Does Improvisation Help or Hinder Planning in Determining Export Success?

Decision Theory Applied to Exporting

ABSTRACT
Exporting allows organizations to diversify risk and generate multiple income streams. In turn, the making of good export decisions is purported to be a main determinant of performance. While substantive export decisions are well researched, little is known about how export decisions should be made in practice, and whether different decision-making approaches should be combined. This study addresses this gap using decision theory; the interaction of planning and improvisation is assessed and their impact on export responsiveness and export performance is examined. A conceptual model is developed through exploratory research and tested through structural equation modelling. Insights into the results are then sought via post-hoc in-depth interviews. We conclude that improvisation has multiple dimensions (spontaneity, creativity and action-orientation), and that there is no one ‘best way’ for export managers to make decisions. Furthermore, export planning can enhance economic performance but detract from customer performance. Meanwhile, improvisation improves responsiveness, while action-orientation leads to greater customer performance and results in greater responsiveness with regard to planning. Export managers should be wary though of spontaneity and creativity, as they detract from planning outcomes.

Key words: Exporting, decision-making, planning, improvisation, export performance
Exporting is the most popular mode of entry into international markets (Hultman, Katsikeas, and Robson 2009), and many firms, which struggle to survive in challenging economic conditions, have little choice but to export (Theodosiou and Katsikea 2013). As a result, an understanding of the determinants of timely responsiveness to these conditions (Homburg, Grozdanović, and Klarmann 2007) and subsequent export performance has become particularly important to marketing academics, managers and policy makers alike (Sousa, Ruzo, and Losada 2010). Against this background, export decision-making has been identified as one of the key drivers of a firm’s success within the international environment (Tantong et al. 2010). In this context, our knowledge of substantive export marketing decisions (e.g. standardization/adaptation) and how these affect export performance is rich and growing (e.g. Lages, Jap, and Griffith 2008). However, little is still known about how export decisions are made. The first research gap identified, therefore, concerns the way in which export decisions are made and how this can affect the success or failure of the export function (Balabanis and Spyropoulou 2007).

To assist in developing a model of how export decisions are made, decision theory is used as a platform. Decision theory examines decision-making from two angles: normative and descriptive. The normative approach to decision-making views managers as rational actors, who make optimal choices (Slater, Olson, and Hult 2006) in response to environmental conditions, in order to maximize performance. This approach is associated with planning, and defined as a process of identifying definite and precise objectives, collecting and analyzing information and evaluating different options, in order to formulate a solution to a problem or design a response (Bailey, Johnson, and Daniels 2000). Planning can enable companies to outperform their competitors (Wiltbank et al. 2006) and achieve export success (Shoham 2002). However, it can also result in negative outcomes (Katsikeas, Piercy, and Ioannidis 1996). The normative approach has been criticized for its textbook formality and its failure to
take into consideration uncertainty in the environment, and the need to respond to it in a timely manner. Within decision theory, the normative approach is counterbalanced by the descriptive approach, which suggests that many decisions affecting a firm’s performance are made outside the planning process (Grant 2003). Nowadays, companies find themselves in a rapidly changing environment, in which ‘flexible’ decision-making that addresses market changes promptly is a necessity (Slotegraaf and Dickson 2004; Theodosiou and Katsikea 2013). These decisions tend to be more responsive, adaptive, spontaneous and creative (Ford, Sharfman, and Dean 2008). In turn, “the spontaneous and creative process of attempting to achieve an objective in a new way” (Vera and Crossan 2004, p. 733) is often defined as improvisation. The second research gap identified concerns the fact that the majority of research on export decision-making tends to focus on planning, disregarding alternative ways in which exporters make decisions, such as improvisation.

Surprisingly, planning and improvisation have historically been viewed as opposite poles of the same continuum, and therefore mutually exclusive (Moorman and Miner 1998), rather than as decision-making approaches, which can potentially be used simultaneously. Very little research has attempted to examine how both can be used within the same context, in a bid to maximize performance. When used alone, formalized (and inherently more rigid) planning undermines the decision-maker’s ability to deal with unexpected opportunities and threats in a timely manner. By the same token, if managers rely exclusively on improvisation, there is a danger that decision-making will become chaotic (Brown and Eisenhardt 1998). This may go some way towards explaining discrepancies in export planning research. Specifically, it is likely that the drawbacks of planning and improvisation could be cancelled out when the two approaches are applied together, with their combined application possibly resulting in better outcomes for companies (Slater, Olson, and Hult 2006). The third research gap identified, therefore, concerns the dearth of theoretical and empirical information on the outcomes of
combining planning and improvisation within the export context. Accordingly, the purpose of this study is to investigate the value and use of improvisation in exporting, and the extent to which the interaction of planning and improvisation is related to export responsiveness and performance.

The theoretical contributions of this study address the research gaps identified above. Firstly, we complement the literature on antecedents to export performance by examining, not the substantive export decisions that are made, but how these are made. In so doing, we bring decision theory to the realm of export marketing research, thereby ensuring theoretical rigor to the conceptual development. Secondly, we introduce the concept of improvisation to the export decision-making field, in a bid to provide a more holistic perspective on export decisions. We anchor our export improvisation research in preliminary fieldwork, constituted of in-depth interviews with export decision-makers, thus ensuring the direct relevance and applicability of our work. Finally, previous studies on planning and improvisation have typically focused on the effects of either planning or improvisation on performance, and only exploratory research into the potential combinatorial effects of planning and improvisation on export performance can be found (Nemkova, Souchon, and Hughes 2012). We therefore bring planning and improvisation together into one study, thus countering any potential model mis-specifications that prior work into export decision-making might have suffered from, by looking exclusively at planning. In so doing, we show the differential effects of combining planning with improvisation, depending on the outcome variable (e.g. responsiveness versus performance) and depending on different aspects of improvisation. Therefore, we also contribute to decision-making theory by providing evidence on the outcomes of combining the two approaches.
The study also contributes to practice, since it answers questions relating to whether and how planning and improvisation can work together to enhance a firm’s performance. Firstly, our study shows that there is no ‘one best way’ of making decisions, and that a single decision-making approach cannot adequately address all decision-making needs. Therefore, firms need to use a blend of planning and improvisation to achieve export success. Secondly, in order to successfully train their employees, managers need to know “what improvisation is and what it is not” (Vera and Crossan 2005, p. 204). We consider the plural nature of improvisation, and provide useful practical guidelines and recommendations for marketing managers on the role improvisation plays in the improvement of the export decision-making process. This will help managers to invest resources wisely in the development of improvisational skills among export staff.

The paper proceeds with a discussion on the decision-making literature, an explanation of the preliminary study and the development of a conceptual model. The methodology employed to test the hypotheses is then described, followed by the results, post-hoc qualitative analysis and a discussion. The paper concludes by describing the theoretical and practical implications, limitations and future research directions arising from the study.

BACKGROUND

Economic globalization and increased international competition have made effective international marketing decision-making ever more critical to the survival, growth and profitability of companies operating worldwide (Katsikeas, Samiee, and Theodosiou 2006). