate detection method of outliers uses the Mahalanobis distance to assess observations across a set of variables (see Hair et al., 1995).

Having employed the independent variables’ scatterplots (bivariate statistical testing) to detect any outliers, a number of observations (cases) were considered for potential removal from the discriminant analyses performed. Specifically, eight cases were found to have some uniqueness in the combination of data points (values) across different predictors: (17), (19), (23), (84), (135), (137), (120) and (156). For instance, there have been some “extreme” values in variables such as the export firm size gauged by the number of employees. Omitting such values or cases from the discriminant analyses would have meant that any relationship between export firm size and the assessment of



export success is only valid for exporters of a certain (restricted) size. Such omission would have misrepresented the population studied and could have influenced the conclusions reached. Indeed, scientific judgment is "more important here than statistical tests, once influential observations have been flagged" (Kleinbaum et al., 1988, p.201). Having decided not to eliminate values/cases solely on the basis of being extreme and after further inspection of the foregoing observations for each discriminant model employed, it was felt that the observations mentioned above are valid because they could represent the population of exporters. Thus, in the absence of evidence discounting outliers "as valid members of the population" (Hair et al., 1995, p.58), the former have been retained in the dataset.

#### 7.3.4 Assumptions pertinent to the discriminant analysis

The use of multivariate statistical techniques requires the satisfaction of some key statistical assumptions. For the discriminant analysis technique in particular, attention has to be paid on the multivariate normality, linearity and multicollinearity associated with the independent variables employed (Kleinbaum, et al., 1988; Hair et al., 1995). Furthermore, the estimation of the discriminant function (i.e. the variate) requires from predictors to have equal variance and co-variance across groups. This means that, firstly, the "variance of a given predictor variable...must be the same in each criterion group population. Secondly, the correlation *matrix* of predictor variables must be the same in each group" (Kachigan, 1986, p.360, emphasis in the original). Although there is no clear evidence to suggest that discriminant analysis is sensitive to mild assumption violations (Hair et al, 1995), the data collected were tested in terms of meeting the assumptions mentioned above. More details follow.

##### *Normality*

Although univariate normality does not guarantee the multivariate normality required in a discriminant analysis context, it is difficult to directly test for the latter type of normality; instead, it has been maintained that the predictors should be (univariately) normal because any departure from multivariate normality could be of less consequence (Hair et

al, 1995). The 19 predictor variables used in this study's theoretical model were examined for normality using the Kolmogorov-Smirnov (K-S) test (see univariate, descriptive analysis in chapter 5). The K-S test results showed that out of 19 predictor variables, eight (8) are normally distributed and eleven (11) exhibit a statistically significant departure from normality. These variables are: (i) export experience (ii) export commitment, (iii) export destination diversity, (iv) firm's size, (v) total sales turnover, (vi) open-mindedness, (vii) future-oriented culture, (viii) efficiency, (ix) effectiveness, (x) adaptiveness and (xi) performance documentation. An attempt was made to satisfy the normality assumption by transforming the former eleven variables prior to using them in the ensuing discriminant analysis.

Table 7.5 summarises the relevant (highly significant) K-S test statistics and describes the relevant distributions in terms of mean and median; also, it offers possible remedies for the transformation of the non-normally distributed variables.

**Table 7.5: Testing and remedying for normality**

	K-S (z)	Mean*	Median*	Possible Remedy
Export Experience	2.48 ( $p=.000$ , 2-tailed)	28.5	24.0	Log
Export Commitment	1.49 ( $p=.023$ , 2-tailed)	15.8	16.0	Square Root
Ex.Destination Diversity	2.23 ( $p=.000$ , 2-tailed)	38.0	26.5	Log
Firm's Size	4.72 ( $p=.000$ , 2-tailed)	221.7	60.5	Log
Annual Sales Turnover	4.64 ( $p=.000$ , 2-tailed)	31.2	6.75	Log
Open-mindedness	1.63 ( $p=.009$ , 2-tailed)	9.21	9.0	Log
Future-oriented culture	1.64 ( $p=.009$ , 2-tailed)	15.3	16.0	Square Root
Efficiency	2.56 ( $p=.000$ , 2-tailed)	5.26	6.0	Square Root
Effectiveness	2.62 ( $p=.000$ , 2-tailed)	5.31	5.0	Log
Adaptiveness	2.17 ( $p=.000$ , 2-tailed)	5.35	5.0	Log
Performance Documentation	1.93 ( $p=.000$ , 2-tailed)	3.44	4.0	Square Root

\*relevant descriptive statistics before transformation can be seen in chapter 5.

Two remedies (namely, log and square root) have been used for the transformations; the former is recommended for positively skewed and the latter for negatively skewed

distributions respectively (see Hair et al, 1995). Descriptive statistics for the newly transformed variables are summarized in table 7.6. Out of eleven (11) variables included in table 7.6, four (4) namely, export experience, export destination diversity, firm's size and annual sales turnover have been successfully transformed (see highlighted non-significant K-S (z) statistics). In contrast, seven (7) variables failed to be transformed.

**Table 7.6: The predictor variables after transformation**

	Mean	Median	S.D Standard deviation	K-S (z) (2-tailed)
Export Experience	3.02	3.17	.84	1.11 ( <i>p</i> =.165)
Export Commitment	3.94	4.0	.50	1.62 ( <i>p</i> =.010)
Ex.Destination Diversity	3.25	3.27	.94	1.11 ( <i>p</i> =.164)
Firm's Size	4.24	4.10	1.42	.866 ( <i>p</i> =.442)
Annual Sales Turnover	1.97	1.90	1.70	.744 ( <i>p</i> =.637)
Open-mindedness	2.17	2.19	.30	2.40 ( <i>p</i> =.000)
Future-oriented culture	3.8	4.0	.47	1.98 ( <i>p</i> =.001)
Efficiency	2.26	2.44	.342	2.64 ( <i>p</i> =.000)
Effectiveness	1.62	1.60	.345	3.60 ( <i>p</i> =.000)
Adaptiveness	1.64	1.60	.278	2.99 ( <i>p</i> =.000)
Performance Documentation	3.73	3.87	.55	2.08 ( <i>p</i> =.000)

There are different tests for multivariate normality (Sharma, 1996) although the latter is not guaranteed even if the independent variables are univariately normal (Hair et al, 1998). However, the variables should be univariately normal in order to expect multivariate normality (Hair et al, 1998). This is clearly not the case in this study. In this context, it should also be acknowledged that discriminant analysis could be fairly robust to mild violations of the multivariate normality assumption "provided the samples are not too small" (Kinneer and Gray, 2000, p.322). Yet, there is no clear-cut answer as to how much of non-normality is acceptable without substantially affecting the results (Sharma, 1996). The fact that the multivariate normality assumption is not met may affect the analysis' output (see also section 7.6). Thus additional analysis was deemed necessary;

this time with the help of a different technique (this is *in addition* to the multiple discriminant analysis employed). More details follow in section 7.6.

Bear also in mind that the antecedents whose distributions exhibit some deviation from normality (see table 7.6 above) could not have simply been dropped from the proposed framework; it is important to "avoid omitting a critical predictor variable, termed **specification error**" (Hair et al, 1995, p.23, emphasis in the original) and potentially weakening the predictive power of the model. In fact, removing such (non-normally distributed) predictors from the subsequent analysis would have led to a mis-specified model (one that fails to acknowledge the influence of theoretically important variables to the estimation of the discriminant functions), resulting possibly in biased estimates for some coefficients (Mason and Perreault, 1991). All the above antecedents are included in the relevant discriminant analyses models on the grounds that they may contribute to the discrimination among groups and help explain assessments of export success.

#### *Linearity*

Linearity is an important assumption underlying the adoption of multivariate statistical techniques involving correlations (Kachigan, 1986; Kleinbaum, et al., 1988). To establish whether there is a linear association between the independent variables included in the discriminant analyses, Hair et al., (1995) suggest the use of either scatter plots (two-dimensional representations of data depicting the relationship between two metric variables), or simple regressions for each pair of the predictor variables and examination of the respective residuals (the latter can detect any non-linear portion in the relationship between two variables). An examination of the relevant scatter plots between the pairs of the independent (predictor) variables studied, showed that the data points were randomly scattered around a horizontal line. The absence of clear patterns in the data points supports the assumption of a linear association between predictors. That linearity assumption is also implicit in the export literature researching the relationship between contextual drivers and export performance; in light of an absence of evidence for the opposite, the same assumption is maintained in the context of this study.

### *Multicollinearity*

The 19 metric independent variables have also been examined for multicollinearity, a characteristic of the data that could influence the standardized canonical discriminant function co-efficients and the resulting rankings (Hair et al, 1995). To be more specific, multicollinearity denotes highly correlated variables to the extent that one variable can be highly explained by one or more variables thereby adding very little to the explanatory power of the set of predictors used (Kachigan, 1986; Hair et al, 1995). It is suggested that tolerance values greater than .10, which is the value set as a cut-off threshold should be considered to demonstrate acceptable levels of collinearity (Kleinbaum et al., 1988; Hair et al, 1995). The same should be evident in the inter-correlations among the 19 predictors (significant correlations should not reflect collinear variables). Instead of examining the tolerance values, the correlations between all predictors were examined (this is because in SPSS, the former option is only available when using regression but not discriminant analysis). High values (greater than 0.80 or 0.90) suggest that multicollinearity may be present in the ensuing analysis (Hair et al, 1998). The examination of the relevant output shows that this should not be the case here (see Appendix E). None of the correlation coefficients is greater than 0.80; in fact, the majority of them are quite low. Additional evidence against collinearity is provided by the standard error derived from the (complementary) testing of the framework with a different technique (see examples in Appendix D); all standard errors computed are less than 2.0 suggesting that there are no numerical problems caused by multicollinearity (Hosmer and Lemeshow, 1989).

### *Equality of variance/co-variance*

To estimate the discriminant functions requires from predictors to have homogeneity of variance/covariance among groups (Kleinbaum, et al, 1988). The assumption for *equal group variance/covariance (dispersion) matrices* is assessed with the Box's M test (see Hair et al, 1995). To facilitate the presentation of the findings, the resulting Box's M test statistics pertaining to the discriminant analyses conducted (see sections 7.4.1, 7.4.2 and 7.4.3) are presented at the end of the next section (see table 7.7).

#### **7.4 Schematic depiction of the discriminant analyses and the rationale underlying the estimation of the discriminant functions.**

Figure 7.1 is a pictorial illustration of the three discriminant analyses undertaken. On the right side, this figure depicts the three dependent (export performance assessment-related) variables. Each dependent variable is obviously categorical consisting of either three or five groups. On the left side, this figure contains the 19 discriminators used in the estimation of the relevant discriminant functions. The former are the (metric) independent variables included in the conceptual framework. Different approaches could be used to estimate the discriminant functions corresponding to the analyses depicted in figure 7.1. Specifically, the estimation of the discriminant functions is possible either (i) with a single step (i.e. using the "enter" method) where the weights for the whole set of the (19) variables of the discriminant model are calculated simultaneously, or (ii) sequentially (i.e. using the "stepwise" method in SPSS) according to the discriminating power each variable adds to the discriminant functions. The former method enables one to see the discrimination when all the variables are included in the model while the latter method selects only those statistically significant variables that are able to discriminate better than others.

In view of the quite large number of predictors (19), the sequential "stepwise" technique, could lead to the development of a more parsimonious model consisting of fewer predictors in comparison to a model derived by using the "enter" technique (e.g. see section 8.1). The downside of the sequential estimation of the canonical discriminant functions is that it also implies an indiscriminant selection of the existing variables without regard to any conceptual consideration (e.g. hypothesized relationships). In other words, the stepwise technique would better serve an analysis whose purpose is rather predictive as opposed to explanatory.

**Figure 7.1: Diagram of the discriminant analyses undertaken.**

Independent Variables	Discriminant analysis 1	Discriminant analysis 2	Discriminant analysis 3
	Dependent Variable: <i>Importance of Export Objectives</i>	Dependent Variable: <i>Emphasis on the Frame of Reference</i>	Dependent Variable: <i>Emphasis on the Time Frame</i>
	(Five-groups)	(Three-groups)	(Three-groups)
<b>Export-related</b>	(1) Export Sales (2) Export Profit (3) NPI		
Export Experience			
Export Commitment			
Exp. Dependence			
Exp. Destin. Diversity			
Resource Inadequacy	(4) Balanced (5) Other		
<b>Company-related</b>			
Firm's Size			
Annual Sales Turnover			
<b>Managerial</b>			
Shared Vision	(1) Own Plan (2) Competition (3) Balanced		
Innovativeness			
Open-mindedness			
Commitment to Learning			
Future-oriented Culture			
Risk Orientation		(1) Short-term (2) Long-term (3) Balanced	
Export Market Orientation			
<b>Environmental</b>			
Environmental Uncertainty			
<b>Performance-related</b>			
Efficiency			
Effectiveness			
Adaptiveness			
Performance Documentation			

Having acknowledged the above options, the rationale adopted across all three analyses was dictated by this study's objectives. Bearing in mind that there are specific hypotheses to be tested (see section 3.5.1) and that the application of any multivariate statistical technique "should not substitute for conceptual model development" (Hair et al., 1995, p.23), the "enter" method was considered as more appropriate to use in the context of this study. This method can facilitate the testing of the hypothesized relationships as well as help assess how the entire set of conceptually relevant variables influences export performance assessments (see framework in Figure 3.1). In light of the above, the

following discriminant analyses were conducted by calculating the relevant linear composites (or weights) simultaneously (i.e the estimation of the discriminant functions was made in a single step, using "enter").

The analysis is presented in three parts. The first part focuses on the export objectives' relative importance followed by the part that looks into the emphases placed on the frames of reference and finally the part that looks into the time horizons employed in export performance assessments. Before proceeding with the presentation of the results, table 7.7 summarises the Box's M test statistics. The Box's M tests the null hypothesis of equal group variance/covariance (dispersion) matrices (see section 7.3.4). Table 7.7 shows that the resulting statistics are significant for all three analyses when they should not be.

**Table 7.7: Box's M test statistics**

<i>Box's M Test Statistics</i>	<i>DISCRIMINANT ANALYSIS No 1</i>	<i>DISCRIMINANT ANALYSIS No 2</i>	<i>DISCRIMINANT ANALYSIS No 3</i>
	1098.3, p=.00	422.33, p=.00	341.25, p=.00

Given that the former test can be sensitive to characteristics such as sample size and normality of the independent variables, the statistics mentioned above may not necessarily reflect an assumption violation (Hair et al., 1995). Thus, the statistics were accepted until examining the rest of the output (see below) and deciding whether any action needs to be taken (i.e. indeed, following the option of separate group covariance matrices based on the canonical discriminant functions, *no* substantial differences in the classification results were noted thereby providing no support to the Box's M test statistics' indication of assumption violation).



#### 7.4.1 Discriminant analysis (1): The relative importance of export objectives.

The first discriminant analysis focuses on the contextual determinants of the relative importance exporters place on their objectives. This analysis involves a five-group dependent variable (the original group membership of which, is displayed in table 7.4).

##### *The functions*

With respect to the estimation of the discriminant functions, it is reminded that the Wilk's Lambda measures how well each function discriminates among the different groups; also, the associated Chi-square statistic tests the hypothesis that the means of the four functions are equal across groups (Hair et al, 1995). A small significance value ( $p < .10$ ) indicates functions that do better than chance at separating the dependent variable groups; yet, this is not the case here.

**Table 7.8: Discriminant analysis (1): Wilk's test of functions**

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 4	.507	75.368	76	.499
2 through 4	.693	40.691	54	.910
3 through 4	.835	19.995	34	.973
4	.934	7.581	16	.960

The resulting non-significant statistics shown in table 7.8 indicate that the functions are unable to discriminate between the different groups of exporters in terms of the relative importance placed on the export objectives. Thus the presentation continues with the next analysis.

#### 7.4.2 Discriminant analysis (2): Emphasis on the frame of reference employed in export performance assessments across objectives.

The second discriminant analysis aims to determine the contextual drivers of the relative emphasis exporters place on the frames of reference against which export performance is assessed (see figure 7.1). The procedure followed in this particular analysis is described in detail so as to act as a reference point for similar analyses presented in chapter 8.

##### *The groups*

The dependent variable consists of three groups of firms based on the respective global priority weights computed for each firm individually (see table 7.10 below). Given the fact that the weighted score attributed to the overall goal is 1.00 (see AHP output in figure 6.2), remember that a score of 0.500 reflects *equal* emphasis on the own plan and competition referents (see the respective mean global priority scores for the two referents *across* objectives in table 6.2, section 6.1.2). The former weight was decided to be the cut-off threshold in order to be able to identify cases eligible for classification into one of the three dependent variable groups. The procedure used to assign 167 cases into groups is the same with that described in section 7.3.1. The original group membership for this three-group dependent variable follows.

**Table 7.10: The emphasis on the frame of reference variable.**

<i>Original group membership</i>	
<i>Categories (groups)</i>	<i>Number of cases (Total=167)</i>
Own Plan (1)	109
Competition (2)	37
Balanced (3)	21

Specifically:

*Group 1:* Cases whose global (G) priority for own plan is higher than that of competition (i.e. more emphasis is placed on the own plan frame of reference) are assigned to this group, called *own plan*.

*Group 2:* The second (2) group, called *competition*, includes cases whose (G) priority for competition is relatively higher (i.e. greater emphasis is placed on competition).

*Group 3:* The third (3) group called *balanced*, consists of cases that consider the aforementioned frames of reference to be of equal importance (i.e. own plan's and competition's (G) priorities are the same).

#### *The functions*

Given the fact that this is a three-group discriminant analysis model, two canonical discriminant functions have been estimated so as to discriminate among the three dependent variable groups. The testing of the functions below shows that both of them are significant (i.e. their means differ across groups), meaning that they do better than chance at separating the groups. The smaller Wilk's Lambda and the higher significance level shown in table 7.11 suggest that function's (1) contribution to the discrimination is better in comparison.

**Table 7.11: Discriminant analysis (2): Wilk's test of functions**

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.555	65.900	38	.003
2	.777	28.229	18	.059

Before presenting the classification results, remember that the computation of the prior probabilities for classification purposes (see Norusis, 1998) was based on the relative size of the groups themselves. However, the use of equal prior probabilities is suggested when

nothing else is known about a case (i.e. when there is an equal probability for a case to belong to any of the groups) or whenever it is not certain whether the sample employed reflects the population proportions (Hair et al., 1995). Of course it was not possible to know in advance the population proportions in terms of the relative emphasis placed on the frames of reference (and/or export objectives and time horizons) employed in export firms' performance assessments. Aside from that, the purpose of the analysis is not a "predictive" one. Yet, the analysis aims to serve the study's primary purpose, which is to test the framework using the particular sample employed. Given the fact that there is an a priori known probability for any case of this sample to belong to one of the dependent variable groups formed, the prior probabilities were set in proportion to the group sizes in order to aid the discrimination. The discriminant analysis' results are shown in table 7.12.

**Table 7.12: Discriminant analysis (2): Prediction output**

Classification Results <sup>b,c</sup>						
	Discriminant (Own Plan vs Competition)	Predicted Group Membership			Total	
		1.00	2.00	3.00		
Original	Count	1.00	74	9	1	84
		2.00	14	16	1	31
		3.00	2	1	6	9
	%	1.00	88.1	10.7	1.2	100.0
		2.00	45.2	51.6	3.2	100.0
		3.00	22.2	11.1	66.7	100.0
Cross-validated <sup>a</sup>	Count	1.00	69	12	3	84
		2.00	21	8	2	31
		3.00	7	2	0	9
	%	1.00	82.1	14.3	3.6	100.0
		2.00	67.7	25.8	6.5	100.0
		3.00	77.8	22.2	.0	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 77.4% of original grouped cases correctly classified.

c. 62.1% of cross-validated grouped cases correctly classified.

The classification accuracy shown in table 7.12 reflects how well the two functions discriminate among groups of cases. The fact that 77.4 % of all the cases have been correctly classified translates into a model that predicts satisfactorily at least three times out of four. The highest correct classification (88.1%) has been achieved for group (1) (i.e. own plan), followed by a ratio of 66.7% for group (3) (i.e. balanced) and then group (2) (i.e. competition) for which 51.6% of the cases are correctly classified.

The above percentages reflecting the classification accuracy of the discriminant model are compared against the maximum chance ( $C_{MAX}$ ) criterion (i.e. the computation of which is based on the classification of group 1 that has the highest probability of occurrence) and the proportional chance ( $C_{PRO}$ ) criterion (see formulae in Hair et al, 1995) in order to provide further evidence as to whether the discriminating ability of the functions can lead to better than chance predictions of group membership. Based on a  $C_{MAX} = 84/124 = 67.7\%$  and  $C_{PRO} = 52.6\%$ , it is clear that the classification accuracy achieved (i.e. hit ratio= 77.4%) is 14% higher than the former criterion and 47% higher than the latter ( $C_{PRO}$ ), which suggests high predictive validity (Hair et al, 1995).

#### *The predictor variables*

Having ensured that the functions are valid predictors, the emphasis now shifts into the set of the variables used to estimate the two functions. For each function, the variables are ranked according to the largest structure co-efficients (loadings) shown in table 7.13. These reflect the contribution of each predictor to the discriminatory power of a function. In fact the discriminant loadings represent correlations between each predictor and each function and allow one to determine where the discrimination occurs. These correlations are generally preferred in comparison to the standardized canonical discriminant coefficients (weights); the latter are susceptible to multi-collinearity, which could influence the ranking of variables (Hair et al, 1995). Thus, the loadings (shown in table 7.13) are considered to be "relatively more valid than weights as a means of interpreting the discriminating power of independent variables" (Hair et al, 1995, p.206).

The significant discriminant loadings highlighted below (i.e. correlations that are higher than (+ or -) .30) indicate variables used in the interpretation. Specifically, table 7.13 shows that export dependence has got the highest loading of all (see function 2).

**Table 7.13: Summary of the discriminant analysis' output (using ENTER).**

Independent Variables	DISCRIMINANT ANALYSIS No 2							
	Export Performance Assessments (Own Plan vs. Competition)							
	Classification Ratio=77.4 %							
	Structure Coefficients		Group Means (Valid number of cases=124)			Test of equality of group means <sup>a</sup>		
Function 1	Function 2	Group1 (n=84)	Group2 (n=31)	Group 3 (n=9)	Wilk's Lambda	Univ. F	Sig.	
Firm's Size	.373*	.059	4.50	3.79	3.79	.946	3.43	.036**
Annual Sales Turnover	.335*	.199	2.23	1.31	1.86	.947	3.40	.037**
Export Dependence	-.116	.552*	44.32	38.70	72.22	.915	5.61	.005***
Ex.Destination Diversity	-.063	.096*	3.22	3.24	3.46	.996	.257	.773
Export Experience	.088	.123*	3.05	2.89	3.09	.993	.450	.639
Export Commitment	.063	.339*	15.76	14.67	17.33	.967	2.09	.128
Resource Inadequacy	.130	.198*	12.85	11.51	13.33	.982	1.08	.340
Shared Vision	-.070*	.035	17.92	18.25	18.77	.998	.141	.869
Innovativeness	.239*	-.148	19.00	17.96	15.88	.972	1.76	.175
Open-mindedness	.039*	.031	9.36	9.19	9.33	.999	.053	.948
Commitment to Learning	.001	-.057*	19.03	19.22	18.55	.999	.057	.944
Future Orientation	.070*	.054	15.32	14.87	15.22	.997	.16	.846
Risk Orientation	.248*	.046	26.16	24.00	24.11	.975	1.52	.222
Export Market Orientation	-.096	.193*	29.86	29.83	33.11	.986	.87	.420
Environmental Uncertainty	-.139	.228*	30.67	30.83	34.22	.978	1.36	.259
Efficiency	.107*	.086	5.27	5.00	5.22	.993	.40	.668
Effectiveness	.173*	.141	5.40	5.00	5.33	.983	1.07	.346
Adaptiveness	.244*	.178	5.35	4.83	5.22	.968	1.99	.141
Performance Documentation	.206*	.184	14.48	13.03	14.33	.974	1.61	.203

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom

\*Largest absolute correlation between a variable and the functions.

\*\* Significant at the .05 level,

\*\*\* Significant at the .01 level.

Other predictors whose contribution is high are (in descending order): firm's size (function 1) followed by export commitment (function 2) and annual sales turnover (see correlation with function 1). To provide support to the former structure matrix's predictor rankings used in the interpretation (below), each predictor's potency value (per function) and potency index (*cumulative* effect across functions) were computed (see relevant formulae in Hair et al, 1995). Again, all variables are ranked in descending order according to the size of the respective potency indices (see table 7.14 below).

**Table 7.14: Potency indices for the predicting variables**

Independent Variables	Potency values Function (1)	Potency values Function (2)	Potency Index
Export Dependence	.0031	.0362	.0393
Firm's Size	.0322	.0004	.0326
Annual Sales Turnover	.0260	.0047	.0307
Adaptiveness	.0138	.0037	.0175
Innovativeness	.0132	.0026	.0158
Export Commitment	.0009	.0136	.01459
Risk Orientation	.0142	.0002	.01452
Performance Documentation	.0098	.0040	.0138
Environmental Uncertainty	.0044	.0061	.0106
Effectiveness	.0069	.0023	.0093
Resource Inadequacy	.0039	.0046	.0085
Export Market Orientation	.0021	.0044	.0065
Export Experience	.0018	.0018	.0036
Efficiency	.0026	.0008	.0035
Destination Diversity	.0009	.0011	.0020
Future Orientation	.0011	.0003	.0014
Shared Vision	.0011	.0001	.0012
Open-mindedness	.0003	.0001	.0004
Commitment to Learning	.0000	.0003	.0003

Although the potency index is a *relative* measure that represents the *total* discriminating effect of each variable across the two significant discriminant functions, remember that its absolute value has no substantive meaning (Hair et al., 1995). Hence, these indices (and values) only serve the purpose of ranking each variable according to its contribution to a particular function but they (themselves) cannot be used in the interpretation. Table 7.14 in particular, shows that the size of export dependence's potency index is the highest among predictors. The former variable is followed by firm's size and annual sales turnover's contributions respectively. Export dependence has the highest potency value

for function (2), followed by export commitment. In relation to function (1), both firm's size and annual sales turnover score higher than risk orientation (see potency values above). Thus far, table 7.14 supports the structure matrix's ranking shown earlier.

Acknowledging that the ability to discriminate among the different groups (categories) of any nominal dependent variable rests "on the existence of predictor variables which differ in *mean value* from one criterion group to another" (Kachigan, 1986, p.360, emphasis in the original), each independent variable's potential to have a significant contribution to the estimation of the discriminant functions has been assessed by testing for group mean equality. An overview of the relevant group means corresponding to each of the (19) predictors is provided in table 7.13; this also includes all the univariate F values derived from the testing for group mean equality (i.e. the null hypothesis is that there are no mean differences across groups). The testing resulted into *three* discriminators exhibiting significant group mean differences. These are one export- and two company-specific factors, namely, export dependence, firm's size and annual sales turnover.

#### *Interpretation*

The interpretation of the results is based on the use of a territorial map in conjunction with the predictors' discriminant loadings and the respective group means (Hair et al, 1995). The territorial map suggested that function (2) discriminates between firms belonging to group (3) (i.e. balanced) and group (2) (i.e. competition). Moreover export dependence is the variable with the highest contribution to function (2) (see relevant loading indicated in table 7.13). Also the export dependence variable's highest mean value (shown in table 7.13) is found at group (3) (i.e. balanced). In light of the above, it can be suggested that *export dependent* firms tend to make equal (i.e. balanced) use of *both* their own plan and competitors' performance when assessing their export success. Yet, the hypothesis (H2b) tested has not found support (see below).

While export commitment accounts more than the rest of the variables in terms of the variance shared with function (2) (see discriminant loading in table 7.13), it has just missed the .10 significance level implying non-significant differences between the



respective three group means. Hence, it could *not* be suggested what is the specific referent (i.e. own export plan and/or competition) that committed exporters are likely to use when assessing performance. This means that the H2a is not supported (see below).

Shifting attention to function (1), the territorial map showed that the former separates group (1) (own plan) from the rest. In addition, the highest ranked predictor variable associated with function (1) is firm's size (see structure correlation in table 7.13); also, group (1) (own plan) has the highest mean value among the three groups corresponding to the firm's size variable. To conclude, *larger exporters* tend to place higher emphasis on their *own plan* (as opposed to using competitive benchmarking). By implication, the hypothesised relationship H2d is supported.

According to the structure matrix shown in table 7.13, the annual sales turnover's loading with function (1) indicates significant contribution to the discrimination. As mentioned earlier, function (1) discriminates between group (1) (i.e. own plan) and the rest of the groups. In addition, table 7.13 shows that group (1) (i.e. own plan) has the highest mean score among the three significantly different group means corresponding to the annual sales turnover variable. It can be suggested that *firms with a higher annual sales turnover* tend to place more emphasis on their *own plan*, which means that H2e has found support.

In contrast there is no support for the rest of the hypotheses tested (see summary table 7.15), involving risk orientation (H2c), export market orientation (H2f), efficiency (see H2g) and performance documentation (see H2h). These variables are not significant determinants of the frame of reference employed when assessing export success across objectives (the relevant non-significant univariate *F* statistics and structure loading scores with the two functions are shown in table 7.13).

**Table 7.15: Findings on the hypothesised relationship with the frame of reference.**

Contextual characteristic	Relationship	Frame of reference (across objectives)	Findings
H2a. Export Commitment	(+)	Own plan	NS*
H2b. Export Dependence	(+)	Own plan	NS
H2c. Risk Orientation	(+)	Own plan	NS
H2d. Firm's Size	(+)	Own plan	S**
H2e. Annual Sales Turnover	(+)	Own plan	S
H2f. Export Market Orientation	(+)	Competition	NS
H2g. Efficiency	(+)	Own plan	NS
H2h. Performance Documentation	(+)	Own plan	NS

\*Not Supported

\*\* Supported

Although the majority of the eight hypotheses tested have not been supported, the discriminant analysis' results support the proposed conceptualization linking different sets of contextual characteristics to the choice of the frame of reference exporters use when assessing their success (across export objectives). To sum up the findings, export- and company-related factors (3 altogether) have been identified (at an aggregate level) as antecedents of the emphasis exporters place on their own plan vs. competition. In fact, larger exporters and those having higher annual sales turnover are likely to evaluate their performance by placing greater emphasis on their own plan (as opposed to making comparisons with the competitors' performance). In contrast, firms exhibiting greater export dependence (% of export sales) tend to maintain a balanced perspective in their performance evaluations by focusing on both their own plan and export competitors.

#### **7.4.3 Discriminant analysis (3): Emphasis on the time frame employed in export performance assessments across objectives.**

This analysis focuses on the contextual drivers influencing firms' relative preferences for the time horizon employed in export performance assessments (see figure 7.1).

### *The groups*

The dependent variable consists of three groups formed from the respective global priority weights computed (by EC 2000) for each firm individually. Remember that the weighted score attributed to the overall goal is 1.00 (see AHP (G) output in figure 6.2); hence, equal emphasis on short- and long-term horizons across objectives is represented by a score of 0.500 (see mean global priorities for both time horizons in table 6.4, section 6.1.3). The above score is the cut-off point adopted for the selection of cases eligible for classification into each of the three dependent variable groups. The procedure used to assign 167 cases into groups remains the same (see sections 7.3.1 and 7.4.2). The original group membership for this newly created (nominal) variable called time orientation is shown in table 7.16.

**Tabl3 7.16: The time orientation variable.**

<i>Original group membership</i>	
<i>Categories (groups)</i>	<i>Number of cases (Total=167)</i>
Short-term (1)	51
Long-term (2)	100
Balanced (3)	16

Specifically:

*Group 1:* Cases whose global (G) priority for the short-term is higher in comparison to the long-term horizon are designated to group (1) called, *short-term* (i.e. emphasis is placed on short-term performance assessments).

*Group 2:* In contrast, the second (2) group called *long-term*, includes cases whose (G) priority is higher for the long-term horizon (i.e. greater emphasis is placed on long-term assessments).

*Group 3:* The third (3) group called *balanced*, consists of cases that consider the aforementioned time horizons to be equally important (i.e. the weighted scores reflect equal emphasis on short- and long-term considerations).

With respect to the Box's M (i.e. testing homogeneity of variance/covariance across groups), yet again the statistic is significant (341.25,  $p=.00$ ). While the former is a sensitive test, its statistic may not necessarily reflect non-equal group covariance (dispersion) matrices for the independent variables involved (e.g. see section 7.4.2). Thus the rest of the output has been examined prior to deciding whether there is a genuine reason suggesting an assumption violation.

### *The functions*

Given that the analysis model aims to discriminate among three dependent variable groups, two canonical discriminant functions have been estimated. Unfortunately, the testing of the functions resulted into non-significant statistics (see table 7.17) indicating that the functions are unable to discriminate among the three groups of exporters in terms of the differential emphasis placed on the time frames employed.

**Table 7.17: Discriminant analysis (3): Wilk's test**

Wilk's Lambda				
Test of Function(s)	Wilk's Lambda	Chi-square	df	Sig.
1 through 2	.712	37.975	38	.471
2	.870	15.612	18	.620

Therefore, it does not make any sense to proceed with the evaluation of the model fit and the interpretation.

### **7.5 The influence of firms' ownership status on assessments of export success (across objectives).**

A separate (non-parametric) analysis was employed (exploratorily) to identify whether the non-metric variable representing a firm's ownership status has any impact on the

assessment of export success across objectives (at a aggregate level). The ownership status' impact on the AHP (G) output (see figure 6.2) was tested using the Kruskal-Wallis one-way ANOVA. This non-parametric test is suggested for group mean comparisons when the normality assumption is not met (Diamantopoulos and Schlegelmilch, 1997).

Note that the ownership status variable consists of: [1] an independent private company, [2] an independent public liability company, [3] a subsidiary/affiliate company and [4] a division of a multinational firm; 53.8% of the sample are independent private firms (see descriptive statistics in section 5.2.3). Given the fact that there are three key variables representing the assessment of export performance, three such comparisons have been conducted using the test mentioned above.

With respect to (i) the relative importance of export objectives five groups were compared in terms of their mean differences. The resulting chi-square statistic suggested *no* significant difference among the respective five group means compared (2.159,  $p=.707$ ). This was also the case for the three-group comparisons corresponding to (ii) the relative emphases placed on the frame of reference (.937,  $p=.626$ ) and (iii) the time frame (2.156,  $p=.340$ ) respectively. The conclusion is that differences in the ownership status of export firms do not seem to have an impact on assessments of export success (see also relevant findings at a disaggregate level in section 8.5).

#### **7.6 Further analysis at an aggregate level using multinomial logistic regression**

In addition to the discriminant analysis undertaken, a different regression technique (already mentioned in section 7.2) namely logistic regression was employed; its role is complementary. Indeed "in many instances, particularly with more than two levels of the dependent variable, discriminant analysis is the more appropriate technique" (Hair et al, 1998, p. 17). The use of logistic regression in the context of this study is mainly due to the fact that the independent variables employed do not meet the multivariate normality assumption required in discriminant analysis (see assumptions in section 7.3.4). Although there is no suggestion in the literature as to how "sensitive" multiple discriminant

analysis can be in cases of deviation from normality, it is possible for some classification results to be affected “if the data do not come from a multivariate normal distribution” (Sharma, 1996, p.263). Multinomial logistic regression is the method recommended here because it can accommodate multi-chotomous criterion variables while it does not make any distributional assumptions for the independent variables used (Leech et al, 2005).

It is also worth noting that the option of multinomial logistic regression was not available to the researcher when the dataset was analysed (initially) using discriminant analysis (it has been available only after the majority of this study’s findings had been discussed). This is because SPSS (Release 10) was the only version available for the purpose of multivariate analysis. Indeed Kinnear and Gray (2000, p.320) mention about the above version that logistic regression is offered “only for dichotomous criterion variables. For variables comprising three or more categories therefore discriminant analysis is still the only option available in SPSS”. Following the release of the latest versions, it was possible to re-run the analysis using multinomial logistic regression too. The output is included in Appendix D and key findings derived from the application of this regression method are also reported in this and the next chapter.

Like discriminant analysis, logistic regression is a technique “useful for situations in which you want to predict the presence or absence of a characteristic or outcome based on values of a set of predictor variables. It is similar to a linear regression model...[l]ogistic regression coefficients can be used to estimate odds ratios for each of the independent variables in the model. Logistic regression is applicable to a broader range of research situations than discriminant analysis” (Norusis, 1999, p.3). The former technique requires no assumptions but may involve some more complicated computations in comparison (Hair et al, 1998). The outcomes have to be “independent and mutually exclusive; that is, a single case can only be represented once and must be in one group or the other” (Leech et al, 2005, p.109). Multinomial (as opposed to binary) logistic regression (see also Hosmer and Lemeshow, 1989) is used here to model the relationship between the set of the 19 independent variables and each of the three dependent (categorical) variables found at an aggregate level. Remember that each of these

dependent variables entails more than two categories/ groups. More specifically (i) the importance placed on export objectives consists of 5 groups (see section 7.3.1), (ii) the relative emphasis on the frames of reference consists of 3 groups and (iii) the relative emphasis on the time horizon has 3 categories/groups too. Table 7.18 shows the respective multinomial regression models fitting information (at an *aggregate* level) that is in line with the discriminant analysis output presented earlier.

**Table 7.18: Final logistic regression models fitting information (Aggregate level)**

	-2LL	Chi-square	Significance
1. Importance of Export Objectives	276.359	95.78	.062
2. Emphasis on the Frame of Reference	121.416	77.17	.000*
3. Emphasis on the Time Frame	167.327	36.80	.525

\* Significant at the .01 level

With respect to the variable Importance of Export Objectives, the probability of the first regression model's chi-square is higher than the 5% level of significance. The existence of a relationship between the independent variables and the dependent variable is *not* supported (i.e. the null hypothesis that there is no difference between a model without predictors and the model with the predictor variables cannot be rejected). This is also the case for the third model (i.e. Emphasis on the Time Frame).

In contrast, the highly significant chi-square corresponding to the Frame of Reference supports the existence of a relationship between the predictor variables and the relative emphasis exporters place on their own export plan vs. competition when conducting performance assessments. Further inspection of the output (see Appendix D) shows that this model achieved high 76.6% classification accuracy (relative to a 52.5% proportional by chance accuracy). Also note that multicollinearity is not a problem (for any of the three models) as all standard errors (shown in the parameter estimates in Appendix D) are much lower than 2.0 (Hosmer and Lemeshow, 1989). All the likelihood ratio tests along

with the parameter estimates (pointing out significant relationships between each independent and the categorical dependent variable) along with the interpretation of the results are included in Appendix D.

Although none of the hypothesised relationships is supported (at an aggregate level), the multinomial regression output is generally quite consistent with the discriminant analysis output in that it points out significant relationships with the frame of reference (only). The identification of such relationships (involving inadequacy of resources, shared vision and innovativeness) supports the overriding hypothesis linking the context to export performance assessments. Furthermore, a common finding (that resulted from both methods) is that export dependent firms tend to place *equal* emphasis on both referents (own plan and competition) when assessing their export success. Hence, H2b (see section 3.5.1) is not supported (for either method used). Indeed, the parameter estimates shown in Appendix D suggest that export dependent firms are *less* likely to place greater emphasis on either their own export plan (for every unit increase in export dependence the odds on own plan decrease by 0.876) or their competitors' performance (the relevant odds decrease by 0.873).

### **7.7 Summary and comments on findings relating to the first part of the analysis.**

The analysis focused on the contextual determinants of export performance assessments at an *aggregate* level (across objectives). The bivariate analysis' results suggested that the relative importance of export objectives, the emphases on the frame of reference and the time horizon are subject to contextual effects (see table 7.1). In this context note that it was somewhat unexpected to find that innovative and adaptive firms place relatively lower priority on their NPI objective. However, firms whose culture is oriented towards innovativeness and adaptiveness may consider investments in the development and introduction of new products as a prerequisite for success. Having emphasised on NPI objectives and achieved success over the years, such firms may take NPI initiatives for granted. In this respect, it makes sense for exporters endorsing NPI as part of their culture to concentrate on other objectives (e.g. export profits) and strive to succeed in them too.



Moreover, the bivariate results (shown in tables 7.2 and 7.3) raise concern about the relationship among the efficiency, effectiveness and adaptiveness dimensions used in the literature. If the three performance dimensions were found to be complementary (as opposed to exhibiting trade-offs), it would be difficult to explain why they are helpful to use when undertaking assessments of export success (see more in section 2.3.2 and also relevant findings in section 8.6).

Despite the rich bivariate results, the multivariate analysis provided only limited support to the 24 hypothesised relationships (see section 3.5.1) between the context and the assessment of export success. Specifically, there has only been little discrimination among different groups of exporters when export success is assessed across a set of export objectives (i.e. in aggregate). To be more specific, the discriminant analysis led to the identification of export- and company-related factors (3 altogether), which are likely to influence and the frame of reference employed when success is assessed at the export firm level (across objectives). Table 7.19 below shows that *export dependent* firms are found to place equal importance on both their own plan and export competition; in contrast, *larger* exporters and those with a higher annual sales *turnover* tend to appreciate their own export plan relative to competitive benchmarking.

**Table 7.19: Relationships found between the context and the frame of reference.**

CONTEXTUAL CHARACTERISTICS	Emphasis on the frame of reference (across objectives)		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>
<b>Export-related</b>			
Export Dependence			+
<b>Company-related</b>			
Firm's Size	+(H2d)		
Annual Sales Turnover	+(H2e)		

These results confirm the hypotheses H2d, H2e linking export performance assessments to the context within which such assessments are carried out. By implication, there can be differences between firms in terms of the assessment of export success; in fact, such differences can be manifested in the translation of export objectives into indicators.

Although the results pertain only to the frame of reference larger and/or export dependent firms are likely to adopt in their assessments, researchers should pay particular attention to the profile of firms whose export achievements are compared. For example, it would not be fair to use export market share and export market share growth to undertake export success comparisons between highly export dependent firms and large exporters. Such comparisons may be *biased* against large firms because it is less likely to be found to do well; according to table 7.19, large firms tend to place emphasis on their own plan while using export market share implies performance comparisons against competition.

It was unexpected to find no supporting evidence for the hypothesised relationship between (i) export market orientation and an emphasis on competition (see H2f) as well as the hypothesis linking (ii) efficiency to an emphasis on own plan (see H2g). Given the importance of market orientation in exporting (e.g. Cadogan and Diamantopoulos, 1998; Cadogan et al, 2002b), the fact that H2f has not found support creates concern about the extent to which exporters actually are market-oriented. Such orientation should have been manifested in the frame of reference adopted in assessments of export success. Also, a lack of support for H2g contrasts with the notion of efficiency implying the use of an internal referent in evaluations of export success (see section 2.3.1); consequently, questions are also raised as to how an efficiency orientation is operationalised in practice.

The discriminant analysis findings reported in table 7.19 suggest inter-firm differences in terms of the emphasis placed on the own export plan vs. competition referents when assessing export success (across objectives). Moreover the analysis undertaken with the multinomial logistic regression method (due to reasons explained in section 7.6) offers additional support to the hypothesized link between the context and the selection of the frame of reference (at an *aggregate* level). However, there is no explanation yet as to *why* exporters' performance assessments *vary* in terms of the relative emphasis placed on alternative time horizons (i.e. variations of the sorts presented in chapter 6). To do so, further analysis is deemed necessary (see chapter 8).

## **CHAPTER 8**

### **EMPIRICAL EVIDENCE ON THE CONTEXTUAL ANTECEDENTS OF EACH EXPORT OBJECTIVE'S PERFORMANCE ASSESSMENT**

## 8 EMPIRICAL EVIDENCE ON THE CONTEXTUAL ANTECEDENTS OF EACH EXPORT OBJECTIVE'S PERFORMANCE ASSESSMENT.

### 8.1 Rationale of the analysis.

Having completed the first part of the analysis pertaining to the contextual determinants of export performance assessments (chapter 7), it is evident that only little discrimination occurs among different groups of exporters at an *aggregate* level (across objectives). In this context, additional analysis was considered necessary at the *disaggregate* (more detailed) levels of the AHP output (see levels 3 and 4 in the AHP (G) map in figure 6.2) in order to be able to explain the cross-firm variations found in the frame of reference and the time frame adopted when assessing export success. Thus, the 16 relationships hypothesised at an aggregate level (see tables 3.4 and 3.5 in chapter 3) are going to be tested in the domain of each export objective's performance assessment (see table 8.3). Given a set of multiple objectives (export sales, export profit and NPI), the aim is to investigate whether there are contextual influences on the assessment of *each* export objective individually.

The ensuing analysis at the *disaggregate* level is going to examine the relationship between the *entire* set of the (19) contextual antecedents included in the framework (see Figure 3.1) and the relative emphases placed on (i) the frames of reference and (ii) the time frames adopted when evaluating *each* export objective's performance. Such investigation serves the need to understand and capture the notion of export success by understanding and taking into account any inter-firm differences found at a *disaggregate* level; also, it serves this study's intention to provide rare empirical insights to export practitioners' performance assessment approaches. The findings are presented in different sections corresponding to each of the six analyses undertaken (see table 8.1).

Multiple discriminant analysis accommodates for a lack of normality in the dependent variables (see descriptive analysis for the AHP output in chapter 6) and was preferred in comparison to multiple regression. In addition to the discriminant analyses conducted at a

disaggregate level (see table 8.1), a separate analysis was also conducted using the multinomial regression technique mentioned earlier in section 7.6. The output is shown in Appendix D (see more in section 8.6). To identify whether there is any relationship between the non-metric profile variable called ownership status and each export objective assessed, the Kruskal-Wallis one-way ANOVA test was also used (exploratorily).

**Table 8.1: The discriminant analyses carried out at a disaggregate level.**

	DISCRIMINANT ANALYSES*	
<b>Independent Variables</b> <i>(see the set of the 19 factors shown in Figure 3.1)</i>	No1	Export Sales (Own plan vs. Competition)
	No2	Export Sales (Short- vs. Long-term)
	No3	Export profit (Own plan vs. Competition)
	No4	Export profit (Short- vs. Long-term)
	No5	NPI (Own plan vs. Competition)
	No6	NPI (Short- vs. Long-term)

\*Three-group dependent variables correspond to each of the analysis conducted

Each of the dependent variables consists of three groups, the size of which differs (see number of cases in table 8.2). The procedure used to classify cases into groups is described for each analysis separately.

**Table 8.2: The original group membership for all the dependent variable groups.**

DISCRIMINANT ANALYSES	GROUP MEMBERSHIP*		
	<i>Group (1)</i>	<i>Group (2)</i>	<i>Group (3)</i>
	FRAME OF REFERENCE		
	<i>Own Plan</i>	<i>Competition</i>	<i>Balanced</i>
No 1	99	28	40
No 3	100	26	41
No 5	81	44	42
	TIME ORIENTATION		
	<i>Short-term</i>	<i>Long-term</i>	<i>Balanced</i>
No 2	54	79	34
No 4	56	75	36
No 6	38	98	31

\*For each analysis, the total number of cases placed into groups is 167.

Remember from section 7.4 that the purpose of using multiple discriminant analysis may be either (i) explanatory (the analysis focuses on enabling the discrimination between different groups when all the predictors are included in a model) or (ii) predictive (the analysis focuses on the detection of those predictors showing higher accuracy in classifying cases into groups). In light of the fact that there are specific hypothesized relationships to be tested, the enter method was preferred as before (see section 7.4.2). In addition to reflecting the fact that the main purpose of the analysis is explanatory, the enter method helps analyse simultaneously and investigate the relationship between the set of the 19 contextual variables included in Figure 3.1 and the AHP output representing *each objective's* performance assessment.

However, the application of the stepwise (sequential) method was considered too. This method of estimation *explores* the potential for greater model parsimony. While exploring the possibility for a more parsimonious model is consistent with the objectives of this study, the stepwise method's downside is the (often) lower classification rate (weaker predictive accuracy) in comparison. In other words the difference between using stepwise vs. enter methods is an issue of identifying the best predictor(s) vs. the best prediction possible. In this context, note that when a classification rate is found to be no better than chance, a discriminant model's fit with the data is considered poor and could not be relied upon for hypotheses testing. In light of the expectation that the simultaneous estimation of the discriminant functions (using enter) would lead to higher classification rates (showing better model fit with the data) due to the larger number of predictors included in a model (Hair et al, 1995), the stepwise approach has only been applied to the set of the significant variables derived by using enter. This approach allows further selection so as to end up with a (parsimonious) model consisting of only those predictors exhibiting the highest discriminating power in comparison. At the least, the exploratory use of the stepwise method serves this study's intention to provide guidance to future research by pointing to specific contextual factors that seem to be the best predictors of all (or contribute the most to the discrimination among exporters).

Having considered the above, the outputs obtained by using both discriminant function estimation methods are displayed for each analysis undertaken (see table 8.1 above) so as let the reader assess for himself/herself the best predictors identified with both methods as well as the respective discriminant models' fit.

Before presenting each analysis separately, table 8.3 summarises the hypotheses to be tested at the *disaggregate* performance assessment level (i.e. in the context of the export sales, export profit and NPI objectives).

**Table 8.3: The hypothesized links between contextual factors and the performance assessment of the export sales, export profit and NPI objectives.**

<b>The relative emphasis on the Frame of Reference</b>		
<b>Contextual characteristic</b>	<b>Relationship</b>	<b>Frame of Reference</b>
H2a. Export Commitment	(+)	Own plan
H2b. Export Dependence	(+)	Own plan
H2c. Risk Orientation	(+)	Own plan
H2d. Export Firm's Size	(+)	Own plan
H2e. Annual Sales Turnover	(+)	Own plan
H2f. Export Market Orientation	(+)	Competition
H2g. Efficiency	(+)	Own plan
H2h. Performance Documentation	(+)	Own plan
<b>The relative emphasis on the Time Frame</b>		
<b>Contextual characteristic</b>	<b>Relationship</b>	<b>Time Frame</b>
H3a. Shared Vision	(+)	Long-term
H3b. Innovativeness	(+)	Long-term
H3c. Open-mindedness	(+)	Long-term
H3d. Future-oriented Culture	(+)	Long-term
H3e. Commitment to Learning	(+)	Long-term
H3f. Efficiency	(-)	Long-term
H3g. Effectiveness	(+)	Long-term
H3h. Adaptiveness	(+)	Long-term

Table 8.4 includes the Box's M test statistics for the set of the six discriminant analyses undertaken. The resulting statistics reflect whether the assumption of homogeneity of variance/covariance matrices of predictors across groups is satisfied (see section 7.3.4). The null hypothesis assumes equal group variance/covariance (dispersion) matrices and table 8.4 shows that two tests returned significant statistics when they should not. As mentioned in section 7.4, the Box's M is a sensitive test and the statistics highlighted below may not actually indicate differences in the dispersion matrices.

**Table 8.4: Box' M test statistics.**

Six Discriminant Analyses	Box's M
No 1: Export Sales (Own Plan vs. Competition)]	682.04, p=0.00**
No 2: Export Sales (Short vs. Long-term)	16.62, p=0.013*
No 3: Export Profit (Own Plan vs. Competition)	11.06, p=0.098
No 4: Export Profit (Short vs. Long-term)	2.16, p=0.343
No 5: NPI (Own Plan vs. Competition)	8.19, p=0.241
No 6: NPI (Short vs. Long-term)	-

\* Significant at the .05 level

\*\*Significant at the .01 level

On the basis of an ambivalent indication for an assumption violation, the foregoing statistics have been accepted unless the examination of the relevant analyses' output suggests otherwise (i.e. this did not actually turn out to be the case thereby indicating no reason to worry about an assumption violation, see more in section 7.4). Also note that the prior probabilities used to classify cases into groups have been computed in proportion to the respective group sizes (see more in section 7.4.2).



## 8.2 Empirical findings relating to export sales performance assessments.

### 8.2.1 Analysis no 1: Assessing export sales performance against own plan vs. competition.

This analysis, aims to discriminate among groups of exporters whose export sales' attainment is assessed against either own plan or competition or reflects equal emphasis on both. The groups are:

*Group 1* is called *own plan* and includes cases whose priority weight reflects relatively greater emphasis on a firm's own plan when the export sales objective is assessed.

*Group 2* is called *competition* and includes cases whose priority weight reflects relatively greater emphasis on competition when the export sales objective is assessed.

*Group 3* is called *balanced* and consists of cases that consider both frames of reference to be equally important for the assessment of export sales performance (i.e. the respective local priority weights are equal).

The procedure used to assign cases into the dependent variable groups is the same as before (see sections 7.4.1 and 7.4.2). Given that the local priority score attributed to the export sales objective is 1.00 (see section 6.2.1), a weighted local priority of 0.500 reflects equal emphasis on own plan and competition (the sum of both weights equals 1.00 as the AHP (L) map shows in figure 6.3). Thus, the cut-off score used to classify cases into the foregoing groups is 0.500. The group sizes formed are shown above (see group membership in table 8.2).

The enter method resulted into two significant functions; function (1) ( $p < .01$ ) and function (2) ( $p < .10$ ). The classification results are shown in table 8.5. The accuracy is 76.6%, that is about 20% higher than the  $C_{MAX}=63.7\%$  (reflecting the classification accuracy for the largest group) and 60% higher than the proportional chance criterion ( $C_{PRO}=47.4\%$ ). A classification ratio that is (at least) 25% higher than chance (see Hair,

1995) places confidence in a function's predictive validity. Table 8.5 summarises the output including the predictor variables ranked above the rest in terms of their structure correlations.

**Table 8.5: Summary of the discriminant analysis' output (ENTER).**

Independent Variables	DISCRIMINANT ANALYSIS No 1							
	Export Sales (Own Plan vs. Competition) (ENTER)							
	Classification Ratio= 76.6%							
	Structure Coefficients		Group Means (Valid number of cases=124)			Test of equality of group means <sup>a</sup>		
Function 1	Function 2	Group1 (n=79)	Group2 (n=18)	Group 3 (n=27)	Wilk's Lambda	Univ. F	Sig.	
Risk Orientation	.468*	.275	26.20	20.50	26.66	.896	7.00	.001***
Performance Documentation	.426*	.110	14.64	11.55	14.25	.924	4.94	.009***
Adaptiveness	.419*	.042	5.40	4.44	5.18	.929	4.62	.012**
Effectiveness	.363*	.087	5.45	4.55	5.33	.944	3.56	.031**
Export Market Orientation	.068	.346*	29.70	28.33	32.40	.966	2.14	.122
Firm's Size	.086	-.322*	4.42	4.29	3.80	.969	1.94	.148
Export Dependence	.159	.316*	44.6	34.77	52.70	.963	2.35	.100
Export Commitment	.305	.310*	15.77	13.50	16.51	.937	4.05	.02**

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom

\* Largest absolute correlation between each variable and the corresponding function.

\*\* Significant at the .05 level

\*\*\* Significant at the .01 level.

Specifically, table 8.5 shows 5 significant predictors. Risk orientation and performance documentation exhibit highly significant differences among group means and both are associated with function (1). Significant group mean differences also exhibit the adaptiveness, effectiveness and export commitment variables. The former two are significantly correlated with function (1) and the latter, with function (2) respectively.

Before interpreting the results pertaining to how the entire set of the independent variables predicts the dependent variable, these five predictors mentioned above have been analysed stepwise in order to end up (if possible) with a more parsimonious model (see output in table 8.6).

**Table 8.6: Summary of the discriminant analysis' output (STEPWISE).**

Independent Variables	DISCRIMINANT ANALYSIS No 1							
	Export Sales (Own Plan vs. Competition) (STEPWISE)							
	Classification Ratio=61.6%							
	Coefficients		Group Means (Valid total number=124)			Test of equality of group means*		
Structure Loading	Discriminant Weight	Group1 (n=92)	Group2 (n=23)	Group 3 (n=37)	Wilk's Lambda	Univ. F	Sig.	
Risk Orientation	1.00	1.00	26.13	22.08	26.40	.942	4.6	.011**

\* Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom

\*\* Significant at the .05 level.

There is only one highly significant function ( $p < .01$ ) and a single significant variable namely risk orientation explaining all the variance and contributing the highest to the discrimination. The model's fit is not good as the marginally higher than chance prediction accuracy suggests (i.e. classification ratio=61.6% and  $C_{MAX}=59.7\%$ ). The model derived with the enter method (see below) has better prediction accuracy than that achieved stepwise. Nevertheless, the latter method allows one to identify the variable that is most likely to explain differences between the exporters' emphasis on the own plan vs. competition referents when assessing export sales performance.

The interpretation of the output (derived by using *enter*) follows (i.e. in this context, note that a step-by-step interpretation of a discriminant analysis output to be used as an example, can be seen in section 7.4.2). Although no evidence was found (at an aggregate level) to support the hypothesized influence of risk orientation (H2c) and performance documentation (H2h) on assessments of export success against own plan (see section 7.4.2), such influence is evident in the evaluation of export sales performance (at a *disaggregate* level of assessment). In light of the fact that function (1) discriminates between groups (1) and (2), the analysis output (see table 8.5) suggests that *risk oriented* exporters and those *documenting* their performance tend to place higher emphasis on their *own* plan (as opposed to competitors' sales) when evaluating their export sales performance. Thus, H2c and H2h (see table 8.7) are supported at a *disaggregate* level.

Moreover table 8.5 shows that firms focusing on *adaptiveness* and/or *effectiveness* are also likely to assess the attainment of their export sales objective against *planned* sales.

Function (2) was found to discriminate between groups (3) and (2). In light of the output shown above (see relevant group means in table 8.5), it can be suggested that *export committed* firms (H2a) tend to assess their export sales objectives by placing equal emphasis on *both referents* as opposed to using competitive benchmarking alone. Yet H2a has not found support (see table 8.7). Export dependence (H2b) and an export market orientation (H2f) do not seem to be related to the referents used in export sales assessments. Thus, there is no support for H2b and H2f. Recall that a lack of evidence for a relationship between export market orientation and an emphasis on competition was noted at an aggregate level of assessment too (see section 7.4.2). Unlike what was found in aggregate, a firm's size (H2d) and annual sales turnover (H2e) do not seem to influence the selection of the referents employed at a disaggregate level. Hence, H2d and H2e are not supported (see table 8.7). Similarly, the hypothesis linking an efficiency orientation to an emphasis on own export sales plan (H2g) is not supported either; this hypothesis also lacked support at an aggregate level (see section 7.4.2) thereby raising questions about the exporters' operationalisation of efficiency (see also findings in section 8.3.1). Table 8.7 summarises the hypothesized relationships tested.

**Table 8.7: Findings involving the hypothesised relationships with the frame of reference used in export sales performance assessments.**

Contextual characteristic	Relationship	Frame of reference	Findings
H2a. Export Commitment	(+)	Own plan	NS*
H2b. Export Dependence	(+)	Own plan	NS
H2c. Risk Orientation	(+)	Own plan	S**
H2d. Firm's Size	(+)	Own plan	NS
H2e. Annual Sales Turnover	(+)	Own plan	NS
H2f. Export Market Orientation	(+)	Competition	NS
H2g. Efficiency	(+)	Own plan	NS
H2h. Performance Documentation	(+)	Own plan	S

\*Not Supported

\*\* Supported

It is clear from these empirical findings that managerial, performance- and export-related factors (5 altogether) are associated with the selection of referents used in export sales evaluations. The results indicate inter-firm differences in the translation of the export sales objective into export sales indicators (see more findings below).

### 8.2.2 Analysis no 2: Assessing export sales performance in the short- vs. long-term.

Shifting attention to the time frame employed in export sales performance assessments the following analysis discriminates among groups of exporters focusing on either a short- or a long-term horizon or place equal emphasis on both time dimensions. The dependent variable namely time orientation (see table 8.8) consists of three groups:

*Group 1*, called *short-term* includes cases whose priority weight reflects relatively greater emphasis on a short-term horizon when evaluating export sales performance.

*Group 2*, called *long-term* includes cases whose weighted score reflects relatively greater emphasis on a long-term horizon when the export sales objective is assessed.

*Group 3*, called *balanced* entails those cases that consider both time frames to be equally important in the assessment of export sales performance (i.e. equal weights correspond to short- and long-term dimensions).

To assignment of cases to the dependent variable groups has taken into account the time horizons' weighted scores with respect to the export sales objective's score (computed for each firm individually) (see again the hierarchy in the AHP (G) map in figure 6.2). To be specific, the time horizons' global priority weights have been *normalised* against the respective export sales objective's global weight for each firm individually. The normalised scores are shown in boxes 7, 8, 13 and 14 in the aggregate matrix (see figure 6.4). Recall that such normalised scores allow comparisons to be made within the context of the export sales objective and have been used earlier when presenting findings relating to the time orientation involved in export sales assessments (see section 6.2.2.2). Once again, the 0.500 score (reflecting equal emphasis on both time horizons), is the cut-off

score used to assign cases into the three dependent variable groups. The original group membership for the time orientation variable is presented in table 8.2.

The simultaneous discriminant function estimation method (i.e. enter), resulted into the significant function (1) ( $p < .10$ ) and the non-significant function (2) ( $p = .283$ ). Table 8.8 shows the highest ranked predictors in terms of the size of their structure coefficients with function (1) (see the relevant interpretation below). The function is a valid predictor as indicated by the classification accuracy achieved (i.e. hit ratio = 65.3% is 39% higher than  $C_{MAX} = 46.7\%$ ).

**Table 8.8: Summary of the discriminant analysis' output (ENTER).**

Independent Variables	DISCRIMINANT ANALYSIS No 2							
	Export Sales (Short- vs. Long-term) (ENTER)							
	Classification Ratio = 65.3%							
	Function 1		Group Means (Valid number of cases = 124)			Test of equality of group means <sup>a</sup>		
Structure Loading	Discriminant Weight	Group 1 (n=42)	Group 2 (n=58)	Group 3 (n=24)	Wilk's Lambda	Univ. F	Sig.	
Effectiveness	.436*	.674	4.83	5.51	5.58	.935	4.17	.018 <sup>c</sup>
Ex. Destination Diversity	-.435*	-.652	3.46	3.29	2.75	.927	4.76	.010 <sup>d</sup>
Adaptiveness	.429*	.458	4.76	5.46	5.41	.931	4.50	.013 <sup>c</sup>
Shared Vision	.406*	.611	16.47	18.72	19.29	.947	3.40	.036 <sup>c</sup>
Innovativeness	.329*	.105	17.14	19.25	19.37	.962	2.36	.099 <sup>b</sup>

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom.

\* Largest absolute correlation between each variable and the corresponding function.

<sup>b</sup> Significant at the .10 level

<sup>c</sup> Significant at the .05 level

<sup>d</sup> Significant at the .01 level.

To investigate whether it is possible to come up with a more parsimonious model, the former 5 significant predictors were subsequently analysed stepwise. This resulted into the non-significant discriminant function (2) ( $p = .115$ ) and the highly significant function (1) ( $p < .01$ ). Table 8.9 displays the results.

Table 8.9: Summary of the discriminant analysis' output (STEPWISE).

Independent Variables	DISCRIMINANT ANALYSIS No 2							
	Export Sales (Short-term vs. Long-term) (STEPWISE)							
	Classification Ratio=47.9%							
	Function 1		Group Means (Valid number of cases=162)			Test of equality of group means <sup>a</sup>		
Structure Loading	Discriminant Weight	Group1 (n=53)	Group2 (n=78)	Group 3 (n=31)	Wilk's Lambda	Univ. F	Sig.	
Ex.Destination Diversity	1.0	1.0	3.59	3.2	2.84	.920	6.94	.001**

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 159 degrees of freedom

\*\* Significant at the .01 level.

With respect to the highly significant function (1), table 8.9 shows that it is only the export destination diversity variable that contributes the highest to the discrimination; according to this result, exporters operating in a diversity of markets tend to adopt a short-term view in their export sales performance assessments. Despite the identification of the best predictor among those examined, a single predictor model's classification accuracy is almost equal to chance (i.e. hit ratio=47.9% and  $C_{MAX}=47.3\%$ ). In contrast, the model derived by using *enter* reflects a much better fit with the data. The output derived by using *enter*, is interpreted below.

In view of the fact that function (1) was found to discriminate between group (3) (i.e. balanced) and the rest of the groups, the output shown in table 8.9 suggests that the *less diverse* firms are in terms of their *export destinations* the *less likely* it is to focus on both their *short-* and *long-term* export sales performance. In fact the respective group mean shown in table 8.8 seem to associate exporters' short-termism (see Madsen, 1998) with firms operating in a diversity of export markets (this is in line with the output produced stepwise). Furthermore, table 8.8 shows that export firms oriented towards *effectiveness* (see H3g) and those whose culture encourages a *shared vision* (see H3a below) as well as *innovation* (see H3b) tend to be equally interested in *both* their short- and long-term export sales. Also, exporters exhibiting an average emphasis on *adaptiveness* (see H3h) are likely to focus on both their *short-* and *long-term* export sales performance. Hence,

there is no support for H3a, H3b, H3g and H3h (at a disaggregate level) in the export sales performance assessment domain (see table 8.10).

**Table 8.10: Findings involving the hypothesised links with the time frame used in export sales performance assessments.**

Contextual characteristic	Relationship	Time Frame	Findings
H3a. Shared Vision	(+)	Long-term	NS*
H3b. Innovativeness	(+)	Long-term	NS
H3c. Open-mindedness	(+)	Long-term	NS
H3d. Future-oriented Culture	(+)	Long-term	NS
H3e. Commitment to Learning	(+)	Long-term	NS
H3f. Efficiency	(-)	Long-term	NS
H3g. Effectiveness	(+)	Long-term	NS
H3h. Adaptiveness	(+)	Long-term	NS

\*Not Supported

The above results suggest that neither efficiency nor effectiveness or adaptiveness is associated with a specific time horizon in export practitioners' sales assessments. Indeed, none of the relevant hypothesized relationships (see table 8.10) have been supported. These results seem to reflect the fact that exporters are likely to use *more* than one time horizon irrespective of the performance orientation adopted. For example, although firms' orientation towards effectiveness implies the adoption of a long-term perspective (see relevant definitions in section 2.3.1), focusing on effectiveness does not prevent export practitioners from tracking their export firms' short-term sales performance too. This may have implications for the three-dimensional performance conceptualisation (see Al-Khalifa and Morgan, 1995; Katsikeas et al., 2000; Morgan et al, 2002) used to explain export sales performance assessments (see more in chapter 9).

It is evident that managerial, export- and performance-related factors (5 altogether) are likely to affect the selection of the time frame exporters adopt when assessing their export sales performance. In addition, it was found earlier (see section 8.2.1) that managerial, export- and performance-related factors are also likely to influence the emphasis on the



frame of reference used in export sales assessments. Considering the above evidence and the fact that the measurement of export sales performance has attracted much attention in export research (for relevant reviews see Katsikeas et al, 2000; Sousa, 2004), the export sales measure selection should better reflect the particular characteristics of the firms studied. Indeed, differences such as those found cast doubt on the conduct of export sales success comparisons based on any given export sales indicator(s).

### **8.3 Empirical findings relating to export profit performance assessments.**

#### **8.3.1 Analysis no 3: Assessing export profitability against own plan vs. competition.**

This analysis focuses on discriminating among groups of exporters whose export profit performance is assessed by placing higher emphasis on either own plan or competition or equal emphasis on both. The dependent variable groups are:

*Group 1, called own plan;* it includes cases whose priority weight reflects relatively greater emphasis on a firm's own plan when the export profit objective is assessed.

*Group 2, called competition;* it includes cases whose priority weight reflects relatively greater emphasis on competition when the export profit objective is assessed.

*Group 3, called balanced;* it consists of cases that consider both frames of reference to be equally important for the assessment of export profitability (i.e. the respective local priority weights are equal).

As mentioned in the previous section relating to the export sales objective's assessment, the local priority score attributed to the export profit objective is 1.00. Hence, a weighted local priority of 0.500 reflects equal emphasis on both own plan and competition (i.e. the sum of both weights equals 1.00 as the AHP (L) map shows in figure 6.3). The cut-off score used to classify cases into the former three groups is 0.500; the respective group membership is presented in table 8.2.

The enter method resulted into two significant functions; function (1) ( $p < .01$ ) and function (2) ( $p < .10$ ). Given that the classification accuracy achieved is at least 23% better than chance (i.e. hit ratio=72.6% and  $C_{MAX}$ =58.8%), the functions are valid predictors.

**Table 8.11: Summary of the discriminant analysis' output (ENTER).**

Independent Variables	DISCRIMINANT ANALYSIS No 3							
	Export Profit (Own Plan vs. Competition) (ENTER)							
	Classification Ratio= 72.6%							
	Structure Coefficients		Group Means (Valid number of cases=124)			Test of equality of group means <sup>a</sup>		
Function 1	Function 2	Group1 (n=73)	Group2 (n=21)	Group 3 (n=30)	Wilk's Lambda	Univ. F	Sig.	
Risk Orientation	.441*	.325	25.64	21.33	27.96	.892	7.34	.001***
Export Market Orientation	.375*	-.031	29.42	28.09	33.13	.936	4.10	.019**
Commitment to Learning	.361*	.102	18.83	17.0	21.0	.939	3.94	.022**
Environmental Uncertainty	.353*	-.088	30.28	29.66	33.56	.942	3.75	.026**
Export Commitment	.322*	.184	15.60	14.0	16.73	.945	3.55	.032**
Shared Vision	.304*	.160	18.04	16.04	19.56	.951	3.10	.049**
Efficiency	-.124	.483*	5.50	4.71	4.8	.935	4.20	.017**
Performance Documentation	.160	.478*	14.68	11.90	14.26	.932	4.42	.014**
Effectiveness	.174	.404*	5.45	4.61	5.40	.945	3.50	.033**
Adaptiveness	.186	.397*	5.35	4.57	5.33	.945	3.54	.032**

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom

\* Largest absolute correlation between each variable and the corresponding function.

\*\* Significant at the .05 level

\*\*\* Significant at the .01 level.

In the interests of model parsimony the ten predictor variables highlighted in table 8.11 have been subsequently analysed stepwise; this analysis resulted into a single highly significant canonical function ( $p < .01$ ). The output derived stepwise is summarized in table 8.12 and includes only one highly significant predictor, namely risk orientation. Despite the identification of the "best" predictor explaining all the variance in terms of the referents firms use to assess their export profitability, the resulting model's predictive ability is almost equal to chance (hit ratio=59.8% and  $C_{MAX}$ =59.1%).

**Table 8.12: Summary of the discriminant analysis' output (STEPWISE).**

Independent Variables	DISCRIMINANT ANALYSIS No 3							
	Export Profit (Own Plan vs. Competition) (STEPWISE)							
	Classification Ratio=59.8%							
	Function 1		Group Means (Valid number of cases=149)			Test of equality of group means <sup>a</sup>		
Structure loading	Discriminant weight	Group 1 (n=88)	Group 2 (n=25)	Group 3 (n=36)	Wilk's Lambda	Univ. F	Sig.	
Risk Orientation	1.0*	1.0	25.57	22.32	27.66	.925	5.90	.003**

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 146 degrees of freedom

\* Largest absolute correlation between each variable and the corresponding function.

\*\* Significant at the .01 level

In contrast, the model derived by using the *enter* method shows a better fit with the data; the relevant output (see table 8.11) is interpreted below.

The highly significant function (1) was found to discriminate between groups (2) and (3) while function (2) between groups (1) and (2) respectively. With respect to the predictors having the highest correlation with function (1), table 8.11 shows that *risk oriented* exporters are likely to place *equal* emphasis on both referents used in export profitability evaluations. Although this result highlights the impact a risk-oriented culture may have on the selection of the frame of reference, it does not support the hypothesized relationship (see H2c in table 8.13 below) between risk and performance assessments against planned profits. This is also the case for *export market oriented* (H2f) firms whose focus is likely to be on *both* referents (as opposed to export competition only). Furthermore firms having a learning-oriented culture (exhibiting *commitment to learning* and a *shared vision/purpose*) as well as those operating in *uncertain* export environments are likely to concentrate on *both* their own export plan and competition when assessing their export profitability. Finally, *committed* exporters (see H2a below) tend to divide their attention to *both* referents when evaluating their export profit performance; this is consistent with earlier findings pertaining to the export sales objective's assessment (see section 8.2.1).

With respect to function (2), the results (see table 8.11) support both H2g and H2h (see table 8.13). Specifically, it is evident that firms striving for *efficiency* and those focusing on *documenting* their performance are likely to place emphasis on export profit assessments against their *own plan*. This is also the case for exporters adopting an *effectiveness* and/or *adaptiveness* orientation. It seems that exporters prefer to use their *own* export profit plan as a referent (as opposed to competitors' export profitability) irrespective of the performance orientation adopted. This particular finding supports relevant studies (see Katsikeas et al., 2000) whose measure selection reflects export profitability evaluations against an internal referent (e.g. export profit ratio, export profit growth). Table 8.13 summarises the results relating to the hypothesised relationships.

**Table 8.13: Findings involving the hypothesised links with the frame of reference used in export profit performance assessments.**

Contextual characteristic	Relationship	Frame of reference	Findings
H2a. Export Commitment	(+)	Own plan	NS*
H2b. Export Dependence	(+)	Own plan	NS
H2c. Risk Orientation	(+)	Own plan	NS
H2d. Firm's Size	(+)	Own plan	NS
H2e. Annual Sales Turnover	(+)	Own plan	NS
H2f. Export Market Orientation	(+)	Competition	NS
H2g. Efficiency	(+)	Own plan	S**
H2h. Performance Documentation	(+)	Own plan	S

\*Not Supported

\*\* Supported

Despite that only two hypothesis have found support at this disaggregate level, the foregoing results suggest that the emphasis on the frame of reference employed in export profitability assessments can be subject to various export-, management-, performance-related and environmental factors (10 altogether). Such contextual influences explain *why* firms may differ in terms of the referent used to translate their export profit objective into measures. It is also worth noting that the influence of contextual factors such as export commitment (see H2a) are only identified at a *disaggregate* level of assessment (see results at an aggregate level in section 7.4.2). This implies that inter-firm *variations* may

not be acknowledged when success is assessed (and compared) in aggregate (across objectives); hence, different firms require attention to their performance evaluation of individual objectives such as export profit.

### **8.3.2 Analysis no 4: Assessing export profitability in the short- vs. long-term.**

This analysis discriminates among groups of exporters focusing on either a short- or a long-term horizon or place equal emphasis on both time frames when evaluating the attainment of their export profit objective. The dependent variable called time orientation (see table 8.14) consists of three groups:

*Group 1*, called *short-term* includes cases whose priority weight reflects relatively greater emphasis on short-term export profitability assessments.

*Group 2*, called *long-term* includes cases whose weighted score reflects relatively greater emphasis on long-term assessments of export profitability.

*Group 3*, called *balanced* includes those cases that place equal emphasis on both time frames when evaluating their export profit performance (i.e. equal weights correspond to short- and long-term dimensions).

The assignment of cases to the dependent variable groups is based on the time horizons' weighted scores involved in the export profitability assessment (see again the hierarchy in the AHP (G) map in figure 6.2). To be specific, the time horizons' global priority weights have been *normalised* against the respective export profit objective's global weight for each firm individually. The normalised scores are shown in boxes 9, 10, 15 and 16 in the aggregate matrix (see figure 6.4). Such normalised scores allow comparisons to be made within the domain of the export profit objective's performance assessment (e.g. see findings relating to the time orientation used in export profit assessments in see section 6.2.2.3). The 0.500 score that is also the cut-off score used to assign cases into the three dependent variable groups represents equal emphasis on both short- and long-time frames. The original group membership for the time orientation variable is presented in table 8.2.

Using the enter method, the resulting function (1) is significant ( $p < .05$ ) but function (2) is not. The former function's ability to discriminate among the existing groups is high. This is reflected in the classification accuracy achieved that is 37,4% higher than chance (i.e. hit ratio=65.3% and  $C_{MAX}=47.5\%$ ). The following table 8.15 displays the results.

**Table 8.15: Summary of the discriminant analysis' output.**

Independent Variables	DISCRIMINANT ANALYSIS No 4							
	Export Profit (Short-term vs. Long-term) (ENTER)							
	Classification Ratio=65.3%							
	Structure Coefficients		Group Means (Valid number of cases=124)			Test of equality of group means <sup>a</sup>		
Function 1	Function 2	Group1 (n=42)	Group2 (n=59)	Group 3 (n=23)	Wilk's Lambda	Univ. F	Sig.	
Risk Orientation	.532*	.047	22.78	26.42	27.95	.902	6.60	.002***
Adaptiveness	.441*	.008	4.78	5.35	5.65	.930	4.52	.013**
Commitment to Learning	.420*	-.125	17.47	19.28	21.3	.933	4.32	.015**
Shared Vision	.402*	-.122	16.61	18.28	20.17	.939	3.96	.022**
Export Market Orientation	.332*	-.078	28.35	30.42	32.43	.958	2.64	.075 <sup>b</sup>
Future Orientation	.313*	-.027	14.30	15.44	16.21	.964	2.28	.106
Environmental Uncertainty	-.022	-.401*	31.64	29.81	32.73	.964	2.29	.106
Resource Inadequacy	-.049	-.314*	12.40	13.16	11.26	.977	1.45	.239

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 121 degrees of freedom

\* Largest absolute correlation between each variable and the corresponding function.

<sup>b</sup> Significant at the .10 level

\*\* Significant at the .05 level

\*\*\* Significant at the .01 level.

Subsequently, the 5 significant predictors shown above have been analysed with the stepwise method. The analysis resulted into a single significant canonical discriminant function ( $p < .05$ ) and the model includes export market orientation as the (best) predictor that explains all the variance (see table 8.16). Yet, it is evident that a parsimonious model based on this single predictor that is able to discriminate between exporters' short- vs. long-term considerations, is achieved at the cost of classification accuracy, which is not much better than chance (i.e. hit ratio=45.4% when  $C_{MAX}=44.7\%$ ).

**Table 8.16: Summary of the discriminant analysis' output (STEPWISE).**

Independent Variables	DISCRIMINANT ANALYSIS No 3							
	Export Profit (Short- vs. Long-term) (STEPWISE)							
	Classification Ratio=45.4%							
	Function 1		Group Means (Valid number of cases=157)			Test of equality of group means <sup>a</sup>		
Structure loading	Discriminant weight	Group1 (n=51)	Group2 (n=73)	Group 3 (n=33)	Wilk's Lambda	Univ. F	Sig.	
Exp. Market Orientation	1.0*	1.0	25.57	22.32	27.66	.948	4.24	.016**

<sup>a</sup> Wilk's lambda and univariate F ratio with 2 and 154 degrees of freedom

\* Largest absolute correlation between each variable and the corresponding function.

\*\* Significant at the .05 level

The predictive validity of the model derived by using the *enter* method is better in comparison; the relevant results (shown in table 8.15) are interpreted below.

Table 8.15, includes 5 significant predictors ranked in terms of the size of their structure correlation with function (1); this discriminates between groups (1) and (3). Moreover, the respective group mean differences suggest that *risk* oriented exporters are more likely to place *equal* importance on *both* short- and long-term considerations (as opposed to having only short-term views) when assessing the attainment of their export profit objectives. In addition, export firms that are *adaptive* (see H3h in table 8.17), committed to *learning* (see H3e in table 8.17) and those *sharing a common vision/purpose* (see H3a in table 8.17), tend to evaluate their export profitability *both* in the short- and long-run. Finally, *market oriented* exporters also seem to be inclined to adopt *both* time horizons when evaluating export profitability.

Although the above empirical findings highlight the importance of both time horizons in export profitability assessments, none of the hypothesized links involving management- and performance-related factors is supported at the disaggregate level of export profitability assessments (see table 8.17). With respect to the efficiency, effectiveness and adaptiveness performance orientations, the relevant findings raise concern about the three dimensions' supposedly conflicting nature (see relevant criticism in section 2.3.2) and

question whether these dimensions are actually translated into distinctly different measurement practices; so far they do not but if they do not, then what is the purpose of using them (this issue is further discussed in chapter 9).

**Table 8.17: Findings involving the hypothesised links with the time frame used in the assessment of export profit performance.**

Contextual characteristic	Relationship	Time Frame	Findings
H3a. Shared Vision	(+)	Long-term	NS*
H3b. Innovativeness	(+)	Long-term	NS
H3c. Open-mindedness	(+)	Long-term	NS
H3d. Future-oriented Culture	(+)	Long-term	NS
H3e. Commitment to Learning	(+)	Long-term	NS
H3f. Efficiency	(-)	Long-term	NS
H3g. Effectiveness	(+)	Long-term	NS
H3h. Adaptiveness	(+)	Long-term	NS

\*Not Supported

While the majority of export profit measures used in the literature are short-term oriented (see Katsikeas et al, 2000; Sousa, 2004), future operationalisations of export profit success may need to redress the balance. In light of the above findings, capturing export profitability need *not* be restricted to a short- or a long-term focus. Instead the translation of the export profit objective into performance measures should better reflect equal attention to both time horizons.

#### **8.4 Empirical findings relating to the NPI objective's performance assessments.**

##### **8.4.1 Analysis no 5: Assessing NPI performance against own plan vs. competition.**

The focus of this analysis is on discriminating among groups of firms whose new product introduction objective is assessed either against own plan or competition or both. The procedure used to assign cases into the dependent variable groups is the same as before (see sections 7.4.1 and 7.4.2). The groups are:



*Group 1* is called *own plan* and includes cases whose priority weight reflects relatively greater emphasis on a firm's own plan when the NPI objective is assessed.

*Group 2* is called *competition* and includes cases whose priority weight reflects relatively greater emphasis on competitors for NPI performance assessments.

*Group 3* is called *balanced* and consists of cases that consider both frames of reference to be equally important for the assessment of NPI performance.

A weighted local priority score of 0.500 reflects equal emphasis on both own plan and competition (the sum of both weights equals 1.00 as the AHP (L) map shows in figure 6.3). As before (see sections 8.2 and 8.3) the cut-off score used to facilitate the classification of cases into the above groups is 0.500. The original group membership is displayed in table 8.2 above.

**Table 8.18: Discriminant analysis 5: The Wilk's test of functions**

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.669	44.960	38	.203
2	.912	10.283	18	.922

Remember that the Wilk's lambda measures how well each function discriminates among the different groups; the associated chi-square statistic tests the hypothesis that the means of the functions are equal across groups (Hair et al, 1995). A small significance value ( $p < .10$ ) indicates functions that do better than chance at separating the dependent variable groups. Table 8.18 shows that both discriminant functions (estimated by using enter) are not significant; hence, the analysis cannot go any further.

#### 8.4.2 Analysis no 6: Assessing NPI performance in the short- vs. long-term.

This is the last discriminant analysis conducted (see table 8.1) and aims to discriminate between firms using either a short- or a long-term horizon (or both) when evaluating the attainment of their NPI objective. The dependent variable called time orientation consists of three groups:

*Group 1*, called *short-term* includes cases whose weighted score reflects relatively greater emphasis on short-term assessments of NPI performance.

*Group 2*, called *long-term* includes cases whose priority reflects higher focus on long-term assessments of NPI performance.

*Group 3*, called *balanced* includes those cases that place equal emphasis on both time frames when evaluating the NPI objective's attainment (i.e. equal weights correspond to short- and long-term time dimensions employed).

The assignment of cases to the dependent variable groups is based on the time horizons' weighted scores involved in the NPI objective's performance assessment (see again the hierarchy in the AHP (G) map in figure 6.2). Specifically, the time horizons' global priority weights have been *normalised* against the respective NPI objective's global weight for each firm individually. The normalised scores are shown in boxes 11, 12, 17 and 18 in the aggregate matrix (see figure 6.4). Remember that such normalised scores allow comparisons to be made within the context of the NPI objective (e.g. see findings relating to the time orientation used in NPI performance evaluations in section 6.2.4.2). The 0.500 score that is also the cut-off score used to assign cases into the three dependent variable groups represents equal emphasis on both short- and long-term time frames. The original group membership for the time orientation variable was presented earlier (see table 8.2). The enter method used to estimate the discriminant functions, resulted into two non-significant functions (see table 8.19).

**Table 8.19: Discriminant analysis 6: The Wilk's test of functions**

**Wilks' Lambda**

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.703	39.530	38	.401
2	.861	16.782	18	.538

The non-significant statistics shown in table 8.19 suggest that it has not been possible to discriminate between the emphases on short- vs. long-term considerations involved in the performance assessment of the NPI objective. The analysis cannot go any further.

**8.5 The impact of firms' ownership status on the assessment of each export objective's performance.**

In addition to the above, a separate analysis was conducted (exploratorily) by using Kruskal-Wallis one-way ANOVA, in order to determine whether there is any effect of the non-metric variable called ownership status on *each* export objective's performance assessment (at a disaggregate level). Remember that the relationship between the former variable and the assessment of export success was explored earlier at an aggregate level (see section 7.5) but no link was identified there. Export firms' ownership status is a non-metric variable used to draw the profile of the sample and consists of: [1] an independent private company, [2] an independent public liability company, [3] a subsidiary/affiliate company and [4] a division of a multinational firm (see descriptive statistics in section 5.2.3). The former variable was tested earlier (see section 7.5) and no impact was found on the assessment of export success at an aggregate level. Nevertheless, the findings from the rest of the discriminant analyses results presented thus far show that context-specific influences on export performance assessments across objectives (e.g. see section 7.4.2) are not necessarily the same with those found when each export objective's attainment is

assessed separately. Therefore, the Kruskal-Wallis test was used as before (see section 7.5) to undertake 6 comparisons altogether (see table 8.20); each comparison involves three independent groups (see footnotes in table 8.21). The resulting chi-square statistics for all six comparisons made are shown in table 8.20.

**Table 8.20: Kruskal-Wallis test statistics\***

	<i>Export Sales</i>		<i>Export Profit</i>		<i>NPI</i>	
	<i>Own plan vs. Competition</i>	<i>Short-vs. Long-term</i>	<i>Own plan vs. Competition</i>	<i>Short-vs. Long-term</i>	<i>Own plan vs. Competition</i>	<i>Short-vs. Long-term</i>
<i>Ownership Status Chi-square test statistics</i>	1.183 p=.554	5.285 p=.071**	7.341 p=.025***	1.766 p=.413	.450 p=.799	2.316 p=.314

\* 2 degrees of freedom correspond to each three-group mean comparison.

\*\*Significant at the .10 level

\*\*\*Significant at the .05 level

Table 8.20 highlights significant group mean differences in the preference for (i) the time horizons employed in export sales evaluations and (ii) the frame of reference used in export profitability evaluations. The mean ranks relating to (i) and (ii) are shown in table 8.21 below.

**Table 8.21: Mean ranks produced by the Kruskal-Wallis test.**

	<i>Export sales*</i> <i>(short vs. long-term)</i>	N=167	Mean Rank	<i>Export profit**</i> <i>(own plan vs. competition)</i>	N=167	Mean Rank
	<i>Ownership Status</i>	Group 1	54	94.92	Group 1	100
	Group 2	79	80.42	Group 2	26	105.44
	Group 3	34	74.97	Group 3	41	79.28

\* Group 1=emphasis on short-term, Group 2=emphasis on long-term, Group 3=equal emphasis on both.

\*\* Group 1=emphasis on own plan, Group 2=emphasis on competition, Group 3=equal emphasis on both.

With respect to the time frame involved in export sales assessments, the mean rank shows that (i) export firms having a higher ownership status are short-term oriented. In contrast, (ii) low ownership status exporters place equal emphasis on both short- and long-term considerations while (iii) the ownership status of firms that prefer to look into their long-

term export sales is in between. With respect to the frame of reference employed in export profitability assessments the mean ranks clearly show that (iv) higher ownership status firms evaluate their export profitability against export competition. While it could be claimed that the short-term export sales measurement mentioned above, may be due to the reaction of the high ownership status companies "to the perceived attitudes of financial institutions and markets to financial risk and return" (Coates et al, 1992, p. 149), there is actually no evidence to suggest that the same companies also pursue short-term profits (see non-significant statistic in table 8.20) in spite of the capital markets' interest in company profitability.

Recall from section 7.5 that export performance assessments (across objectives) have not been found to vary significantly for firms whose ownership status differs from others. However, the fact that such inter-firm variations have been identified at a disaggregate level (see (i)-(iv) above), suggests that different types of organisations can actually differ in terms of their assessments of success (see also Maltz et al., 2003). Moreover, such differences require attention to the performance evaluation of individual objectives. The findings presented in this chapter are summarised below.

### **8.6 Further analysis using multinomial logistic regression at a disaggregate level.**

In addition to the discriminant analysis undertaken, the multinomial logistic regression technique was employed as before; its role is complementary (see more in section 7.6). The technique accommodates multi-chotomous criterion variables (there are 6 at the disaggregate level) while it does not make any distributional assumptions about the 19 metric predictor variables studied. The fitting information output for the 6 multinomial regression models (at a disaggregate level) is included in Appendix D; the former is in line with the discriminant analysis output presented earlier in this chapter.

More specifically, the existence of a relationship between the set of predictors and each criterion variable is supported for the first 4 models (involving the assessment of the Export Sales and Export Profit objectives). In contrast, the non-significant chi-square (at

the 5% level) for the two models corresponding to the NPI objective's assessment, suggests *no* relationship between the independent and the categorical dependent variables (i.e. the null hypothesis that there is no difference between a model without predictor variables and a model with predictors *cannot* be rejected).

Further inspection of the output shown in Appendix D suggests that all 4 models achieved high classification accuracies (between 63% and 76%) relative to the respective proportional by chance accuracies. The significant likelihood ratio tests along with the parameter estimates (indicating significant relationships between independent and each dependent variable) are also included in Appendix D where all the results are interpreted.

With respect to the export sales objective's assessment none of the hypotheses involving the emphasis on the frame of reference is supported. According to the output of the multinomial logistic regression, there is also no support for the hypotheses referring to the time frames adopted in export sales assessments (i.e. the results are similar to the discriminant analysis results). Yet, the identification of 3 significant relationships linking export and environmental factors to the frames of reference and the time frames, support the hypothesised link between the context and export sales assessments(see Appendix D).

With respect to the performance assessment of the export profit objective, 2 hypotheses involving the frame of reference are supported but (like in discriminant analysis) none of those referring to the time horizons are. For example, it is found that efficiency-oriented firms are more likely to focus on their own plan when assessing export profits; hence H2g is supported (this finding derived from both methods used). In contrast, it was also found (with both methods) that adaptive exporters are likely to place equal emphasis on both short- and long-term profitability (thus, H3h is not supported). Nevertheless, the multinomial logistic regression output points out 5 significant relationships between different contextual factors and preferences for the time frame (see Appendix D), which support the hypothesised influence of the context in the translation of the export profit objective into indicators. All the discriminant analysis results are summarised below.

## 8.7 Summary and comments on the findings.

Having completed the second part of the analysis pertaining to the assessment of export performance at a disaggregate level, it is evident that the hypothesised influence of contextual factors in export performance assessments (see Figure 3.1) is supported. In fact, a variety of factors whose influence was expected to be evident at an aggregate level (when assessing success across different export objectives), are found to influence the performance evaluation of individual objectives. Below follows a summary of the findings presented in this chapter. Starting with the classification results derived from the different discriminant analyses, table 8.22 provides an overview of the resulting models' fit (remember, group discrimination has not been possible for the NPI objective). Although the prediction accuracy varies across the four models, it is actually better than chance (see the difference between each classification ratio and the respective  $C_{MAX}$  shown in table 8.22).

**Table 8.22: Summary of the predictive group membership and the classification ratios for all the discriminant analyses undertaken (using Enter)**

DISCRIMINANT ANALYSES	FRAME OF REFERENCE				
	Predictive group membership (%)			Classification Ratio(%)	Max chance criterion (%) ( $C_{MAX}$ )
	Group (1) Own plan	Group (2) Competition	Group (3) Balanced		
No1. Export Sales	92.4	50	48.1	76.6	63.7
No2. Export Profit	86.3	42.9	60.0	72.6	58.8
No3. NPI	-	-	-	-	-
	TIME FRAME				
	Predictive group membership (%)			Classification Ratio(%)	Max chance criterion (%) ( $C_{MAX}$ )
	Group (1) Short-term	Group (2) Long-term	Group (3) Balanced		
No4. Export Sales	54.8	81.0	45.8	65.3	46.7
No5. Export Profit	59.5	79.7	39.1	65.3	47.5
No6. NPI	-	-	-	-	-

A total of 16 hypotheses have been tested at the disaggregate level of assessment and it is only 4 that found support. All of them related to the selection of the frame of reference

employed in export sales and export profitability assessments. In contrast, none of the 8 hypotheses involving the time horizon was supported.

Specifically, out of the 8 hypothesised relationships involving the frame of reference used to assess *export sales* performance, 2 are supported. In fact, exporters that are risk oriented (H2c) and document their performance (H2h) are more likely to assess their export sales against their own planned sales. With respect to the performance assessment of the *export profit* objective, it is 2 hypotheses that have found support. Efficiency-oriented exporters (H2g) and those documenting their performance (H2h) are likely to emphasise their own export plan.

Nevertheless, different contextual influences (beyond those hypothesized) have been identified as drivers of the export sales and export profitability assessments. The findings are summarised in tables 8.23 and 8.24 below.

**Table 8.23: Contextual antecedents of export sales performance assessments.**

CONTEXTUAL CHARACTERISTICS	EXPORT SALES OBJECTIVE'S PERFORMANCE ASSESSMENT					
	Emphasis on the frames of reference			Emphasis on the time frames		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>	<i>Short-term</i>	<i>Long-term</i>	<i>Equal emphasis</i>
<b>Export-related</b>						
Exp. Destin. Diversity				+		
Export Commitment			+			
<b>Managerial</b>						
Shared Vision						+
Innovativeness						+
Risk Orientation	(H2c) +					
<b>Performance-related</b>						
Effectiveness	+					+
Adaptiveness*	+					+
Performance Document.	(H2h)+					

\* Firms having an average adaptiveness orientation tend to place equal emphasis on both time horizons



**Table 8.24: Contextual antecedents of export profit performance assessments.**

CONTEXTUAL CHARACTERISTICS	EXPORT PROFIT OBJECTIVE'S PERFORMANCE ASSESSMENT					
	Emphasis on the frames of reference			Emphasis on the time frames		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>	<i>Short-term</i>	<i>Long-term</i>	<i>Equal emphasis</i>
<b>Export-related</b>						
Export Commitment			+			
<b>Managerial</b>						
Shared Vision			+			+
Commitment to Learning			+			+
Risk Orientation			+			+
Ex. Market Orientation			+			+
<b>Environment</b>						
Environm. Uncertainty			+			
<b>Performance-related</b>						
Efficiency	(H2g) +					
Effectiveness	+					
Adaptiveness	+					+
Performance Document.	(H2h) +					

With respect to the influence of the context on export performance assessments at a *disaggregate* level, tables 8.23 and 8.24 show there are indeed relationships with most of the different sets of factors included in the conceptual framework (see Figure 3.1). Specifically, management-, export-, environment- and performance-related factors are related to the performance evaluation of the export sales and profit objectives. There are 8 factors with *multiple* influence involving the frame of reference and/or time frame against which export sales and/or export profit objectives are assessed (export commitment, shared vision, risk orientation, commitment to learning, export market orientation, effectiveness, adaptiveness and performance documentation).

According to tables 8.23 and 8.24, the *most frequently* occurring antecedents are performance-related (adaptiveness, effectiveness) and management-related (risk orientation and shared vision). Furthermore, 4 contextual factors have been identified to have a "single impact" (export destination diversity, innovativeness, environmental uncertainty, efficiency). Note also that out of the entire set of contextual factors examined at a disaggregate level, the "best" predictors found (with the stepwise method) are 3

namely, risk orientation, export market orientation and export destination diversity. In contrast, 7 factors (out of the 19 examined) *have not* been found to have any relationship with the assessment of export performance at a disaggregate level (firm's size, annual sales turnover, export experience, export dependence, resource inadequacy, open-mindedness, future-oriented culture); yet, 3 of those (firm's size, annual sales turnover and export dependence) have been found to antecede assessments of export success at an *aggregate* level (see section 7.4.2).

Last, the analysis suggests (see section 8.5) that high ownership status exporters (not private independent firms) prefer to evaluate their export profits against competitors, which contrasts with the domination of the own plan referent found in performance assessments. There are also differences between firms of high and low ownership status in terms of how the export sales' attainment is assessed. The former prefer to assess export sales in the short-term while the latter tend to place equal emphasis on short- and long-term considerations.

Researchers should bear in mind that all the factors highlighted above seem to be the most important determinants of differences among exporters' performance assessments. The findings imply likely inter-firm differences when translating the export objectives into performance measures. In fact the findings suggest that the translation of the export sales and export profit objectives into indicators can be subject to various different contextual determinants. Such differences between firms should not be left unattended when conducting export success comparisons based on export sales and/or export profit indicators. For example, table 8.23 shows that a preference for the *own export sales plan referent* is likely to be associated with *risk-oriented* exporters. In contrast, it was found that *committed exporters* tend to assess their export sales performance against *both* referents. It seems that the less risk averse an export firm is, the greater the emphasis it places on internally oriented export sales indicators (e.g. export sales, export sales growth, export intensity); thus, such indicators could be legitimately used to compare export risk taking firms' sales performance. Given that risk-oriented exporters differ from those that are risk averse in terms of the emphasis the former place on performance

evaluations against their own export plan, it would not be fair to select exclusively internally oriented indicators to undertake export sales performance comparisons when both risk-oriented and risk averse exporters are involved. According to table 8.23, such measures may mark out risk oriented export firms as relatively more successful thereby identifying (rightly or wrongly) risk-taking as a driver of success. Yet, more on the issue of valid inter-firm export success comparisons follows in chapter 9.

Having completed the second part of the analysis, the next chapter discusses the operationalisation of export performance in light of all the empirical findings. In addition to the implications of the findings for the measurement of export performance in the literature, the next chapter also includes the computation of the proposed index of export success and the advantages of this index for cross-firm success comparisons.

## **CHAPTER 9**

### **DISCUSSION AND CONCLUSIONS**

## 9 DISCUSSION AND CONCLUSIONS

Striving to answer *how* export performance should be assessed and *why* do it in a specific way (Diamantopoulos, 1998), this study aspires to offer an integrative framework for the assessment of export success. Following the empirical testing of the proposed framework and subsequent analyses of the data collected, this chapter brings together all the key findings presented in chapters 6, 7 and 8. The chapter discusses the theoretical and implications of the findings for export performance assessments and focuses on the proposed index of export success; also, it discusses the managerial implications of the study and concludes by mentioning the research limitations and outlining directions for further research in the field.

Remember that the operationalisation of export performance has been achieved with the help of the AHP methodology adopted for the modelling of multiple objectives; given a set of export objectives, the resulting AHP output represents the main dependent variable of this study, namely the assessment of export performance (see Figure 3.1). The analysis of the output focused on two levels of assessment (aggregate and disaggregate) offering insights into export performance evaluations undertaken *across* export objectives as well as for *each* export objective, respectively. In line with the research objectives, the empirical findings generate important insights on *how* and *why* the assessment of export performance is approached in practice. The study has empirically determined (i) the relative importance of the export objectives pursued (see research objective 1 in section 1.2), (ii) the relative emphasis on the frames of reference utilised (research objective 2a), (iii) the preference for the time horizons adopted (research objective 2b) and (iv) the contextual drivers (research objective 3) underlying the exporters' relative preferences for short- vs. long-term considerations when performance is assessed against own plan vs. competition and (v) the emphasis placed on different performance dimensions. The empirical findings from export performance assessment practices provide much needed guidance to the operationalisation of export success in the literature (Matthyssens and Pauwels, 1996); they support the proposed conceptual framework for the assessment of export performance and have implications for the conduct of export success comparisons.

### 9.1 Export performance assessments: theoretical implications of the findings.

By shifting the emphasis on the managerial perspective of export success, the study sheds light into the under-researched issue of the multiple export objectives involved in export performance assessments. The discussion begins with empirical findings relating to the relative importance export firms place on a set of different objectives. Remember that the differential emphasis export managers place on the export objectives pursued may lead to different interpretations of success and has to be taken into account when assessing export success in the literature (see section 3.3).

#### *The relative importance of the export objectives pursued (aggregate level).*

According to the AHP mean global priority scores (see figure 6.2), exporters place a *balanced emphasis* on financial (export profitability) and non-financial objectives (export sales and NPI). Specifically, the importance exporters place on their export profitability does *not* differ significantly from that attributed to the achievement of export sales. New product introduction (NPI) seems to be the *most* important (non-financial) export objective followed closely by export profitability. Unlike earlier studies in exporting where the emphasis on the measurement of product-related performance has been low (see Katsikeas et al, 2004), the former results are very much in line with relevant empirical work in the marketing metrics literature; in fact, performance measures such as "Number of new products, Revenue of new products, Margin of new products, Sales, Gross margins, Profitability" (Ambler et al., 2004, p.491) are considered to be of primary importance across businesses. In light of these results, future export performance assessment approaches in the literature should focus on capturing a multidimensional perspective of export success (Styles, 1998; Zou et al, 1998; Shoham, 1998; Sousa, 2004) maintaining a *balance* between financial and non-financial export objectives; such a *balanced perspective* seems to be appreciated by export practitioners (see also Kaplan and Norton, 1992; Neely, 1998; Bourne et al, 2000; Garenzo et al, 2005).

Remember that, for a given export objective the differential emphasis exporters place on alternative frames of reference and time horizons may result in different interpretations of export achievement (see section 3.3). The discussion continues with empirical evidence on the frame of reference and the time frame export managers prefer to adopt when evaluating export achievement (at an aggregate, export firm level); the findings guide researchers to the assessment of export success when multiple objectives are involved.

*The relative emphasis on the frame of reference employed (aggregate level).*

With respect to the frame of reference adopted across a set of objectives (in aggregate), the majority of export firms are found to rely more on their *own export plans* and pay *less* attention to their export competitors' performance. Once again, this result is in line with the findings of a recent study examining the marketing performance metrics UK based companies employ; specifically, it was reported that besides the highly important and regularly assessed accounting based measures, "a third and one half of measures were compared to plan" (Ambler et al., 2004, p.492). The emphasis export managers place on the own plan referent when translating objectives into indicators (evidence of which can be seen throughout the AHP output shown in figure 6.2) reflects a self-centered perspective in performance assessments that "pays little regard to what competitors are doing or what customers believe" (Day and Nendungadi, 1994, p.41). Bearing in mind that the business managers' own performance measurement orientations are reported to include also a competitor-centered perspective (see Day and Nendungadi, 1994), the prevailing preference for the own export plan referent contrasts with suggestions in the business literature urging companies to use competitor than internally oriented referents (e.g. Eccles, 1991). This is certainly not expected from export market oriented firms (see section 5.3.7) particularly when market driven cultures are known to drive higher performance (Day and Nendungadi, 1994; Deshpande and Farley, 2004). Nevertheless, the assessment of export performance in the literature seems to be *in line* with this study's findings; in fact, all the relevant studies have "adopted an internal orientation, while a few considered both internal and competitor-centered measures" (Katsikeas et al, 2000, p.500).

*The relative emphasis on the time frame adopted (aggregate level).*

Unlike findings in an export context where a short-term (static) view of export success prevailed (e.g. Madsen, 1998), the export firms' AHP profiles do not support an emphasis on short-term export performance assessments (e.g. Lages and Lages, 2004). In fact, the results concerning the time frame adopted in such assessments (in aggregate) suggest that exporters on average, pay *less* attention to a static (efficiency) perspective in comparison; instead, firms demonstrate an appreciation for the *dynamic* (non-static) nature of success (Kaplan and Norton, 1992; Brown and Laverick, 1994; Al-Khalifa, and Morgan, 1995; Morgan, et al, 2002). The operationalisation of export performance in the literature *does not seem* to be consistent with export practices because most of the relevant studies assessed current export performance (see Katsikeas et al, 2000).

In light of the fact that the average exporter tends to be interested in its long-term prosperity, this study suggests that researchers' future operationalisations of success need to also reflect the export managers' interest in the *long-term* evaluation of export achievement when translating a set of export objectives into indicators. Failing to do so would encourage the proliferation of legitimate concerns in the export literature regarding the extent of agreement between academics' and practitioners' assessments of export success (Matthyssens and Pauwels, 1996). The discussion now continues by examining the relevant findings at the *disaggregate* level of assessment.

*The assessment of each export objective's performance (disaggregate level).*

The findings at the disaggregate level of the AHP output involve the *frames of reference* and *time horizons* export managers prefer to emphasise when assessing the attainment of the export sales, export profit and NPI objectives and have implications for the translation of *each* of the former export objectives into performance indicators.



Export sales-based indicators are the most widely used measures in export performance related studies the majority of which, placed higher emphasis on an internally oriented frame of reference (see Katsikeas et al, 2000; Sousa, 2004). This is in line with this study's findings. To be specific, the analysis into a disaggregate level pointed out the fact that exporters prefer to evaluate the achievement of their export sales objectives using their *own* export sales plan (across both time horizons) as well as a *long-term* horizon across both referents (own plan and competition). Exporters also concentrate on a *long-term* horizon when assessing their export sales performance against competition while there is *no* significant difference between the emphases placed on short- and long-term considerations when export sales is evaluated against export firms' own plan. By implication, researchers may use measures such as export sales volume, export sales ratio or export sales growth that have been used extensively in the literature (see Katsikeas et al, 2000). Also it seems that using measures such as export market share growth (as opposed to market share) is consistent with the findings pointing to a long-term horizon when assessing export sales against competition.

Similarly, the majority of export decision makers places more emphasis on their *own* export profit plans (across time horizons) as opposed to export competitors' financial performance. Moreover exporters are found to place more importance on their *long-term* export profitability (across both frames of reference). Export profitability evaluations against competition also reflect an emphasis on a *long-term* horizon while there is no evidence to support a preference for short- vs. long-term considerations when the former objective is assessed against export firms' own plan. While managerial practices seem to have endorsed criticism made in the business literature against the exclusive use of short-term (accounting-based) measures that capture past strategies' financial performance only (Day and Wensley, 1988; Otley, 1994; Itner and Larker, 1998a), the majority of studies used measures that do not reflect attention to both own plan and a long-term horizon (e.g. measures such as export profit growth or export profit ratio growth). In fact, out of 40 empirical studies using export profit-related indicators, only 8 (20%) adopted a long-term perspective when evaluating profitability against own plan (see Katsikeas et al., 2000).

Consequently, the literature is less likely to reflect exporters' views of financial success when studying the determinants of such success.

Although product-related indicators have rarely been used in the export literature, the empirical results suggest that the former are indeed "justified on the grounds that the product and its performance are key to any export marketing strategy" (Katsikeas et al, 2000, p.498). In addition to relevant findings on export sales- and export profitability evaluations (at the disaggregate level), the analysis highlighted the *own plan* as the dominant referent in NPI performance evaluations (both in the short- and long-term). A *long-term* horizon also emerged as the dominant time frame in NPI assessments against either referent. By implication, the translation of the NPI objective into indicators should reflect new products' long-term success relative to firms' plan (as opposed to short-term new product-related performance relative to competition).

Taken together, the findings (at the disaggregate level) are in line with those, at an aggregate (export firm) level; the implication is that researchers' translation of the export sales, export profit and NPI objectives into measures should better reflect an emphasis on an internal referent (i.e. own export plan) and a dynamic (as opposed to static) evaluation (i.e. a long-term focus). However, additional findings from export practice (see below) suggest that it is *not* easy to end up with *one* set of metrics that applies across all firms.

#### *Inter-firm variations in export performance assessments and the influence of the context.*

This part of the discussion focuses on differences among export firms' performance assessments and the implications for the operationalisation of export success in the literature. The AHP approach used for modelling multiple objectives led to the identification of considerable *variations* among exporters' performance measurement practices. Such variations are evident in the weighted importance attributed to (a) the set of the export objectives pursued, (b) the alternative frames of reference and (c) the time frames adopted when assessing export success in *aggregate* (at an export firm level). Moreover, the firms' AHP profiles suggest that inter-firm variations are manifested in the

emphasis placed on the set of the alternative frames of reference and time frames underlying the evaluation of *each* export objective assessed (at a *disaggregate* level). These findings confirm the subjective nature of success (Ambler and Kokkinaki, 1997) and support the recommendation that capturing success when multiple objectives are involved, requires a scheme that accommodates different approaches to the evaluation of export achievement (see section 3.3).

The implications of the foregoing cross-firm differences for the assessment of export performance and the conduct of export success comparisons are better understood by taking also into account the influence of the context. Remember that this study has documented the interaction between assessments of export success and the broader environment thereby helping researchers understand the influence of (specific) contextual factors in export performance assessments (when multiple export objectives are pursued). Such relationships with contextual factors have been identified in aggregate (across objectives) and at a disaggregate level of assessment (for *each* objective separately). An important point is that the contextual antecedents found at an aggregate level *differ* in terms of both number and content from those found at a disaggregate level. The identification of such factors at a disaggregate level of assessment explains *why* the performance evaluation of *specific* objectives (in this case, export sales and export profit) can vary across export firms. The following discussion focuses on the implications of these findings for the assessment of export performance and the conduct of cross-firm success comparisons while all the contextual drivers identified at a disaggregate level can be seen in sections 8.6 and 8.7 (see summary tables 8.23 and 8.24).

Remember that the first part of the analysis focused on assessments of export success across objectives and resulted in few drivers only (see section 7.4.2); these are export- and company-specific factors (export dependence, firm's size and annual sales turnover). Relationships with the above three factors *have not* been identified when the analysis focused on a lower (disaggregate) level of the AHP hierarchy. What was found instead in chapter 8 is a *variety* of management-, export-, environment- and performance-related drivers discriminating between exporters in terms of the performance referents and/or the

time horizons adopted when translating individual objectives into measures. The various contextual relationships identified at a disaggregate level imply that export success comparisons undertaken at the export *firm level* (across multiple objectives) are likely to *hide* the fact that firms may differ in terms of the performance assessment of individual objectives. By implication, measurement schemes striving to capture export success need first to pay attention to how *each* objective's performance is assessed and take into account any inter-firm differences identified at a disaggregate level (before undertaking performance comparisons). This would contribute to the conduct of *valid* (meaningful) success comparisons between export firms. An example can be seen below (see section 9.2, table 9.1).

Apparently, inter-firm differences in (i) the relative importance of the export objectives pursued and (ii) the translation of objectives into measures have been inadequately captured by the conventional export performance operationalisations in the literature (see review by Katsikeas et al, 2000). To illustrate this point take the NPI objective the global priority of which, indicates its importance for exporters (see figure 6.2). It seems that earlier export research work treated new product introduction as the least important objective in comparison to export sales and export profitability. According to Katsikeas' et al, (2000) review, most of the earlier export performance-related studies focused on the conventional export sales-based measures while product-related measures have been almost ignored. It is also the case that some empirical support has been provided for the selection of internally oriented export indicators used extensively in export research; yet, the notable variation in the exporters' preferences for the performance referents employed, suggests that an over-emphasis on such indicators often exhibited in the export literature may be misguided. Moreover, the majority of the studies in exporting adopted a static assessment of current performance that is not in line with what the average exporter seems to favor. Thus, fears expressed in the literature that academics may differ from practitioners in terms of the measurement approach utilised (Otley, 1994; Matthyssens and Pauwels, 1996) are not unfounded.

Clearly, the fact that performance assessments in export practice exhibit differences such as those manifested throughout the AHP output contrasts with an export research context where "in most cases measurement is arbitrary rather than scientifically based and there is a tendency to employ measures used by other researchers regardless of their applicability to the specific research design" (Katsikeas et al 2000, p.505). The fact that earlier attempts to compare export firms' success in the literature have not been taken into account the aforementioned inter-firm variations casts, doubt on the validity of such attempts particularly when the "overwhelming majority of studies adopted the corporate unit of analysis to assess export performance, focusing on a corporation's total exports" (Katsikeas et al., 2000, p.500). Indeed, the resulting AHP profiles suggest that export success comparisons on any indicator should at least allow for the differential importance exporters are found to place on the set of objectives pursued. Bearing in mind that the conduct of valid success comparisons is an essential requirement for studying the determinants of export success (Aaby and Slater, 1989; Mathyssens and Pauwels, 1996; Styles, 1998; Diamantopoulos, 1999), this study raises "questions about the validity of existing knowledge concerning the drivers of firm-level performance in export markets" (Katsikeas et al, 2000, p.505).

The empirical findings provide support to this thesis' aspiration to offer a more flexible operationalisation of export performance that accounts for inter-firm variations in the relative importance of the objectives pursued and subsequently, their translation into performance indicators (see also Morgan et al, 2002). In short, the findings support the proposed framework aiming to accommodate for the "individuality" of export firms' performance assessments and help researchers identify the successful exporters across multiple objectives (Madsen, 1987; Styles, 1998).

Operationally, this is achieved by incorporating (i) the weighted importance export managers place on different objectives (see weights in figure 6.2) and (ii) the managerial interpretations of export achievement. Subsequently, export success comparisons can be undertaken in aggregate (at an export firm level) using a composite measure (index) of success that accommodates for any set of (differentially weighted) objectives (see the

conceptual model in section 3.3). The next section focuses on computing the index and demonstrating how it enables the conduct of valid success comparisons among firms.

## **9.2 Computing and applying the Export Performance Index.**

The discussion begins with an example that is going to illustrate why the proposed measurement scheme suggests a better approach towards meaningful performance comparisons as opposed to using any given export measure. The example uses empirical data involving two export firms (A and B) selected from the sample, which are compared in terms of their sales performance using the export sales turnover indicator (£ million). Firm A actually achieved a £2.4 million turnover that incidentally is much lower than the sample mean (see table 9.3 below); in contrast, Firm B has the highest reported export sales turnover in the sample (i.e. £658.6 million). A conventional export performance comparison based on the former sales measure would lead one to pronounce Firm B as more successful than A.

Yet, it is possible to examine whether this conclusion is actually a valid one. In view of the fact that the attainment of any export objective can be assessed differently across firms, remember that the proposed conceptualization allows one to trace the assumptions (the frame of reference and time horizon) underlying any export objective's performance assessment (see PM matrix in section 3.3); these are subsequently linked to managerial interpretations of (satisfaction or not with) the particular export objective's attainment (see SF matrix in section 3.3).

Table 9.1 below clearly demonstrates how each exporter (A and B) evaluates the attainment of the export sales objective. Specifically, table 9.1 includes the global priorities derived with the AHP for both firms A and B thereby reflecting the mode of assessment (the relative emphases placed on the frame of reference and time frame) both firms adopt when translating their export sales objective into performance indicators. Clearly, that there is a difference between the two firms A and B in terms of the frame of reference/time frame combination employed.

**Table 9.1: Comparing two firms on their export sales performance assessment**

		<i>Export Sales Objective</i>			
		<i>Firm A</i>		<i>Firm B</i>	
<i>Time frame</i>	<i>Frame of reference</i>		<i>Frame of reference</i>		
	<i>Own plan</i>	<i>Competition</i>	<i>Own plan</i>	<i>Competition</i>	
<i>Short-term</i>	G=.507	G=.008	G=.017	G=.250	
<i>Long-term</i>	G=.250	G=.068	G=.500	G=.050	

With respect to Firm A, the export sales objective's attainment is assessed in the short-term against own export plan (e.g. focusing on export sales turnover). In contrast, Firm's B performance evaluation of the export sales objective reflects a long-term focus against own plan (e.g. using export sales growth).

In light of the global priorities summarized in table 9.1, it is evident that using say, the export sales growth indicator as a measure of export sales success makes much more sense for Firm B (which focuses on its long-term performance vis-à-vis own plan) rather than Firm A. In contrast, comparing both firms in terms of say, their export sales turnover (£ million) makes more sense for Firm A (which emphasizes short-term performance vis-à-vis own plan) but fails to recognise the fact that the mode of assessment practiced by Firm B favors a different indicator (i.e. the export sales growth). Moreover, the conclusion reached above (i.e. Firm B performs better than A) does not seem to be meaningful in practice because it does not reflect the export managers' interpretation of the export sales objective's attainment. Specifically, the managerial satisfaction for Firm's B sales performance is lower in comparison (see table 9.2) despite the fact that this firm has the highest turnover across the sample used. In contrast, the satisfaction with Firm's A export sales performance is reported to be high (i.e. 6 in a 7-point scale).

In short, it makes little sense to uncritically compare the export performance of these (or any other) firms on any given indicator. Such comparison could not be claimed to be

valid unless the assumptions underlying the use of a particular indicator are equally applicable to all firms concerned. In light of the inter-firm variations that could be found in the assessment of an export objective (see table 9.1), a better approach to adopt is the proposed composite measure (index).

While the index can accommodate for any set of export objectives firms may pursue, the following example includes a single export objective only (export sales) in order to aid the ensuing presentation. The example uses data from the same firms (Firm A and B) mentioned above.

Export performance was defined earlier (see section 3.3) as follows:

$$P = \sum_{i=1}^n (I_i \times S_i)$$

where:

P = overall export performance

$I_i$  = importance attached to objective  $i$  ( $i = 1, \dots, n$ )

$S_i$  = management's reported satisfaction with the attainment of objective  $i$  (as determined by the frame of reference utilized and the time frame involved – that is, by the application of the PM matrix shown in figure 3.3, in section 3.3).

According to the above formula the interpretation of achievement for the export sales objective is determined by both the relative importance a firm places on this particular objective and the management's satisfaction from the objective's attainment (see SF matrix, in figure 3.4 in section 3.3.). Thus,

$$\text{Export performance} = S \times I$$

where:

S = satisfaction with the export sales objective's attainment (see descriptive statistics in section 5.5.3) and

I = the export sales objective's (G) priority score (see figure 6.2).



**Table 9.2: The export sales performance index computed for two export firms**

<i>Export sales objective</i>	<i>Firm A</i>	<i>Firm B</i>
<i>Satisfaction</i>	6	4
<i>Relative importance</i>	.751	.333
<i>ESP index</i>	4.5	1.33

Note that the above index reflects export sales performance (only) and is called ESP. This is to distinguish it from the composite measure capturing the attainment of three export objectives (see EP index below). Table 9.2 includes the ESP indices computed for both Firms A and B.

With respect to Firm A, table 9.2 shows high managerial satisfaction with the achievement of the export sales objective, the weighted importance of which is high too. Unlike Firm A, both the export sales objective's relative importance for Firm B and the respective satisfaction with the export sales objective's performance are lower. Consequently, the performance comparison between the two ESP indices computed above suggests that *Firm A* is more successful than Firm B. Indeed the former firm exhibits the highest ESP score across the sample of exporters used in this study indicating outstanding export sales performance (see maximum score in table 9.3). In contrast, Firm B's ESP score reflects below than average success with the export sales objective (see mean score in table 9.3). Having marked out Firm A as a better performer in comparison, the proposed scheme emphasises how important it is for the "correct" interpretation of export success to incorporate the managerial perspective when conducting export success comparisons.

*Computing the Index for the entire sample of export firms*

In contrast, it was also shown that researchers should not rely upon any arbitrarily selected metric (such as the export sales turnover used above) that is "imposed" on export firms (Matthyssens and Pauwels, 1996; Katsikeas et al, 2000) in order to compare them

and then pronounce one firm more successful than another (which incidentally used to be common practice according to Leonidou et al, 2002). It was actually shown that using any export indicator without attention to the mode of assessment underlying the particular objective assessed may compromise the validity of inter-firm export success comparisons and fail to point out successfully performing exporters; in fact, researchers might be misled to “interpret” or regard successful exporters (such as Firm A above) as under-achievers. Bearing in mind that the majority of studies researched the determinants of export success using quantitative large-scale surveys, the implications of such “misinterpretation” for the study of export success are certainly not negligent.

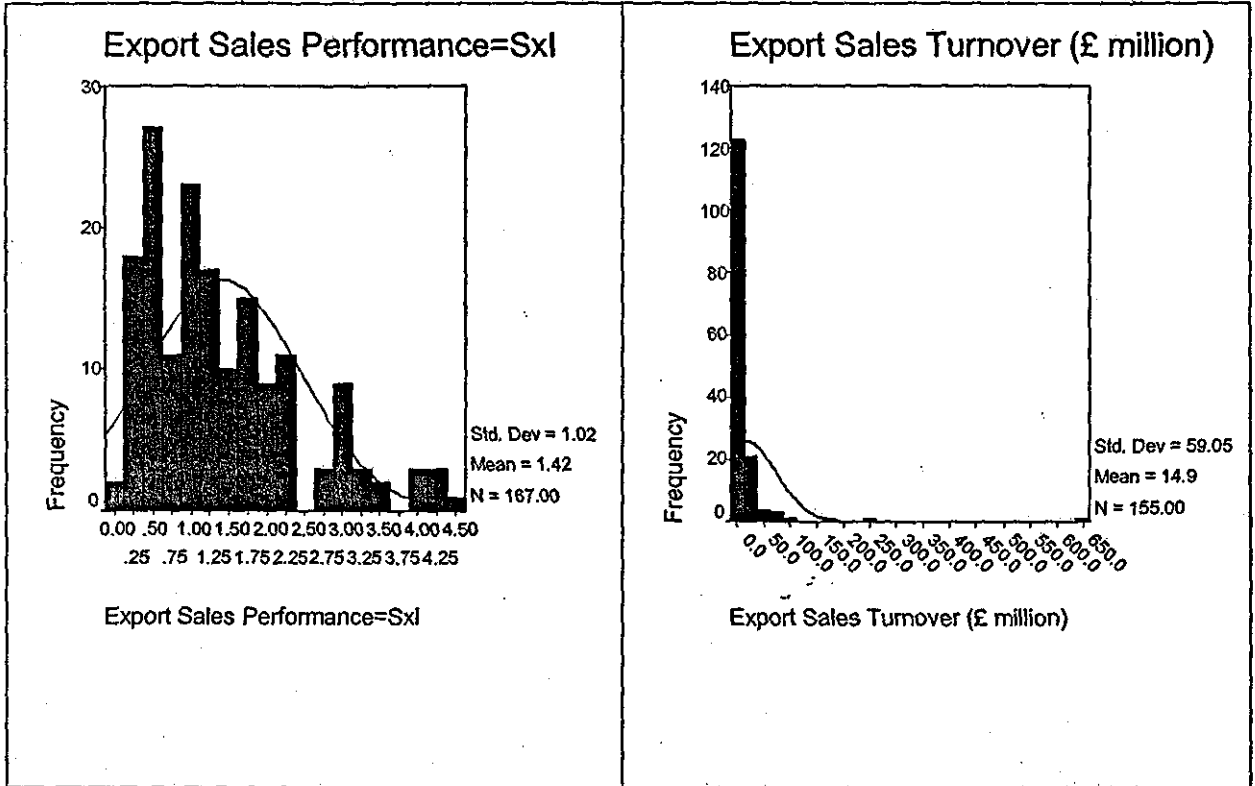
To illustrate the value of the proposed index in terms of facilitating meaningful comparisons in a research context studying the drivers of export success, the export sales objective is used once again as an example. Export sales performance is now measured across the sample by using both the index and the export sales turnover (£ million). The descriptive statistics are shown in the following table 9.3 and the respective distributions in figure 9.1.

**Table 9.3: Descriptive statistics for the ESP index and the export sales turnover.**

Export Sales Performance Index			Export Sales Turnover (£ million)		
N	Valid	167	N	Valid	155
	Missing	4		Missing	16
Mean		1.4193	Mean		14.91030
Median		1.2760	Median		2.40000
Std. Deviation		1.01778	Std. Deviation		59.053742
Minimum		.06	Minimum		.009
Maximum		4.51	Maximum		658.600

Having examined the relevant frequencies, a cumulative 60.5% of exporters do not exceed the mean of the ESP index (the mean value=1.42 while minimum=0.06 and maximum=4.51). This percentage is not consistent with a cumulative 85% of firms whose export sales turnover is below the mean level achieved (£14.9 million).

Figure 9.1: Histograms depicting the measurement of export sales performance.



The 2-tailed t-test indicates significant mean difference between the index and the export sales turnover ( $t=-2.85$ ,  $p=.005$ , 2-tailed). If the mean value is set as the cut-off level of achievement between the less and more successful exporters, grouping firms according to their export sales turnover would have led to misinterpretations of export success and the “misplacement” of 24.5% of export firms to the less successful group when (according to the ESP index) these firms should not have been placed there. Such misplacement may well affect the research findings on the drivers of export success thereby undermining the validity of the knowledge gained. One could only imagine the implications when *multiple* export objectives are involved. In any case, it cannot be automatically assumed that the validity of such comparisons would be warranted.

In light of the above, it could be claimed that performance operationalisations that do not allow for differences among exporters' assessments of success (Zou and Stan, 1998; Katsikeas et al, 2000; Clark, 2000; Morgan et al, 2002; Ambler et al, 2004) are unlikely to contribute to the generation of the "correct" insights into the drivers of export success.

### **9.3 Computing the Export Performance Index for multiple objectives.**

Following the application of the proposed export performance index to a *single* export objective, the emphasis now shifts to a set of *multiple* objectives (namely, export sales, export profit and NPI) studied. The same formula is used (as above) and the computation of the index is explained in detail. This is actually the export performance (EP) index representing the composite outcome of three export objectives. It was computed for each export firm by taking into account (i) the manager's reported satisfaction with each objective's attainment (see section 5.5.3) and (ii) the relative importance placed on each of the three objectives (see global weights in the AHP map in figure 6.2). Specifically:

$$\text{Export Performance} = [(Satisfaction\ with\ export\ sales\ performance) \times (Export\ sales'\ importance) + (Satisfaction\ with\ export\ profit\ performance) \times (Export\ profit\ objective's\ importance) + (Satisfaction\ with\ the\ NPI's\ performance) \times (NPI\ objective's\ importance)]$$

Using two export firms as an example (see Firms A and B mentioned above), tables 9.4 and 9.5 illustrate how the respective EP indices capturing the attainment of the set of the three export objectives are computed.

**Table 9.4: The EP index computed for Firm A**

<i>Firm A</i>	<i>Export sales</i>	<i>Export profit</i>	<i>NPI</i>	<i>EP index</i>
<i>Satisfaction</i>	6	5	4	5.707
<i>Relative importance</i>	.751	.205	.044	

**Table 9.5: The EP index computed for Firm B**

<i>Firm B</i>	<i>Export sales</i>	<i>Export profit</i>	<i>NPI</i>	<i>EP index</i>
<i>Satisfaction</i>	4	2	4	3.33
<i>Relative importance</i>	.333	.333	.333	

Remember that this measurement scheme can be applied to any number of export objectives a firm may pursue. The proposed composite performance measure (index) reflects the position of each firm on different "objective" performance indicators used to capture the attainment of a set of objectives. This is because the index is partly determined by the export manager's subjective evaluation of (satisfaction with) each objective's attainment; satisfaction in turn, is determined by the actual attainment level, the relative emphasis placed on the time frame (static vs. dynamic considerations) and the frame of reference (absolute vs. relative performance) adopted by the manager concerned (see equation (1) in section 3.3). Remember also, that the managerial perspective is subsequently translated with the help of the AHP into an importance weight and then incorporated into the index of export performance (see tables 9.4 and 9.5) thereby allowing for export practices to be taken into account in interpretations of export success.

With respect to Firm A in particular, table 9.4 indicates that the export sales objective attracts the highest importance score and managerial satisfaction score in comparison. Unlike Firm A, the three objectives are of equal importance for Firm B (see table 9.5);

also, the respective managerial interpretations for the export sales and NPI objectives' attainment are equally higher than that corresponding to export profit. According to the performance comparison between the EP indices produced (see tables 9.4 and 9.5) Firm A is found (once again) to be more successful than Firm B.

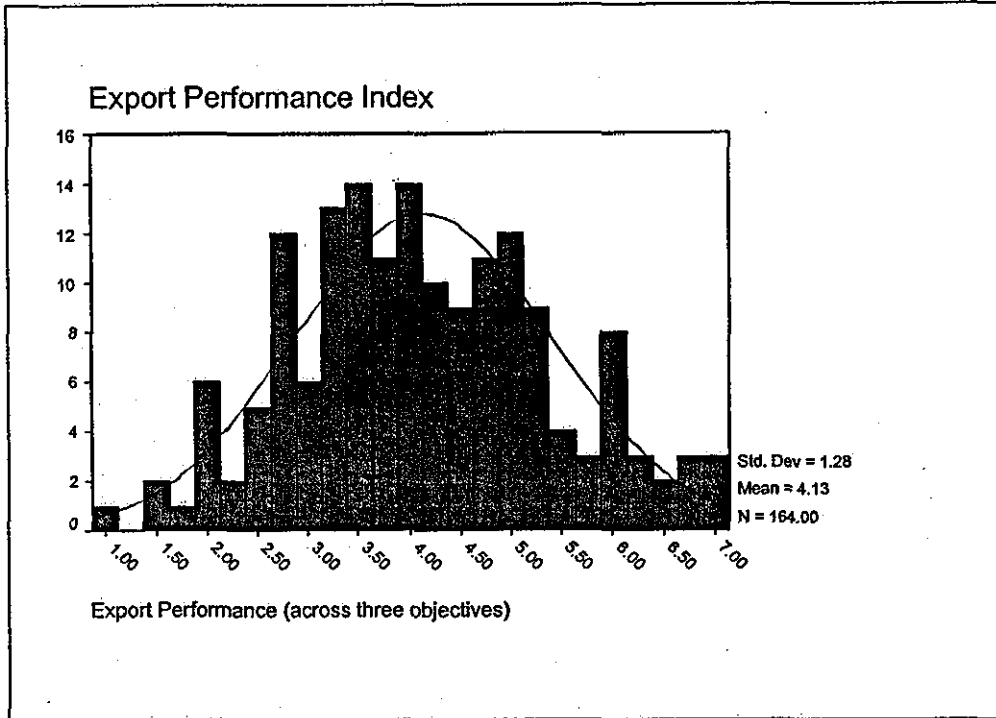
Table 9.6 describes statistically the composite measure (EP index) computed for the entire sample of export firms studied and provides a picture of the degree of export success achieved across the set of export objectives.

**Table 9.6: Descriptive statistics for the export performance (EP) index.**

Export Performance Index		
N	Valid	164
	Missing	7
Mean		4.1301
Median		3.9980
Std. Deviation		1.27787
Minimum		1.00
Maximum		7.00

Between a minimum value of 1 and a maximum of 7, about 47% of firms exceed the mean level of export performance (4.13). The export performance variable is *normally* distributed across the sample of firms (K-S  $z=.660$ ,  $p=.777$ , 2-tailed). The EP index (capturing export success across three objectives) is displayed graphically in figure 9.2.

**Figure 9.2: Histogram depicting the export performance index across the sample.**



For validation purposes, the proposed export performance measure (index) was tested in terms of the extent to which it reflects excellent business performance. To do so, the EXCEL scale has been used. Remember that that the EXCEL scale was culled from the literature but found to lack uni-dimensionality in the context of this study (it was mentioned in section 5.6.1 that the items of the scale refer to heterogeneous aspects of business excellence).

The scale was subsequently split into two measures. The first measure of excellence refers to people/values and the second measure captures excellence in terms of products/customers. Table 9.7 shows that the proposed export performance measure (index) is significantly correlated with the former but not with the latter scale.

**Table 9.7: Correlations between the EP Index and the EXCEL scales**

Correlations			
		EXCEL (People/Val)	EXCEL (Prod/Cu stom)
Export Performance Index	Pearson Correlation	.213**	.068
	Sig. (2-tailed)	.006	.388
	N	162	162

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The output shown above is not surprising. In fact, these correlations should be treated with caution (they should not be relied upon) because the EXCEL measure seems to be problematic in terms of capturing excellence in the context of exporting.

Unlike other composite measures suggested in the export literature (e.g. see Cavusgil and Zou, 1994; Zou et al., 1998; Styles, 1998; Shoham, 1998; Lages and Lages, 2004), this measure of export success acknowledges that different firms may compete against multiple and different objectives that may assume differential importance. The proposed definition of export success is flexible enough to accommodate for *any* kind and number of short- and long-term, financial and non-financial objectives export firms may pursue. Moreover, the formative measurement perspective adopted overcomes problems pertaining to the presence of performance *trade-offs* among objectives (Diamantopoulos, 1999). It was also illustrated earlier (see table 9.1), how important it is for the correct interpretation of export success and the conduct of export performance comparisons to incorporate the managerial point of view regarding the attainment of export objectives. This composite measure reflects each firm's *individual* approach to export performance assessments; as a result, the index suggested here enables the conduct of *valid* export success comparisons between firms pursuing any given set of export objectives.



In light of the above, it is hoped that the proposed composite performance measure of export success will be of great help to studies researching the drivers of export success. The adoption of this measure in different country contexts implies a more systematic approach to export performance assessments that would facilitate research into the determinants of export performance. For example, this measure could be used for inter-firm export success comparisons aiming to identify factors that have cross-cultural significance for success. Findings in different countries would certainly benefit theory advancement in the field (Styles, 1998) thereby contributing to sound export strategy planning in international markets (see also directions for further research in section 9.6).

#### **9.4 Inter-relationships among performance dimensions and their implications.**

Having completed the discussion about the proposed composite measure of export success, this section focuses on findings relating to the three performance orientations namely, efficiency, effectiveness, adaptiveness (see Figure 3.1), their inter-relationship and its implications. The latter include the three-dimensional conceptualisation of performance used extensively in the literature and the formative measurement approach adopted in this study.

In this context (and before discussing the findings on the trade-offs found among the three dimensions), it is worth highlighting the fact that unlike previous export related studies where adaptiveness was treated as the least important dimension in comparison (Katsikeas et al, 2000), the multivariate analysis undertaken pointed out the former performance orientation as playing a key role in assessments of export success. It is evident that aiming for adaptiveness has multiple influence in terms of the selection of the frame of reference and time horizon utilized in export sales and export profit performance evaluations (see tables 8.23 and 8.24 in section 8.6). The exporters' interest in being adaptive coincides with findings reporting company interest in measuring new product related performance (see Ambler et al., 2004) and preparation for the future (see Maltz et al., 2003).

However, researchers interested in studying export success should bear in mind that export firms do not tend to be exclusively oriented towards a particular performance dimension. In fact, the majority of the exporters consider *all three* dimensions to be *important* for their firm. This is clearly shown in table 9.8; this includes the positive inter-correlations found.

**Table 9.8: Spearman's rho correlations among performance dimensions**

	Effectiveness	Adaptiveness
Efficiency	.471**	.327**
Effectiveness		.358**

\*\*Significant at the .01 level (2-tailed).

The multivariate analysis has not provided evidence that the emphasis on any particular performance dimension implies necessarily a distinctly different approach to defining export achievement. Instead, the findings show that effectiveness and adaptiveness are linked to more or less similar measurement practices as far as the performance assessments of the export sales and export profit objectives are concerned (see table 9.8). Indicatively, note that export firms focusing on effectiveness and/or adaptiveness do not differ in terms of the frame of reference employed; these firms also monitor *both* the short- and long-term attainment of their export sales. The efficiency-, effectiveness- and adaptiveness-oriented exporters use the same referent (i.e. own plan) in their export profit evaluations. In light of these results, it seems unlikely that the three dimensions used extensively in the literature (e.g. Katsikeas et al, 2000; Morgan et al, 2002) could help the interpretation and understanding of export success in practice (see more below).

The results derived bivariately provide further evidence about the relationship between export measures and the associated performance orientations. These results suggest that pursuing different performance orientations does not necessarily imply the presence of conflicts in practice. To be more specific, the correlations among the dependent variables included in the last (4<sup>th</sup>) disaggregate level of the AHP hierarchy (see correlations in table 7.3 in section 7.1.1) indicate significant *positive* relationships between different

performance assessment modes (frame of reference/time frame combinations) exporters may employ to measure the attainment of any export objective. These results reinforce the notion of complementarities among the performance dimensions underlying the performance assessment of individual export objectives. Thus, regardless of arguments in the inter-disciplinary literature claiming that efficiency, effectiveness and adaptiveness are supposed to exhibit trade-offs and may not converge over time (Ostroff and Schmitt, 1993; Bhargava et al., 1994), the foregoing results imply that exporters' marketing strategies should be able to succeed in *more* than one dimension simultaneously.

In addition to the foregoing complementarities, it is evident that there are also conflicting relations among the efficiency, effectiveness and adaptiveness dimensions. The bivariate results are actually in line with the notion of *trade-off* interactions among the associated performance dimensions advocated in the export literature (e.g. Al-Khalifa and Morgan, 1995). Specifically, conflicts are observed among the different modes of assessment depicted at the last disaggregate (4<sup>th</sup>) level of the AHP output (see figure 6.2). In fact, the analysis indicated various significant *negative* relationships among the modes of performance assessment corresponding to *different* export objectives (see correlations table 7.2 in section 7.1.1); for instance, short-term (efficiency-oriented) export profitability assessments (e.g. captured by ROI) are found to be negatively related with long-term export sales assessments against competition (e.g. captured by market share growth), which reflects an emphasis on effectiveness.

In light of such evidence, one may conclude that *both* trade-offs *and* complementarities among performance dimensions may exist concurrently within a firm. Two points are deduced from these findings. First, although the three performance dimensions are considered to be collectively exhaustive, export practices suggest that they are not necessarily mutually exclusive. Hence, it does not seem valid to explain export success in a manner that distinguishes among firms pursuing *distinctly* different performance orientations nor interpret an export firm's achievement along *any single* performance orientation out of those included in the three-dimensional performance conceptualization;

in other words, the findings question how relevant/useful is the former conceptualisation to the understanding of export success in the literature (see criticism in section 2.3.2).

Second, despite that the relationship among the existing performance dimensions is positive (see table 9.8 above), this relationship is not perfect. By implication, the notion of performance trade-offs (e.g. see negative correlations in table 7.2 in section 7.1.1) is still very *relevant* and has to be *acknowledged* in operationalisations of export performance. In light of the presence of extensive trade-off interactions among the different modes of assessment (see 4<sup>th</sup> level of the AHP output) export managers may employ to evaluate the attainment of their firms' export objective(s) "no measure is sufficient to provide a reliable assessment of export performance. Random fluctuations in a specific measure can make decision making that is based on that measure highly suspect...it is preferable to use multiple items and multiple subdimensions to operationalise export performance" (Shoham, 1998, pp.73-74). Obviously, such trade-offs do not support earlier approaches to measuring export performance on a single indicator (see review by Gemünden, 1991).

Moreover, the conflicting relationships found suggest that the adoption of a reflective measurement perspective (e.g. see Zou et al, 1998) is "neither inherently superior nor necessarily the most appropriate model. A formative approach to constructing multi-item measures (i.e. indices) is also potentially [if not more] attractive for modeling complex constructs such as export performance" (Diamantopoulos, 1999, p.454). Indeed the empirical results support the formative measurement methodology this study employs which -unlike previous research- allows for explicit modelling of any complementarities and trade-offs between the multiple objectives a firm may have set.

## 9.5 Managerial implications

This study provides export management with an innovative performance measurement model that suggests a systematic approach to the assessment of export success. The proposed model maintains a broad multidimensional perspective of export success (Zou

et al., 1998); it is hoped to contribute to sound export decision-making thereby facilitating the allocation of company resources and driving further a firm's international development (Madsen, 1998). The approach suggested in this study offers several advantages. In light of the fact that firms are often characterized by a poor alignment between strategy and performance measurement (Garenzo, et al, 2005), this model helps export managers achieve an *alignment* between strategic objectives and performance assessments (Keegan et al, 1989; Kaplan and Norton, 1996). Such an alignment is an essential requirement in business practice because it helps monitor the implementation of company objectives thereby contributing to their attainment (Lynch and Cross, 1991; Garenzo et al, 2005). Specifically, the framework helps export decision makers *translate* export objectives to indicators by accommodating for the relative preference a decision maker places on alternative frames of reference and time horizons underlying any export objective's assessment. This is particularly important when considering that management "may have difficulty determining which specific measures are critical to their firm, and which measures will influence managers to do the right thing" (Maltz, et al., 2003, p.188). To be more specific, the proposed export performance measurement framework acknowledges that firms may pursue multiple, different short- and long-term export objectives and also that firms can evaluate the attainment of their objectives using different modes of assessment (as described by the frame of reference and time horizon involved). In other words, this framework is flexible enough to accommodate for *any* number and kind of export objectives a firm may have set and also comprehensive in terms of *linking* objectives to alternative modes of assessment (depending on how the exporter prefers to evaluate their attainment). The *alignment* between export objectives and performance assessments is achieved by employing the AHP method that offers an attractive solution for modeling export performance assessments. The AHP is sufficiently versatile to incorporate any number of objectives as well as the *managerial* judgments relating to each individual objective's assessment. In this respect this framework allows a manager to maintain the "individuality" of his/her firm when assessing export success.

Moreover, this export performance assessment framework overcomes limitations of earlier multi-dimensional frameworks (e.g. Keegan, et al, 1989; Kaplan and Norton,

1992; Zou et al, 1998; Lages and Lages, 2004) that have not accounted for the fact that export firms' strategies may vary in terms of the relative importance assigned to different objectives. The AHP method enables managers to determine the *weighted* importance of their firms' multiple objectives; by doing so, this framework gives exporters *a sense of direction* by focusing management efforts on the achievement of those important export objectives that firms could not afford to under-perform.

A unique feature of the AHP method is also the option offered to export decision makers to identify and address any *inconsistencies* involving the link between the objectives pursued and the mode of assessment utilised. For example, although an export firm may operate in a competitive export market and understandably, be overly concerned with its competitors, the firm's management may still measure the firm's performance in terms of short-term export profits as opposed to paying particular attention to changes in export market share. The approach proposed in this study highlights such inconsistencies with the help of EC2000 (the AHP's computerised version) and enables export management to pinpoint any misalignments (or biased judgments), make informed decisions about established measurement practices and take corrective action if needed.

Furthermore, the framework takes into consideration the fact that all-three performance dimensions may co-exist within an export firm's strategy and consequently, there can be *both* conflicts and complementarities in the attainment of a firm's objectives. In light of the fact that actions taken to improve one measure may lead to declines in other measures (Matthysens and Pauwels, 1996; Ittner and Larker, 1998b), the proposed approach to export performance assessments adopts a formative definition of export success (Styles, 1998; Diamantopoulos, 1999). By doing so, it overcomes problems inherent in earlier work such as the presence of performance *trade-offs* among objectives (Filippini et al, 1998; Garenzo et al, 2005) and allows export practitioners to aggregate the attainment of their firms' objectives into a composite measure (index) of export success. The index is particularly useful when conflicting objectives are pursued. In addition, the proposed measurement approach allows export managers to trace the contribution of each export objective's performance to the overall index of success. Export management would also

be able to use the index to assess the impact of different export strategy elements on *each* of the objectives of the firm. Moreover, the index could help management *compare* the success of different export marketing strategies (over time), even if different and/or differentially important objectives are pursued. By implication, the proposed framework would be able to assist export practitioners in terms of export marketing strategy planning. The latter outcome seems to be in line with the need for businesses to identify new innovative methods of measuring marketing performance and the recent increasing interest in marketing accountability (e.g. Sheth and Sisodia, 1995; Herremans and Ryans, 1995; Clark, 1999; Marketing Science Institute, 2000; Ambler, 2000; Ambler et al, 2004; Lehmann, 2004). Finally, the implementation of this export performance assessment model in an organizational context would be able to facilitate the provision of accurate feedback on the relative success of export marketing strategies thereby contributing to organisational learning, a driver of a firm's long-term prosperity (Katsikeas et al, 2000; Calantone et al, 2002).

#### **9.6 Limitations of the study and directions for further research.**

This study viewed export success as a multi-dimensional and dynamic, on-going concept represented by various stages; this is evident in the framework shown in figure 3.2 (called the PD/PC matrix). The proposed theoretical conceptualization reflects a process-oriented approach to the assessment of export performance acknowledging different performance stages (namely, sources of advantage, positional advantages, market and financial performance outcomes) endorsed by the RBV theory (see also Morgan et al, 2002; 2004). While there is some evidence in the export literature about key resources and capabilities exporters utilise to gain competitive advantage (see Kaleka, 2002; Morgan et al, 2004), there is a need to develop relevant performance indicators to capture particular sources of advantage. This is also the case about the emphasis exporters place on the four different performance stages mentioned above and the time span between these stages (see figure 3.2). Given that the literature urges for a dynamic (as opposed to static) assessment of export success (e.g. Matthyssens and Pauwels, 1996), further research needs to examine if and how export managers assess performance in terms of sources of advantage and

identify relevant measures employed in order to populate the PD/PC matrix. In light of the attention exporters seem to pay to their long-term prosperity, such research may result in metrics that are “indicative of investing in and building long-term resources, facilities and infrastructure, as needed to adapt to the fast pace of today’s changing environments” (Maltz, et al., 2003, p.199).

With respect to the export objectives examined, this study used a set of three objectives only and showed that their relative importance may vary considerably between exporters. However, it has not provided evidence on *what* are the objectives exporters pursue in practice (nor ranked them in terms of average importance). This limitation involves both the actual number and content of the export objectives pursued. The implication here pertains to the AHP methodology and the satisfaction of the *homogeneity* axiom in particular. The axiom suggests that the elements of a hierarchy (in this case, the export objectives) have to be comparable (homogeneous) so as reciprocal comparisons to be meaningful (see section 4.6.1). In other words the axiom assumes that all the export firms studied pursue the particular set of objectives against which they are assessed. In light of the fact that export firms’ strategies may also aim for other objectives, future studies should first address the former question (namely, which objectives exporters pursue in practice) before constructing the hierarchy and “feeding” the AHP with the data required to compute the weighted importance of export objectives and subsequently the index of export success.

An additional methodological limitation relating to the set of the export objectives (and also the set of referents) used in the construction of the hierarchy, involves the suggestion that a hierarchy should to be complete in terms of the elements compared (see section 4.6.1). Although the export performance measure this study proposes is flexible enough to accommodate for any set of financial and non-financial objectives assessed against any frame of reference/time frame combination, it is actually the case that the hierarchy constructed for the purpose of this study is limited in terms of the number of objectives (criteria at the 2<sup>nd</sup> level) and also the frames of reference employed (sub-criteria at the 3<sup>rd</sup> level). Remember, this is only to facilitate the application of the AHP in an export



context (i.e. the reciprocal comparisons involved). Indeed, the intention of this study has been to be *illustrative* (rather than exhaustive) in terms of how the proposed composite measure works. The implication however is that the relative (weighted) importance placed on the export sales, export profit and NPI objectives may well change if more export objectives are added in the hierarchy. For instance, some firms could be found to place higher priority on say, customer satisfaction rather than NPI. Thus, "the ranking of alternatives determined by the AHP may be altered by the addition of another alternative for consideration" (Dyer, 1990, p.252). While adding one (or more) element(s) in the hierarchy constructed may introduce greater variation to the AHP output, it may also cause rank reversal as far as the relative importance of objectives is concerned (see more about rank reversal in Saaty, 1990; Dyer, 1990; Harker and Vargas, 1990). This is also the case for the frames of reference used as explained below.

The proposed framework is also limited into two referents only (own export plan and competition). Despite that the export sales intensity measure (implying comparisons against sales in the domestic market) is the most popular indicator in export research (i.e. about 60% of the studies reviewed by Katsikeas et al, 2000 have used this measure), this study has not included the domestic market as a performance referent. The reason is that adding one more referent would have required the construction of a larger AHP decision making tree, the size of which would not have facilitated the purpose of this study). For the same reason, the study has not employed a customer-oriented frame of reference either (e.g. Day and Nedungadi, 1994; Ambler et al, 2004). The latter seems to be particularly appropriate to use in light of the emphasis firms place on product-related issues (namely, NPI performance), which implies a customer-orientation (Leonidou et al, 2002). A customer-oriented referent would also help gauge the exporters' attention to the needs of their markets particularly when "[c]ustomers are the dominant players in the market environment" (Day and Nedungadi, 1994, p.41); in such context export management may not track "the competition to any great degree, but instead rely on their customers to tell them how they compare with competitive offerings" (Day and Nedungadi, 1994, p.41). Future studies are encouraged to include both customer and domestic market referents along with the own export plan and competition referents used

in this study, so as to enrich the findings on the frames of reference exporters prefer to focus on when translating export objectives into measures. Yet, bear in mind that any additional elements in the decision making process require a new hierarchy with new evaluations or preferences; this is because "the presence or absence of an alternative in relative measurement introduces additional information regarding the dominance of that alternative with respect to the other alternatives (Saaty, 1990, p. 264). Therefore, the weighted emphasis an exporter places on any particular performance referent(s) such as own plan and competition may change. By implication the importance weights of the objectives used to compute a firm's index of success are unlikely to remain the same, too.

The issue of minimum requirements concludes the methodological limitations of the AHP in relation to the export objectives studied. The AHP methodology assumes that the computation of importance weights is based on a complete hierarchy where management expectations are set (i.e. management preferences will not change); failing to fulfill this assumption suggests that the decision reached is incomplete (Vargas, 1990). While this is a reasonable assumption to make, it may not always apply in practice. Management may set minimum requirements (performance targets) for the attainment of any objective "that act as constraints on any subsequent trade-off" (Davies, 2001, p.885). The relative ease with which such requirements (targets) can be met may reverse the objectives' weighted importance (Partovi, 1994; Davies, 2001). This is better explained by an example. A firm's export management may decide to focus on its long-term export sales performance and assess it based on a three-year period plan. Having attained the minimum export sales target (e.g. £700,000) earlier than expected (say, within the first 12 months), export management may decide to pay more attention to the NPI objective and elevate its importance to a higher level in comparison to export sales. In contrast, if the firm had attained only £50,000 in export sales within the first 12 months, management may have had decided to place an even greater emphasis on the export sales objective and intensify its efforts in order to boost export sales. Despite that the relative importance export management assigns to any objective could be subject to adjustments depending on the actual performance level attained, the AHP assumes no such changes in the managerial judgments relating to the AHP alternatives compared. This limitation could have an

impact on an export firm's index of success (i.e. by affecting the computation of the weighted emphasis placed on the firm's multiple export objectives).

There are also issues of validity that currently limit the application of the proposed formative scale. Bear in mind that this study developed and tested an intentionally broad framework that aims to resolve the problematic assessment of export success when multiple, differentially important and conflicting export objectives are evaluated. In light of a lack of relevant empirical evidence in the export literature, the formative definition of success used here is by no means exhaustive in terms of the set of indicators forming the index. Recall once again, that the choice of the particular set of export objectives used in this study reflects the intention to illustrate how the formative composite scale (export success index) works. To enable a more complete definition of the latent variable (export success) the key question namely, which (if any) objectives should be added to those already employed, is still open to further research. The identification of such a set of indicators the linear sum of which will determine export success should be then followed by the evaluation of the scale's external validity; the latter can be undertaken by using established guidelines in the literature (Diamantopoulos, 1999). In this respect note that internal consistency reliability and construct validity procedures used in reflective multi-item scale development do not make sense in formative measurement (Bagozzi, 1994). In fact a different approach is required (a detailed discussion on this issue can be seen in Diamantopoulos and Winklhofer, 2001).

Moreover, the formative scale of export success lacks *cross-validation* that needs to be undertaken in a new set of data. In light of the fact that the proposed export performance assessment framework has been empirically tested in a sample of UK-based exporters the majority of which are industrial goods manufacturers (see section 5.9), the formative measure needs replication in different samples. Indeed, to advance theory in export marketing, any approach to the conceptualization and measurement of export performance has to be adopted across national settings particularly where cross-cultural differences among export firms may exist (Cavusgil and Zou, 1994; Styles, 1998). The cross-cultural testing of the proposed export performance assessment framework would

also help establish the index (the most flexible measure so far in the export literature) in more than one country. As mentioned above, a measure deriving from a formative (rather than reflective) definition of export performance does not require scale refinement and validation in terms of internal consistency and uni-dimensionality across research contexts (Diamantopoulos and Winklhofer, 2001). The testing of the framework in different country-contexts would also help generate knowledge about the relationship between contextual factors and export performance assessments as explained below.

Before discussing this issue, three more limitations need to be mentioned here. The first has to do with the empirical part and is mentioned now in order to complete this study's methodological limitations. Remember that the study was unable to assess non-response bias due to the nature of the on-line survey carried out. This limitation was already discussed in chapter 4 (methodology) and more details can be seen in sections 4.7.4 and 4.5.5. The second and third limitations pertain to the analysis undertaken. Although a number of influential contextual factors have been identified at both disaggregate and aggregate levels of analysis (see sections 7.7 and 8.7), this study is limited in terms of (a) satisfying the multivariate normality assumption (see more on this issue in section 7.6) and (b) the issue of the power of the multivariate tests employed. Regarding the latter, bear in mind that "sample size has a direct and sizable impact on power" (Hair et al., 1998, p.17). Also the (non-metric) dependent variable groups formed for the purpose of undertaking multiple discriminant (and multinomial regression) vary in terms of size; some are smaller than others (see chapters 7 and 8). It is likely that the use of a more powerful technique such as multiple regression would have increased the probability of detecting the existence of significant relationships (i.e. power) between contextual factors and the (metric) dependent export performance-related variables (if such relationships existed). However, recall that the distributions of most of these metric dependent variables (see descriptive analysis of the AHP output in chapter 5) suggest that the use of multiple regression would have resulted in a violation of the normality assumption throughout this study, compromising (potentially) the results (Kleinbaum et al., 1988).

Despite that this research adopted a broad perspective in terms of the different groups of contextual factors likely to influence export performance assessments (see Figure 3.1), the number of drivers identified at an aggregate level is limited. Future research is encouraged to look for more contextual determinants beyond those examined. Having identified various relationships between the context and the performance assessment of individual export objectives, this study has actually established a strong basis for further research towards this direction (i.e. the contextual determinants of export performance assessments). Studying factors such as home country regulation (accounting standards), export market regulation, export managers' level of education and/or sector-specific trends may help explain existing variations in the relative importance exporters place on the export objectives pursued, and the relative preferences for the referents and the time frames utilized when translating export objectives into measures. For example, the emphasis on competition may differ between sectors (Ambler et al, 2004). Research in different country-contexts would help understand such differences in the assessment of export performance and guide measure selection in cross-country research. For example, the time considerations involved in the assessment of any export objective's performance may be subject to country-specific influences that reflect "the unique emphasis different countries place on exporting" (Zou et al., 1998, p.38). In this respect, it has been claimed that Danish export managers' perceptions of export success tend to favor short-term, financial results implying higher emphasis on efficiency (Madsen, 1998). Yet, Danish exporters "may have different performance priorities than Australian export firms, who are trading with countries that are quite different (culturally, legally, etc.)...Australian firms may be more willing to delay immediate rewards and concentrate more on longer-term strategic considerations as they engage in a more extensive learning process" (Styles, 1998, p.19). Investigating how export success is assessed by firms belonging to the same and/or different sectors across countries would help identify measures that are important worldwide so as to be used to assess and compare success internationally.

To be more specific, future research should determine the influence of the context on the selection of particular measures used in export practice. Note that this study has neither developed hypotheses nor examined the relationship between antecedent variables and

the different modes of assessment (frame of reference/time frame combinations) firms may use to evaluate the attainment of their export objectives. In fact it was beyond this study's research objectives (see section 1.2) to test hypothesised relationships between the contextual antecedents, the frame of reference *and* the time horizon used to evaluate the attainment of each of the three objectives assessed. As the study is partial in this respect, the question about the link between the context and the selection of the export measures used in practice remains to be addressed. In other words, emphasis should be placed on the disaggregate level of assessment (see the 4<sup>th</sup> level of the AHP output shown in figure 6.2) so as to explain what drives the selection of export performance measures. This is likely to be assisted by relevant work in the marketing metrics literature aiming to identify sets of key metrics (e.g. Clark, 1999; Ambler, 2000; Ambler et al, 2004). International marketing researchers could use the proposed measure to (i) investigate nation-specific export performance assessment practices as well as (ii) compare findings on similarities and differences among such practices across national settings. Such research may contribute to the development of a typology of export performance metrics. Thus, depending on the prevailing contextual factors, researchers would be able to place emphasis on specific sets of export metrics reflecting export performance assessment practices adopted in a particular (or different) country-context(s). These sets of objective performance metrics could then be used in conjunction with the index to compare the success of export firms' marketing strategies and study the drivers of strategy success. Such an approach would be in line with suggestions for the adoption of a contingency perspective in the assessment of export performance (Katsikeas et al, 2000).

Also remember that the analysis examined the relationship between performance dimensions, (i) the frames of reference and (ii) the time frames *separately*. Future research needs to look into the relationship between the three dimensions (efficiency, effectiveness, adaptiveness) and the alternative modes (the frame of reference/time frame combinations) used to assess the attainment of an export objective (see 4<sup>th</sup> level of the AHP output in figure 6.2). Depending on the emphasis placed on the different performance dimensions, exporters are likely to emphasise alternative modes of assessment (frame of reference/time frame combinations) for any export objective. This

is likely to explain preference for particular performance measures. Moreover, further research is needed to explore "the nature and significance of trade-off interactions" (Morgan et al., 2002, p. 372) and their impact on the export performance assessments in practice. Such research should investigate how inter-relationships between performance dimensions are reflected on the different modes of assessment used in export practice. Relevant empirical evidence is likely to help researchers understand any conflicts and complementarities among the indicators exporters employ. The possible benefit would be to avoid conflicting findings when studying the drivers of export success (Zou and Stan, 1998; Katsikeas et al., 2000).

It is also necessary to acknowledge the possibility that the subjective nature of self-reported data may introduce bias (Skarmas et al, 2002) to the export performance index influencing the validity of export success comparisons between firms. Specifically, the subjectivity of the importance assigned on any set of export objectives and subsequently the managerial satisfaction reported for each export objective's attainment, imply the possibility of bias. Indeed, research surveys that rely on self-reported data could be biased due to any desirable responses provided (King and Bruner, 2000). In fact, social desirability bias (SDB) can be introduced to the data when responses reflect a the respondents' wish to maintain their own self-esteem and/or manage the impressions others will form of them (e.g. see Booth-Kewley et al, 1992; Fisher, 1993; Churchill, 1999). Anonymity may help reduce such bias (King and Bruner, 2000). The web-based version of the questionnaire (the "least personal" and also the most favored mode of response in this study) ensured anonymity via distancing the researcher from the respondent (on-line self-completed questionnaire rather than administered). Furthermore, anonymity was promised for the other two options of response available (e-mail attachment and mail). However, there is no conclusive evidence in the literature regarding the relationship between "less personal" data collection methods (such as computer-administered questionnaires) and SDB when compared to the conventional paper and pencil modes of response (see Lautenschlager and Flaherty, 1990; Booth-Kewley et al, 1992). Considering that the questionnaire included some performance-related questions that might be perceived as somewhat sensitive due to their strategic

importance (i.e. the relative weight of company objectives and the managerial satisfaction with their attainment) and thus subject to SDB (e.g. see Arnold et al, 1985), note that this study is limited in terms of examining SDB in export managers' responses. Other measures that might be subject to SDB are those capturing contextual determinants such as a firm's innovativeness and/or forward looking culture. Further research in this area should examine the possibility of SDB in export performance assessments. The literature suggests different methods to cope with SDB and ensure valid measurements, one of which is to use scales constructed particularly for that purpose namely, to determine whether respondents are prone to provide SD responses (see also Fisher, 1993; King and Bruner, 2000).

Future research also needs to investigate the role of contextual factors in export managers' subjective interpretations of attainment (satisfaction with export sales, export profit and NPI objectives) in order to identify the introduction of any bias to the data. For instance, an export firm's ownership status might be one factor that influences export managers' satisfaction with the attainment export sales, export profit and NPI objectives. The analysis actually showed that high ownership status exporters (not privately owned firms) are likely to assess export profitability against their export competitors' financial performance (see section 8.5). If export competition is performing highly, then it may well be the case that high ownership status exporters underestimate their export achievements and report moderate satisfaction with export profitability in comparison to firms emphasising their own export plan referent. The latter firms may overestimate their performance by reporting relatively higher satisfaction with their export profits. As a result, cross-firm export performance comparisons might be biased against the export achievement of high ownership status exporters. Failing to take into account the influence of contextual factors (such as a firm's ownership status) on the export managers' self-reported satisfaction with the objectives' attainment, may introduce bias to the composite measure (index) of export success the computation of which, incorporates managerial interpretations of attainment (i.e. satisfaction) for each objective pursued. Looking into the link between the context and management satisfaction would contribute to the validity of cross-firm export success comparisons and the conclusions derived from them.



A contextual antecedent whose impact on export performance assessments needs to be researched further is the external environment. Unlike other factors, the influence of the environment on export performance assessments was unexpectedly found to be non-existent at an aggregate level (see section 7.4.2) and almost negligent at a disaggregate level (see findings in section 8.6). This may also be due to the particular 9-item measure of environmental uncertainty employed, which focuses on the volatility/unpredictability of the export markets only (see more sections 4.5.3.5 and 5.4.1). In addition, future research studies should look into the influence of different aspects of the external (and the domestic) environment (e.g. structure of competition, market demand) on the relative importance of the objectives pursued and the emphasis exporters place on alternative performance referents and time horizons. Research into contextual factors surrounding export performance assessments should also focus on the export market orientation's impact on the translation of export objectives into indicators. Remember that market oriented exporters have not been found to place greater emphasis on the competition referent; this may be due to the particular scale employed (see sections 4.5.3.4 and 5.3.7), which places more emphasis on customers as opposed to competitors. The suggestion is to use a different measure than the 10-item summary scale of market orientation used in this study (see Deshpande and Farley, 1996). Further research into the relationship between contextual factors and the translation of export objectives into measures would certainly shed more light into export practitioners' assessments of success.

The chapter concludes with a further research direction involving the composite measure of export success suggested in this study. The former would also be useful for studying the determinants of export success longitudinally. Given a set of export objectives, remember that the proposed approach enables one to trace the contribution of each export objective's performance to the overall index of export success (i.e. this is due to the latter being expressed as the sum of a linear combination). Future research should be able to use the proposed measure to evaluate (over time) the impact of different determinants on the performance of each export objective pursued. For example, government assistance programs may be found to push short-term export sales but have negative long-term

effects on export profitability (Shoham, 1998). Further research into this direction should also look into the link between past export performance and future performance. Bear in mind that the former was reported to have an immediate impact on strategic decisions and influence future export performance (see Lages, 2000; Lages and Lages, 2004). Researchers could utilise the index to examine the relationship between current export success and future export performance, which may help understand the aftermath of export firms' success. To be more specific, based on any given set of export objectives and a standardized index of export success, the index would allow one to establish longitudinally how current success in export operations may influence changes in (i) the relative importance of export objectives and (ii) the managerial satisfaction with the attainment of these objectives (over time). A relevant example here involves the NPI objective. This study found that innovativeness is negatively correlated with an emphasis on NPI and positively correlated with an emphasis on export profitability (see table 7.1). Having invested and succeeded in their NPI initiatives, it makes sense for innovative firms to alter their priorities and emphasise objectives such as export profitability that also require managerial attention (i.e. so as to amortize their new product investment costs or capitalize on their new product success). Assuming that an export firm has been consistently achieving NPI success over a number of years, the utility function of the NPI objective and the extent of managerial fulfillment (satisfaction) derived from the NPI objective's attainment may diminish over time. The manager may decide to set higher targets in order to maintain/increase the extent of satisfaction with the NPI's attainment and perform better in comparison. Alternatively, the manager may decide to place less importance on the former export objective, show complacency, relax his/her efforts and eventually under-achieve. In light of the above scenarios, the proposed measure could aid longitudinal research into how current export success may affect the two factors in the future (see (i)-(ii) above). By implication, it would be possible to generate knowledge about the potential "perils of excellence" (see Miller, 1994) in an export context. Such research would also establish which of the two factors (see (i)-(ii) above) comprising the proposed formula is more influential in terms of determining export success (over time).

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## APPENDICES



## **APPENDIX A**

### **The questionnaire used in the on-line survey**

**APPENDIX A1:**  
**Word format version**



- Short-term EXPORT PROFITS relative to long-term export profits
- Short-term NEW PRODUCT INTRODUCTION relative to long-term new product introduction

5. When comparing your export performance against your main EXPORT COMPETITOR(S), what is the RELATIVE importance of short- versus long-term considerations?

- |  | Much less important      |                          |                          |                          | Equally important        |                          |                          | Much more important      |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - Short-term EXPORT SALES relative to long-term export sales                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Short-term EXPORT PROFITS relative to long-term export profits                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Short-term NEW PRODUCT INTRODUCTION relative to long-term new product introduction | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. Overall, how SATISFIED are you with the attainment of your firm's export objectives?

- |                            | Not at all satisfied     |                          |                          |                          | Very satisfied           |                          |                          |
|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - Export Sales             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Export Profitability     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - New Product Introduction | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. Below is a list of statements referring to your firm's EXPORT MARKET ENVIRONMENT. Please indicate the extent to which you agree with each statement.

- |  | Strongly disagree        |                          |                          |                          | Strongly agree           |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - It is a slowly changing environment                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - It is a stable environment                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - It is a certain environment                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - It is easy to monitor trends                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Export sales forecasts are quite accurate                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - It is a predictable environment                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - It is a complex environment                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - There is sufficient information for export marketing decisions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - The environment is full of surprises                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |







**14. Below is a list of statements relating to a firm's EXPORT MARKET ORIENTATION that may apply to your firm. Please indicate the extent to which you agree with each statement.**

	Strongly disagree					Strongly agree	
- Our export objectives are primarily driven by customer satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We constantly monitor our level of commitment and orientation to serving export customer needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We freely communicate information about our successful and unsuccessful competitor experiences across all business functions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Our strategy for competitive advantage is based on our understanding of export customers' needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We measure export customer satisfaction systematically and frequently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We have routine or regular measures of customer service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We are more customer focused than our export competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We believe this business exists primarily to serve customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- We poll end-users at least once a year to assess the quality of our products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Data on export customer satisfaction are disseminated at all levels in this business unit on a regular basis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**15. Which of the following statements best describes your company? (Please tick ONE box only)**

- Exporting is part of our global strategy which includes other forms of international involvement (i.e. joint ventures, licensing)
- Our firm is an experienced exporter and exports to several markets
- Our firm exports experimentally to few markets
- Our firm only responds to unsolicited orders from abroad

**16. Which of the following best describes your firm? (Please tick ONE box only)**

- An independent private company
- An independent public liability company
- A subsidiary/ affiliate company
- A division of a multinational firm
- Other (Please Specify)

**17. How long has your firm been exporting? (Please state in Years)**





**APPENDIX A2:**  
**Web-based version**



**Instant E-mail Surveys**  
with **Surveypro.com**

"SETTING AND MONITORING EXPORT OBJECTIVES: A STUDY OF UK FIRMS" Researcher: Nikos Kakkos BSc MSc, Business School, Loughborough University, Ashby Road, Leics, LE11 3TU  
Tel:01509-223239 E-mail:n.kakkos@lboro.ac.uk

- Questions marked with \* require a Valid Response

**In your firm, what is the RELATIVE importance placed on the following EXPORT OBJECTIVES?**

	Much less important			Equally important			Much more important		
*- Export sales relative to export profits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*- Export sales relative to new product introduction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*- Export profits relative to new product introduction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**When evaluating the attainment of your export objectives what is the RELATIVE emphasis placed on the following assessments?**

	Much less emphasis			Equal emphasis			Much greater emphasis		
*- SALES PERFORMANCE against own plan versus sales performance against main export competitor(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*- PROFIT PERFORMANCE against own plan versus profit performance against main export competitor(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*- RATE OF NEW PRODUCT INTRODUCTION against own plan versus that of main export competitor(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**When assessing the attainment of your export objectives what is the TIME HORIZON you normally use? (Please state in MONTHS)**

\*Short-term

\*Long-term

When assessing your export performance against your **OWN PLAN**, what is the **RELATIVE** importance of short- versus long-term considerations?

	Much less important		Equally important		Much more important
*- Short-term EXPORT SALES relative to long-term export sales	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
*- Short-term EXPORT PROFITS relative to long-term export profits	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
*- Short-term NEW PRODUCT INTRODUCTION relative to long-term new product introduction	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>

When comparing your export performance against your main **EXPORT COMPETITOR (S)**, what is the **RELATIVE** importance of short- versus long-term considerations?

	Much less important		Equally important		Much more important
*- Short-term EXPORT SALES relative to long-term export sales	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
*- Short-term EXPORT PROFITS relative to long-term export profits	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
*- Short-term NEW PRODUCT INTRODUCTION relative to long-term new product introduction	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>

Overall, how **SATISFIED** are you with the attainment of your firm's export objectives?

	Not at all satisfied		Very satisfied
- Export Sales	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- Export Profitability	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- New Product Introduction	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>

Below is a list of statements referring to your firm's **EXPORT MARKET ENVIRONMENT**. Please indicate the extent to which you agree with each statement.

	Strongly disagree		Strongly agree
- It is a slowly changing environment	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- It is a stable environment	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- It is a certain environment	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- It is easy to monitor trends	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- Export sales forecasts are quite accurate	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>
- It is a predictable environment	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>

- |  |                       |                       |                       |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| - It is a complex environment                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - There is sufficient information for export marketing decisions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - The environment is full of surprises                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Below is a list of statements relating to an ORGANISATION'S CULTURE that may describe your firm. Please indicate the extent to which you agree with each statement.

- |   | Strongly disagree     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree        |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| - There is a commonality of purpose in our company  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - There is agreement on our organisational vision across all levels, functions and divisions  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Employees are committed to the goals of our company   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Employees view themselves as partners in charting the direction of the company  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - In our firm all employees are receptive to ideas for change   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - In our firm we keep up with ideas for technological advances  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm is receptive to change   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm's top management creates an atmosphere that encourages creativity and innovativeness   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - We are not afraid to reflect critically on the shared assumptions we make about our customers   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Personnel in our firm realise that the very way they perceive the market place must be continually questioned   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - In our firm we rarely collectively question our biases about the way we interpret customer information  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our management provides enough incentives to work on new ideas despite the uncertainty of their outcomes  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - If you fail in the process of creating something new, our management encourages you to keep trying. Initial failures don't reflect on your competence | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Top management in our firm believe that higher financial risks are worth taking for higher rewards  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Top managers here encourage the development of innovative marketing strategies knowing well that some will fail                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Top managers in our firm like to "play it safe"   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- Our top management like to implement plans only if they are certain that they will work

Below is a list of statements relating to an organisation's VISION and LEARNING that may describe your firm. Please indicate the extent to which you agree with each statement.

	Strongly disagree							Strongly agree
- Our firm values highly the ability to plan ahead	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our management is constantly planning for the future of the company	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- People here are encouraged to take a long term view of their career with the company	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Managers agree that our firm's ability to learn is the key to our competitive advantage	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- The basic values of our firm include learning as key to improvement	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- The sense around here is that employee learning is an investment not an expense	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Learning in our organisation is seen as necessary to guarantee organisational survival	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below is a list of statements relating to COMPANY PRACTICES and PRINCIPLES that may apply to your firm. Please indicate the extent to which you agree with each statement.

	Strongly disagree							Strongly agree
- Our firm has a small staff that delegates authority efficiently	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm's top level management believes that its people are of the utmost importance to the company	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm instills a value system in all its employees	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm provides personalised attention to all its customers	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm's values are the driving force behind its operation	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm is flexible and quick to respond to problems	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm concentrates in product areas where it has a high level of skill and expertise	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our firm has a small but efficient management team	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our company develops products that are natural extensions of its product line	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- Our firm truly believes in its people
- Our firm considers after-sales service just as important as making the sale
- Our firm believes in experimenting with new products and ideas
- Our firm believes that listening to what consumers have to say is a good skill to have
- Our firm is flexible with employees but administers discipline when necessary

Please indicate the **IMPORTANCE OF EXPORTING** in your firm using the scale below.

- |  | Strongly disagree     |  |                       |                       |                       |                       | Strongly agree        |
|--|-----------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| - In our firm, export operations are carefully planned   | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm's management is committed to exporting  | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm commits substantial resources to exporting  | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm's export expansion is limited by the time and effort that senior management can devote to exporting | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Human resources limit our firm's ability to increase export activities                                       | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| - Our firm lacks the financial resources needed to expand our export efforts                                   | <input type="radio"/> |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

In evaluating your firm's **EXPORT SUCCESS** what importance do you place on the following?

- |  | No importance whatsoever |  |                       |                       |                       |                       | Great importance      |
|--|--------------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| *- The achieved output goals (e.g. shareholder value, profitability) relative to the inputs used to achieve them (e.g. time, cost, manpower) | <input type="radio"/>    |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| *- The achieved output goals (e.g. customer satisfaction, export sales) relative to expectations (as reflected in export plans)              | <input type="radio"/>    |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| *- The firm's ability to adapt to the changing demands of the environment (e.g. new export market entry, new product introduction)           | <input type="radio"/>    |  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Below is a list of statements relating to the **DOCUMENTATION** of export performance. Please use the scale provided to describe the situation in your firm.

	Strongly disagree				Strongly agree
- Documents exist to measure our firm's export performance after activities are complete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our export performance can be adequately assessed using existing documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Documents exist to assess our firm's export performance on most of our activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Information about how our firm's export performance will be evaluated has been communicated to personnel involved in export operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below is a list of statements relating to a firm's **EXPORT MARKET ORIENTATION** that may apply to your firm. Please indicate the extent to which you agree with each statement.

	Strongly disagree				Strongly agree
- Our export objectives are primarily driven by customer satisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We constantly monitor our level of commitment and orientation to serving export customer needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We freely communicate information about our successful and unsuccessful competitor experiences across all business functions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Our strategy for competitive advantage is based on our understanding of export customers' needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We measure export customer satisfaction systematically and frequently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We have routine or regular measures of customer service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We are more customer focused than our export competitors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We believe this business exists primarily to serve customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- We poll end-users at least once a year to assess the quality of our products and services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Data on export customer satisfaction are disseminated at all levels in this business unit on a regular basis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following statements best describes your company? (Please tick one box only)



- Exporting is part of our global strategy which includes other forms of international involvement (i.e. joint ventures, licensing)
- Our firm is an experienced exporter and exports to several markets
- Our firm exports experimentally to few markets
- Our firm only responds to unsolicited orders from abroad

- How long has your firm been exporting? (Please state in Years)

- To how many countries does your company export? (Please state number of countries)

- Approximately what percentage (%) of your total sales is derived from exports?

Which of the following best describes your firm? (Please tick one box only)

- An independent private company
- An independent public liability company
- A subsidiary/ affiliate company
- A division of a multinational firm
- Other (Please Specify)

What are the main products produced by your firm? (Please tick all that apply)

- Consumer goods
- Industrial goods
- Services
- Other (Please Specify)

- How many people are currently employed by your firm?

Full time (please state number)

Part time (please state number)

- In which year was your firm established?

- What is your company's total annual sales turnover (£)?

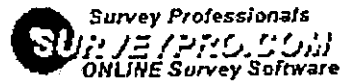
- Please state your position or title:

Could you please indicate how difficult it was for you to answer this questionnaire?

	Very little						A lot
- Effort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Thought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THANK YOU VERY MUCH FOR YOUR CO-OPERATION

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## **APPENDIX B**

### **E-mail messages acting as cover letters to the survey**

## Appendix B1:

### E-mail messages used in the Pre-test and Method 1

## **Appendix B1: Pre-test and Method (1) of the survey**

### **1<sup>st</sup> contact stage: Sample of e-mail message acting as cover letter to the survey**

Dear Sir/Madam,

I am currently a research student at Loughborough University and conducting my PhD in the area of export marketing. As part of my research, I need to contact export decision makers in UK firms and I obtained your e-mail address from the British Exporters Database (via the Institute of Export homepage). To help me with my study, I would be most grateful if you could kindly provide me with the name and e-mail address of your export director or export sales manager so that I can elicit his/her participation in my research. Please rest assured that any information you provide will be treated confidentially and no details whatsoever will be passed on to any third-party.

Your assistance in this matter is much appreciated. Should you have any queries, please do not hesitate to contact me or my doctoral supervisor Professor A. Diamantopoulos, Chair of Marketing and Business Research, Loughborough University Business School (Tel: 01509 223123, e-mail: a.diamantopoulos@lboro.ac.uk).

Many thanks in advance for your help.

### **2<sup>nd</sup> contact stage: Sample of e-mail message acting as cover letter to the survey**

Dear Mr. Jones,

thank you for your recent e-mail indicating your willingness to help me with my doctoral research on exporting. Your co-operation is deeply appreciated. I would be most grateful if you fill the attached questionnaire on Export Objectives. I am well aware that this represents a demand on your busy schedule, but your participation could really make the difference between success and failure of the study (and my PhD as well!).

Please rest assured that any information you provide will be treated confidentially and no details whatsoever will be passed on to any third-party. To fill in the questionnaire please click on the link below:

[http://www.surveyprom.com/cgi-bin/surveyprom/run\\_survey.cgi?id=1204](http://www.surveyprom.com/cgi-bin/surveyprom/run_survey.cgi?id=1204)

In case your e-mail program does not support a live link please copy the web address above, to your browser. Completing the questionnaire on-line is the most efficient way of participating in the study. However, if you would rather receive the questionnaire by post (or as an e-mail attachment), please let me know and I will send you a copy.

Your assistance in this matter is much appreciated. Should you have any queries, please do not hesitate to contact me or my doctoral supervisor Professor A. Diamantopoulos, Chair of Marketing and Business Research, Loughborough University Business School, (Tel:01509 223123, e-mail:a.diamantopoulos@lboro.ac.uk).

Once again, many thanks for your help.

**Follow up stage (e-mail reminder)**

Dear Sir/Madam,

thank you for having accepted to participate in my survey on Export Objectives and help me with my doctoral study. Obviously due to anonymity reasons it is not possible for me to know whether you have already contributed your views to the survey. If you already have done so please ignore this e-mail. If not, please let me remind you that you can easily access and complete the questionnaire by clicking the following link:

[http://www.surveyprom.com/cgi-bin/surveyprom/run\\_survey.cgi?id=1204](http://www.surveyprom.com/cgi-bin/surveyprom/run_survey.cgi?id=1204)

Alternatively, I am sending you a word format version of the questionnaire if you think that an e-mail attachment would be more convenient for you to use. Once again I am grateful for your co-operation. Your help is very much appreciated.

Thank you.

**Appendix B2:**

**Email messages used in Method 2**

## **Appendix B2: Sample of e-mail message acting as cover letter during method (2)**

Dear Sir/Madam,

I am currently a research student at Loughborough University and conducting my PhD in the area of export marketing. As part of my research, I need to contact export decision makers in UK firms and I obtained your e-mail address from the British Exporters Database (via the Institute of Export homepage). To help me with my study, I would be most grateful if you or your Sales Manager/ Managing Director participate in my research by filling a questionnaire on Export Objectives. I am well aware that this represents a demand on your busy schedule, but your participation could really make the difference between success and failure of the study (and my PhD as well!). Therefore, your co-operation is deeply appreciated.

Please rest assured that any information you provide will be treated confidentially and for academic purposes only, while no details whatsoever will be passed on to any third-party. To fill in the questionnaire please click on the link below:

[http://www.surveyprom.com/cgi-bin/surveyprom/run\\_survey.cgi?id=1204](http://www.surveyprom.com/cgi-bin/surveyprom/run_survey.cgi?id=1204)

In case your e-mail program does not support a live link, please copy the web address above, to your browser. Completing the questionnaire on-line is the most efficient way of contributing your views to the study. Alternatively, if you think that an e-mail attachment would be more convenient for you to use, I am sending you a Word format version of the questionnaire. You can email the completed version back to me as an attachment as soon as you save it. However, if you would rather receive the questionnaire by post, please let me know and I will send you a copy.

In any case, your assistance in this matter is much appreciated. Should you have any queries, please do not hesitate to contact me or my doctoral supervisor Professor A. Diamantopoulos, Chair of Marketing and Business Research, Loughborough University Business School (Tel: 01509 223123, e-mail: a.diamantopoulos@lboro.ac.uk).

Many thanks in advance for your help.

Yours faithfully

### **Follow up stage (e-mail reminder)**

Dear Sir/Madam,

I have contacted you recently asking for your help with my doctoral study and your participation in my survey on Export Objectives. Obviously due to anonymity reasons, it is not possible for me to know whether you (or your Managing/Marketing/Export Sales Director) have already contributed your views to the survey. If you do not wish to do or already have done so, please ignore this e-mail.

If not, please let me remind you that you can easily access and complete the questionnaire by clicking the following link:

[http://www.surveyprom.com/cgi-bin/surveyprom/run\\_survey.cgi?id=1204](http://www.surveyprom.com/cgi-bin/surveyprom/run_survey.cgi?id=1204)

Alternatively, if you think that an e-mail attachment would be more convenient for you to use, I am sending you a Word format version of the questionnaire. You can save and e-mail it



back to me as an attachment as soon as you complete it. In any case, I am grateful for your co-operation.

Please let me assure you once again that any information you provide will be treated confidentially and for academic purposes only, while no details whatsoever will be passed on to any third-party..

Your help is very much appreciated.

Many thanks.

## **APPENDIX C**

### **Independent samples t-test output**

**Group Statistics**

	t-test IndepSam	N	Mean	Std. Deviation	Std. Error Mean
Years of export experience	.00 1.00	100 63	30.1100 26.0794	26.28741 23.53810	2.62874 2.96552
Number of countries a firm exports to	.00 1.00	100 70	36.5300 40.2571	32.57298 35.37283	3.25730 4.22786
% of Total Sales deriv from exporting	.00 1.00	99 71	44.4343 44.6620	26.11168 29.87830	2.62432 3.54590
Firm's Total Annual Sales Turnover (£ millions)	.00 1.00	92 64	38.3701 20.9467	118.33589 42.63020	2.33737 5.32877
Innovativeness constr	.00 1.00	98 71	18.3163 18.9859	4.92960 5.16718	.49796 .61323

....the output continues (see next page).

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Years of export experience	Equal variances assumed	1.732	.190	.992	161	.323	4.0306	4.06376	-3.99450	12.05577
	Equal variances not assumed			1.017	142.583	.311	4.0306	3.96290	-3.80300	11.86427
Number of countries a firm exports to	Equal variances assumed	3.315	.070	-.709	168	.480	-3.7271	5.25972	14.11080	6.65652
	Equal variances not assumed			-.698	140.678	.486	-3.7271	5.33712	14.27846	6.82418
% of Total Sales derived from exporting	Equal variances assumed	3.130	.079	-.053	168	.958	-.2276	4.31456	-8.74536	8.29010
	Equal variances not assumed			-.052	138.093	.959	-.2276	4.41140	-8.95026	8.49500
Firm's Total Annual Sales Turnover (£ millions)	Equal variances assumed	2.699	.102	1.127	154	.261	17.4234	15.45745	13.11257	47.95945
	Equal variances not assumed			1.296	121.988	.197	17.4234	13.43899	-9.18042	44.02729
Innovativeness construct	Equal variances assumed	.554	.458	-.854	167	.394	-.6696	.78400	-2.21742	.87824
	Equal variances not assumed			-.848	146.716	.398	-.6696	.78995	-2.23074	.89156

## **APPENDIX D**

### **Multinomial Logistic Regression Analysis**

# Multinomial Logistic Regression Output

## 1. Aggregate Level

### Final Models Fitting Information

	-2LL	Chi-square	Significance
1. Importance of Export Objectives	276.359	95.78	.062
2. Emphasis on the Frame of Reference	121.416	77.17	.000*
3. Emphasis on the Time Frame	167.327	36.80	.525

\* Significant at the .01 level

*Interpretation:* Unlike models (1) and (3), the existence of a relationship between predictors and the dependent variables is supported for the 2<sup>nd</sup> model (only). For the latter, the null hypothesis (there is no difference between a model without predictors and a model with predictors) can be rejected. With respect to (1) and (3), remember that the relevant discriminant models also resulted into *non-significant* functions that did not discriminate between the different groups of firms (see section 7.4.1 and 7.4.3).

### 2<sup>nd</sup> Model: Emphasis on the Frame of Reference (across Objectives)

#### Case Processing Summary

		N	Marginal Percentage
Emphasis on Own Plan vs Competition	1.00	84	67.7%
	2.00	31	25.0%
	3.00	9	7.3%
Valid		124	100.0%
Missing		47	
Total		171	
Subpopulation		124 <sup>a</sup>	

#### Pseudo R-Square

Cox and Snell	.463
Nagelkerke	.580
McFadden	.389

a. The dependent variable has only one value observed in 124 (100.0%) subpopulations.

Proportional by Chance accuracy: 52.5%, Classification accuracy rate: 76.6%\*

\*Classification accuracy should be equal or greater than 65.72% (1.25 x 52.5%). Thus, the criterion for classification accuracy is satisfied.

### Classification

Observed	Predicted			Percent Correct
	1.00	2.00	3.00	
1.00	76	7	1	90.5%
2.00	19	11	1	35.5%
3.00	1	0	8	88.9%
Overall Percentage	77.4%	14.5%	8.1%	76.6%

### Significant Likelihood Ratio Tests

Effect	-2LL Reduced Model	Chi-square (df: 2)	Significance
Intercept	130.893	9.477	.009
Export Dependence	136.516	15.100	.001
Resource Inadequacy	135.561	14.144	.001
Firm Size	131.899	10.482	.005
Shared Vision	128.446	7.030	.030
Innovativeness	138.648	17.232	.000
Risk Orientation	134.997	13.581	.001

\*The chi-square is the difference in -2LL between the final and a reduced model. The reduced model is formed by omitting an effect from the final model. The null is that all parameters of that effect are 0.

### Parameter Estimates for the significant predictors

Group 1*	B	Std. Error	Wald	Sig.	Exp (B)
Export Dependence	-.132	.054	5.88	.015	.876
Resource Inadequacy	-	-	-	.061	-
Firm Size	-	-	-	.147	-
Shared Vision	-.619	.293	4.46	.035	.539
Innovativeness	1.09	.421	6.78	.009	2.99
Risk Orientation	-	-	-	.093	-

\* Comparison between group 1 (emphasis on own plan) and the reference group 3 (equal emphasis on both own plan and competition)

Group 2**	B	Std. Error	Wald	Sig.	Exp (B)
Export Dependence	-.136	.055	6.14	.013	.873
Resource Inadequacy	-.719	.287	6.26	.012	.487
Firm Size	-	-	-	.410	-
Shared Vision	-	-	-	.053	-
Innovativeness	1.007	.422	5.70	.017	2.73
Risk Orientation	-	-	-	.304	-

\*\* Comparison between group 2 (emphasis on competition) and the reference group 3 (equal emphasis on both own plan and competition)

Multicollinearity is *not* detected as a problematic area in the logistic regression solution (i.e. note that all standard errors for the B coefficients are lower than 2.0).

*Interpretation of the results:*

1. Export dependent firms are less likely to place greater on their own plans (for every unit increase in export dependence the odds of placing more emphasis on own plan decrease by 0.876). Export dependent firms are also less likely to place greater emphasis on export competition (in fact, for every unit increase in export dependence the odds of placing more emphasis on competition decrease by 0.873). *Hence, export dependent firms are more likely to place equal emphasis on both referents (own plan and competition).* This result is consistent with the discriminant analysis output (see section 7.4.2).
2. Export firms having inadequate resources are *less* likely to place greater emphasis on the competition referent when assessing their export success (in fact, for every unit increase in resource inadequacy the odds are reduced by 0.487).
3. Shared vision is associated with less emphasis on own plan. Similarly firms characterised by a culture of shared vision/purpose are less likely to focus on their competitors only. *By implication, exporters sharing a common vision/purpose are more likely to emphasise both their own export plan and competition referents.*
4. Innovative exporters are more likely to focus on their own plan (in comparison to those placing equal emphasis on both referents); for every unit increase in innovativeness the odds of focusing on own plan increase by 2.99. Exporters belonging to the innovative group are also more likely to belong to the group of those focusing on their competitors' performance (rather than the group of those placing equal emphasis on both referents). *Hence, innovative exporters are less likely to place equal emphasis on the own export plan and competition referents.*



## 2. Disaggregate Level

### Final Models Fitting Information

EXPORT SALES	-2LL	Chi-square	Significance
1. Export Sales (Own plan vs. Competition)	158.736	64.29	.005*
2. Export Sales (Short- vs. Long-term)	204.031	53.87	.046**
EXPORT PROFIT			
3. Export Profit (Own plan vs. Competition)	165.841	71.24	.001*
4. Export Profit (Short- vs. Long-term)	189.057	67.026	.003*
NPI			
5. NPI (Own plan vs. Competition)	207.779	46.88	.153
6. NPI (Short- vs. Long-term)	178.731	41.013	.340

\* Significant at the .01 level

\*\* Significant at the .05 level

*Interpretation of the output for all 6 models:* The existence of a relationship between the set of the 19 independent variables and each dependent variable is supported for the first *four* models (involving the assessment of the Export Sales and Export Profit objectives). Also all standard errors are below 2.0 suggesting that multicollinearity is not a problem for any of the models. Regarding NPI, the null hypotheses of no difference between a model with predictors and one without *cannot* be rejected.

### 1<sup>st</sup> Model: Export Sales assessment against Own Plan vs. Competition

#### Case Processing Summary

	N	Marginal Percentage
Exp Sales	79	63.7%
(Own vs Comp)	18	14.5%
	27	21.8%
Valid	124	100.0%
Missing	47	
Total	171	
Subpopulation	124 <sup>a</sup>	

a. The dependent variable has only one value observed in 124 (100.0%) subpopulations.

#### Pseudo R-Square

Cox and Snell	.405
Nagelkerke	.485
McFadden	.288

Proportional by chance accuracy: 47.3%, Classification accuracy rate: 75.8%

\*Classification accuracy should be equal or greater than 59.12% (1.25 x 47.3%).

**Classification**

Observed	Predicted			Percent Correct
	1.00	2.00	3.00	
1.00	73	1	5	92.4%
2.00	9	9	0	50.0%
3.00	14	1	12	44.4%
Overall Percentage	77.4%	8.9%	13.7%	75.8%

**Significant Likelihood Ratio Tests\***

Effect	-2LL Reduced Model	Chi-square (df: 2)	Significance
Export Experience	165.244	6.508	.039
Risk Orientation	171.531	12.796	.002
Environmental Uncertainty	167.211	8.47	.014

\*The chi-square is the difference in -2LL between the final and a reduced model. The reduced model is formed by omitting an effect from the final model. The null is that all parameters of that effect are 0.

**Parameter Estimates for the above significant predictors**

Group 1*	B	Std. Error	Wald	Sig.	Exp (B)
Export Experience	-	-	-	.180	-
Risk Orientation	-	-	-	.264	-
Environmental Uncertainty	-.111	.048	5.235	.022	.895

\* Comparison between group 1 (emphasis on own plan) and the reference group 3 (equal emphasis on both own plan and competition)

Group 2**	B	Std. Error	Wald	Sig.	Exp (B)
Export Experience	-2.008	.847	5.622	.018	.134
Risk Orientation	-	-	-	.062	-
Environmental Uncertainty	-	-	-	.825	-

\*\* Comparison between group 2 (emphasis on competition) and the reference group 3 (equal emphasis on both own plan and competition)

**Interpretation of the results for the 1<sup>st</sup> model:**

1. Export firms operating in an uncertain environment are *less* likely to belong to the group of those placing greater emphasis on their own plan when assessing export sales performance (rather than the group of exporters placing equal emphasis on both own plan and competition). In fact for every unit increase in

environmental uncertainty, the odds on emphasising a firm's own export plan decrease by 0.895.

2. Experienced exporters are *less* likely to belong to the group of firms focusing mainly on the competition referent when assessing their export sales rather than the group of those emphasising equally both frames of reference (for every unit increase in export experience the odds of focusing solely on export competitors' sales performance decrease by 0.134).

**2<sup>nd</sup> Model: Export Sales assessment in the Short- vs. Long-term**

**Case Processing Summary**

		N	Marginal Percentage
Exp Sales	1.00	42	33.9%
(Short vs	2.00	58	46.8%
Long)	3.00	24	19.4%
Valid		124	100.0%
Missing		47	
Total		171	
Subpopulation		124 <sup>a</sup>	

**Pseudo R-Square**

Cox and Snell	.352
Nagelkerke	.403
McFadden	.209

a. The dependent variable has only one value observed in 124 (100.0%) subpopulations.

Proportional by Chance accuracy: 37%, the Classification accuracy rate: 63.7%\*

\*Classification accuracy should be equal or greater than 46.25% (1.25 x 37%).

**Classification**

Observed	Predicted			Percent Correct
	1.00	2.00	3.00	
1.00	24	16	2	57.1%
2.00	10	43	5	74.1%
3.00	4	8	12	50.0%
Overall Percentage	30.6%	54.0%	15.3%	63.7%

**Significant Likelihood Ratio Tests\***

Effect	-2LL Reduced Model	Chi-square (df: 2)	Significance
Destination diversity	216.093	12.061	.002

\*The chi-square is the difference in -2LL between the final and a reduced model. The reduced model is formed by omitting an effect from the final model. The null is that all parameters of that effect are 0.

*Parameter Estimates for the above significant predictor*

<b>Group 1*</b>	<i>B</i>	<i>Std. Error</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp (B)</i>
Exp. Destination Diversity	1.43	.508	7.94	.005	4.18

\* Comparison between group 1 (emphasis on the short-term) and the reference group 3 (equal emphasis on both a short- and a long-term horizon)

<b>Group 2**</b>	<i>B</i>	<i>Std. Error</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp (B)</i>
Exp. Destination Diversity	1.43	.479	8.98	.003	4.20

\*\* Comparison between group 2 (emphasis on the long-term) and the reference group 3 (equal emphasis on both a short- and a long-term horizon)

*Interpretation of the results for the 2<sup>nd</sup> model:*

1. The above comparisons suggest that firms operating in diverse export destinations are *less* likely to place equal emphasis on both their short- and long-term export sales performance assessments. Specifically, for every unit increase in export destination diversity the odds of using either a short- or a long-term time horizon increase by more than 4 (in either case). This is *consistent* with the discriminant analysis' results (see section 8.2.2).

*3<sup>rd</sup> Model: Export profit assessment against Own Plan vs. Competition*

**Case Processing Summary**

	N	Marginal Percentage
Exp Profit (Own vs Comp) 1.00	73	58.9%
2.00	21	16.9%
3.00	30	24.2%
Valid	124	100.0%
Missing	47	
Total	171	
Subpopulation	124 <sup>a</sup>	

**Pseudo R-Square**

Cox and Snell	.437
Nagelkerke	.513
McFadden	.300

<sup>a</sup>. The dependent variable has only one value observed in 124 (100.0%) subpopulations.

Proportional by Chance accuracy: 43.2%, Classification accuracy rate: 71.8%\*

\* Classification accuracy should be equal or greater than 54% (1.25 x 43.2%)

**Classification**

Observed	Predicted			Percent Correct
	1.00	2.00	3.00	
1.00	63	5	5	86.3%
2.00	12	9	0	42.9%
3.00	13	0	17	56.7%
Overall Percentage	71.0%	11.3%	17.7%	71.8%

**Significant Likelihood Ratio Tests\***

Effect	-2LL Reduced Model	Chi-square (df: 2)	Significance
Firm Size	172.871	7.03	.030
Risk Orientation	172.135	6.29	.043
Environmental Uncertainty	175.253	9.41	.009
Efficiency	174.825	8.98	.011

\*The chi-square is the difference in -2LL between the final and a reduced model. The reduced model is formed by omitting an effect from the final model. The null is that all parameters of that effect are 0.

**Parameter Estimates for the above significant predictors**

Group 1*	B	Std. Error	Wald	Sig.	Exp (B)
Firm Size	.940	.390	5.79	.016	2.55
Risk Orientation	-	-	-	.806	-
Environmental Uncertainty	-.168	.061	7.61	.006	.846
Efficiency	.702	.261	7.25	.007	2.018

\* Comparison between group 1 (emphasis on own plan) and the reference group 3 (equal emphasis on both own plan and competition)

Group 2**	B	Std. Error	Wald	Sig.	Exp (B)
Firm Size	-	-	-	.236	-
Risk Orientation	-	-	-	.052	-
Environmental Uncertainty	-	-	-	.116	-
Efficiency	-	-	-	.368	-

\*\* Comparison between group 2 (emphasis on competition) and the reference group 3 (equal emphasis on both own plan and competition)

**Interpretation of the results for the 3<sup>rd</sup> model:**

1. The larger the firm the greater the odds on using the own plan referent to assess export profitability (the odds increase by 2.55 for every unit increase in

firm size). *H2d* is supported, which is in line with the output of the discriminant analysis.

2. Export firms operating in an uncertain environment are *less* likely to be in the group of those focusing mainly on their own export plan vis-à-vis the group of firms placing equal emphasis on both own plan and competition when assessing their export profitability. Once again, this finding is *consistent* with the results of the discriminant analysis (see section 8.3.1).
3. Efficiency-oriented exporters are *more* likely to focus on their own export plan (rather than both own plan and competition) when undertaking export profitability assessments. Note that for every unit increase in an export firm's emphasis on efficiency, the odds of focusing on the own plan referent increase by 2.018. *H2g* is supported as it did with the discriminant analysis too (see 8.3.1).

**4<sup>th</sup> Model: Export profit assessment in the Short- vs. Long-term**

**Case Processing Summary**

		N	Marginal Percentage
Exp Profit	1.00	42	33.9%
(Short vs	2.00	59	47.6%
Long)	3.00	23	18.5%
Valid		124	100.0%
Missing		47	
Total		171	
Subpopulation		124 <sup>a</sup>	

**Pseudo R-Square**

Cox and Snell	.418
Nagelkerke	.478
McFadden	.262

a. The dependent variable has only one value observed in 124 (100.0%) subpopulations.

Proportional by Chance accuracy: 37.4%, Classification accuracy rate: 66.9%\*

\* Classification accuracy should be equal or greater than 46.75% (1.25 x 37.4%)

**Classification**

Observed	Predicted			Percent Correct
	1.00	2.00	3.00	
1.00	27	12	3	64.3%
2.00	12	41	6	69.5%
3.00	2	6	15	65.2%
Overall Percentage	33.1%	47.6%	19.4%	66.9%

**Significant Likelihood Ratio Tests\***

<i>Effect</i>	<i>-2LL Reduced Model</i>	<i>Chi-square (df: 2)</i>	<i>Significance</i>
Export Experience	203.38	14.32	.001
Export Dependence	196.99	7.94	.019
Destination Diversity	195.75	6.69	.035
Firm Size	195.107	6.05	.049
Adaptiveness	202.262	13.205	.001

\*The chi-square is the difference in -2LL between the final and a reduced model. The reduced model is formed by omitting an effect from the final model. The null is that all parameters of that effect are 0.

**Parameter Estimates for the above significant predictors**

<b>Group 1*</b>	<i>B</i>	<i>Std. Error</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp (B)</i>
Export Experience	-2.23	.715	9.81	.002	.107
Export Dependence	.042	.017	6.20	.013	1.04
Destination Diversity	1.33	.587	5.16	.023	3.80
Firm Size	1.21	.521	5.45	.020	3.37
Adaptiveness	-1.19	.361	10.90	.001	.304

\* Comparison between group 1 (emphasis on the short-term) and the reference group 3 (equal emphasis on both a short- and a long-term horizon)

<b>Group 2**</b>	<i>B</i>	<i>Std. Error</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp (B)</i>
Export Experience	-2.05	.647	10.08	.001	.128
Export Dependence	-	-	-	.296	-
Destination Diversity	1.25	.548	5.27	.022	3.52
Firm Size	-	-	-	.095	-
Adaptiveness	-.826	.319	6.68	.010	.438

\*\* Comparison between group 2 (emphasis on the long-term) and the reference group 3 (equal emphasis on both a short- and a long-term horizon)

**Interpretation of the results for the 4<sup>th</sup> model:**

1. Experienced exporters are *less* likely to focus solely on either short- or long-term export profitability assessments (in comparison to placing equal importance on both the short- and the long-term horizon). *Experienced exporters are more likely to have equal consideration for export profitability assessments in the short and the long run.*
2. Firms that export to a diversity of destinations are *more* likely to focus on short-term export profits (rather than short- and long-term profits). Also, they are *more* likely to belong to the group of those looking for long-term profits rather than maintaining a balanced perspective between short- and long-term profits. In fact for every unit increase in export destination diversity, the odds

of looking into either a short- or a long-term horizon increase by more than 3 (in either case). *Therefore, firms operating in a diversity of export destinations are less likely to place equal importance on both time horizons when assessing export profitability.*

3. Export firms emphasising adaptiveness are *less likely* to belong to the group of those adopting a short-term approach to their export profitability assessments. Exporters' focus on adaptiveness is also *less likely* to suggest an over-emphasis on long-term export profitability (rather than *equal* emphasis on a short- and a long-term horizon). *By implication, adaptive exporters are more likely to concentrate equally on the assessment of both their short- and long-term profits.* This finding is *consistent* with the respective discriminant analysis output (see section 8.3.2).
4. Firms exhibiting greater export dependence are *more likely* to adopt a short-term view of their export profitability (rather than a balanced perspective involving assessments in both the short- and long-run). For every unit increase in export dependence, the odds of focusing on short-term profits increase by 1.04.
5. Finally larger exporters are *more likely* to be short-term oriented in their export profit performance assessments. The output suggests that for every unit increase in firm size, the odds of focusing on short-term profits also increase by 3.37.

***5<sup>th</sup> Model: NPI assessments against Own plan vs. Competition  
and 6<sup>th</sup> Model: NPI assessments in the Short- vs. Long-term***

The probabilities of the chi-square statistics are higher than the 5% significance level for both multinomial regression models corresponding to the NPI objective (see Model fitting information above). The null hypotheses (there is no difference between a model without independent variables and a model with independent variables) *cannot* be rejected. The existence of a relationship between the 19 predictors and the dependent variables *is not* supported (for either model). Remember that the respective discriminant analyses also resulted into non-significant functions unable to discriminate between different categories/groups of firms (see sections 8.4.1 and 8.4.2).



# Contextual influences on export performance assessments

## Summary of multinomial regression findings

### 1. Aggregate Level

#### *Relationships found between the Context and the Frame of Reference employed*

CONTEXTUAL CHARACTERISTICS	Emphasis on the frame of reference (across objectives)		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>
<b>Export-related</b>			
Export Dependence			+ *
Resource Inadequacy		- **	
<b>Management-related</b>			
Shared Vision/Purpose			+
Innovativeness			- <sup>f</sup>

\* More likely to place equal emphasis on both referents

\*\* Less likely to emphasise competition rather than both referents

<sup>f</sup> Less likely to place equal emphasis on both referents

### 2. Disaggregate Level

#### *Contextual antecedents of Export Sales performance assessments*

CONTEXTUAL CHARACTERISTICS	EXPORT SALES OBJECTIVE'S PERFORMANCE ASSESSMENT					
	Emphasis on the frames of reference			Emphasis on the time frames		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>	<i>Short-term</i>	<i>Long-term</i>	<i>Equal emphasis</i>
<b>Export-related</b>						
Export Experience		- *				
Exp. Destination Diversity						- <sup>f</sup>
<b>Environment</b>						
Environmental Uncertainty	- **					

\* Less likely to emphasise competition rather than both referents

\*\* Less likely to emphasise own export plan rather than both referents

<sup>f</sup> Less likely to place equal emphasis on both short- and long-term horizons

*Contextual antecedents of Export Profit performance assessments*

CONTEXTUAL CHARACTERISTICS	EXPORT PROFIT OBJECTIVE'S PERFORMANCE ASSESSMENT					
	Emphasis on the frames of reference			Emphasis on the time frames		
	<i>Own plan</i>	<i>Competition</i>	<i>Equal emphasis</i>	<i>Short-term</i>	<i>Long-term</i>	<i>Equal emphasis</i>
<b>Export-related</b>						
Export Experience						+ <sup>a</sup>
Export Dependence				+ <sup>k</sup>		
Exp. Destination Diversity						+
<b>Company-related</b>						
Firm Size	(H2d) +*			+		
<b>Environment</b>						
Environmental Uncertainty	- **					
<b>Performance-related</b>						
Efficiency	(H2g) +					
Adaptiveness						+

\* More likely to emphasise own plan vs. both referents

\*\* Less likely to emphasise own plan vs. both referents

<sup>k</sup> More likely to focus on a short-term rather than short- & long-term horizons

<sup>a</sup> More likely to place equal emphasis on both short- & long-term horizons

## **APPENDIX E**

### **Inter-correlations between the 19 independent variables**

## Appendix E1:

### Parametric correlations between the normally distributed independent variables

Correlations

		Export Experience Transformed	% of Total Sales derived from exporting	Destination Diversity Transformed	Resource Inadequacy construct	Export Firm Size Transformed	Annual Sales Turnover (Transformed)	Shared Vision construct	Innovativeness construct	Risk Orientation construct	Commitment to Learning construct	Export Market Orientation construct	Environmental Uncertainty (External)
Export Experience Transformed	Pearson Correlation	1	.244**	.616**	-.114	.521**	.387**	-.066	-.058	-.213**	-.036	-.106	-.018
	Sig. (2-tailed)		.002	.000	.149	.000	.000	.405	.463	.007	.652	.183	.822
	N	163	162	163	162	160	149	162	161	160	161	159	158
% of Total Sales derived from exporting	Pearson Correlation	.244**	1	.368**	-.206**	-.039	.044	.125	.145	-.055	-.072	.071	-.043
	Sig. (2-tailed)	.002		.000	.007	.618	.583	.104	.061	.476	.353	.368	.586
	N	162	170	169	169	167	155	169	168	167	168	165	164
Destination Diversity Transformed	Pearson Correlation	.616**	.368**	1	-.306**	.371**	.295**	-.092	-.030	-.126	-.087	.087	-.042
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.233	.700	.106	.263	.263	.588
	N	163	169	170	169	167	155	169	168	167	168	166	165
Resource Inadequacy construct	Pearson Correlation	-.114	-.206**	-.306**	1	-.224**	-.292**	-.122	-.042	-.033	-.006	-.221**	.158*
	Sig. (2-tailed)	.149	.007	.000		.004	.000	.113	.586	.669	.934	.004	.043
	N	162	169	169	170	167	155	169	168	167	168	165	164
Export Firm Size Transformed	Pearson Correlation	.521**	-.039	.371**	-.224**	1	.798**	-.231**	-.191*	-.315**	-.142	-.083	.039
	Sig. (2-tailed)	.000	.618	.000	.004		.000	.003	.014	.000	.069	.290	.621
	N	160	167	167	167	168	153	167	166	165	166	163	162
Annual Sales Turnover (Transformed)	Pearson Correlation	.387**	.044	.295**	-.292**	.798**	1	-.162*	-.093	-.264**	-.090	-.068	.016
	Sig. (2-tailed)	.000	.583	.000	.000	.000		.043	.252	.001	.269	.405	.842
	N	149	155	155	155	153	156	155	154	153	154	151	150
Shared Vision construct	Pearson Correlation	-.066	.125	-.092	-.122	-.231**	-.162*	1	.701**	.494**	.538**	.417**	.047
	Sig. (2-tailed)	.405	.104	.233	.113	.003	.043		.000	.000	.000	.000	.552
	N	162	169	169	189	167	155	170	188	167	168	165	164
Innovativeness construct	Pearson Correlation	-.058	.145	-.030	-.042	-.191*	-.093	.701**	1	.490**	.581**	.368**	.054
	Sig. (2-tailed)	.463	.061	.700	.586	.014	.252	.000		.000	.000	.000	.492
	N	161	168	168	168	166	154	168	169	166	167	164	163
Risk Orientation construct	Pearson Correlation	-.213**	-.055	-.126	-.033	-.315**	-.264**	.494**	.490**	1	.535**	.388**	.108
	Sig. (2-tailed)	.007	.476	.106	.669	.000	.001	.000	.000		.000	.000	.170
	N	160	167	167	167	165	153	167	166	168	166	163	162
Commitment to Learning construct	Pearson Correlation	-.036	-.072	-.087	-.006	-.142	-.090	.538**	.581**	.535**	1	.410**	.074
	Sig. (2-tailed)	.652	.353	.263	.934	.069	.269	.000	.000	.000		.000	.347
	N	161	168	168	168	166	154	168	167	168	169	164	163
Export Market Orientation construct	Pearson Correlation	-.106	.071	.087	-.221**	-.083	-.068	.417**	.368**	.388**	.410**	1	-.022
	Sig. (2-tailed)	.183	.368	.263	.004	.290	.405	.000	.000	.000	.000		.784
	N	159	165	166	165	163	151	165	164	163	164	166	161
Environmental Uncertainty (External)	Pearson Correlation	-.018	-.043	-.042	.158*	.039	.016	.047	.054	.108	.074	-.022	1
	Sig. (2-tailed)	.822	.586	.588	.043	.621	.842	.552	.492	.170	.347	.784	
	N	158	164	165	164	162	150	164	163	162	163	161	165

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

## Appendix E2:

### Non-parametric correlations between the non-normally distributed independent variables

**Correlations**

			Export Commitment construct	Open-min dedness construct	Future Oriented Culture construct	Efficiency	Effectiveness	Adaptiveness	Performance Documentati on construct
Spearman's rho	Export Commitment construct	Correlation Coefficient	1.000	.390**	.413**	.259**	.320**	.333**	.398**
		Sig. (2-tailed)	.	.000	.000	.001	.000	.000	.000
		N	170	170	170	169	169	169	166
	Open-mindedness construct	Correlation Coefficient	.390**	1.000	.455**	.236**	.160*	.272**	.306**
		Sig. (2-tailed)	.000	.	.000	.002	.037	.000	.000
		N	170	171	171	169	169	169	166
	Future Oriented Culture construct	Correlation Coefficient	.413**	.455**	1.000	.178*	.156*	.255**	.283**
		Sig. (2-tailed)	.000	.000	.	.021	.043	.001	.000
		N	170	171	171	169	169	169	166
	Efficiency	Correlation Coefficient	.259**	.236**	.178*	1.000	.471**	.327**	.152
		Sig. (2-tailed)	.001	.002	.021	.	.000	.000	.051
		N	169	169	169	169	169	165	
	Effectiveness	Correlation Coefficient	.320**	.160*	.156*	.471**	1.000	.358**	.281**
		Sig. (2-tailed)	.000	.037	.043	.000	.	.000	.000
		N	169	169	169	169	169	165	
	Adaptiveness	Correlation Coefficient	.333**	.272**	.255**	.327**	.358**	1.000	.220**
		Sig. (2-tailed)	.000	.000	.001	.000	.000	.	.004
		N	169	169	169	169	169	165	
	Performance Documentation construct	Correlation Coefficient	.398**	.306**	.283**	.152	.281**	.220**	1.000
		Sig. (2-tailed)	.000	.000	.000	.051	.000	.004	.
		N	166	166	166	165	165	166	

\*\* Correlation is significant at the .01 level (2-tailed).

\* Correlation is significant at the .05 level (2-tailed).

## Appendix E3:

Non-parametric correlations between the normally and the non-normally distributed independent variables



Correlations

			Export Commitment construct	Open-min dedness construct	Future Oriented Culture construct	Efficiency	Effectiveness	Adaptiveness	Performance Documentati on construct
Spearman's rho	Export Experience Transformed	Correlation Coefficient	.036	-.135	.034	.111	.063	-.098	.104
		Sig. (2-tailed)	.652	.086	.663	.163	.430	.216	.193
		N	182	163	163	161	161	161	158
% of Total Sales derived from exporting	Correlation Coefficient	Correlation Coefficient	.352**	.047	-.045	.042	.029	.079	.113
		Sig. (2-tailed)	.000	.539	.562	.586	.712	.311	.149
		N	169	170	170	168	168	168	165
Destination Diversity Transformed	Correlation Coefficient	Correlation Coefficient	.183*	-.093	.028	.013	.164*	.014	.183*
		Sig. (2-tailed)	.017	.230	.721	.883	.034	.862	.019
		N	169	170	170	168	168	168	165
Resource Inadequacy construct	Correlation Coefficient	Correlation Coefficient	-.395**	-.077	-.148	-.115	-.248**	-.183*	-.269**
		Sig. (2-tailed)	.000	.321	.053	.138	.001	.017	.000
		N	170	170	170	169	169	169	166
Export Firm Size Transformed	Correlation Coefficient	Correlation Coefficient	-.049	-.202**	-.107	.108	.033	-.111	.022
		Sig. (2-tailed)	.532	.008	.166	.165	.673	.154	.782
		N	167	168	168	166	166	166	163
Annual Sales Turnover (Transformed)	Correlation Coefficient	Correlation Coefficient	.032	-.107	-.009	.152	.130	-.030	.107
		Sig. (2-tailed)	.692	.184	.909	.059	.109	.711	.192
		N	155	156	156	154	154	154	151
Shared Vision construct	Correlation Coefficient	Correlation Coefficient	.318**	.538**	.479**	.202**	.187**	.242**	.311**
		Sig. (2-tailed)	.000	.000	.000	.009	.015	.002	.000
		N	169	170	170	168	168	168	165
Innovativeness construct	Correlation Coefficient	Correlation Coefficient	.311**	.628**	.482**	.118	.152	.319**	.318**
		Sig. (2-tailed)	.000	.000	.000	.129	.050	.000	.000
		N	168	169	169	167	167	167	164
Risk Orientation construct	Correlation Coefficient	Correlation Coefficient	.282**	.457**	.397**	.040	.108	.246**	.209**
		Sig. (2-tailed)	.000	.000	.000	.608	.166	.001	.007
		N	167	168	168	166	166	166	163
Commitment to Learning construct	Correlation Coefficient	Correlation Coefficient	.237**	.473**	.596**	.213**	.138	.268**	.225**
		Sig. (2-tailed)	.002	.000	.000	.006	.076	.000	.004
		N	168	169	169	167	167	167	164
Export Market Orientation construct	Correlation Coefficient	Correlation Coefficient	.475**	.507**	.429**	.101	.212**	.332**	.367**
		Sig. (2-tailed)	.000	.000	.000	.199	.006	.000	.000
		N	165	166	166	165	165	165	162
Environmental Uncertainty (External)	Correlation Coefficient	Correlation Coefficient	-.068	.034	-.030	-.010	-.078	-.026	.054
		Sig. (2-tailed)	.387	.664	.701	.902	.322	.739	.496
		N	164	165	165	163	163	163	160

\*\* Correlation is significant at the .01 level (2-tailed).

\* Correlation is significant at the .05 level (2-tailed).

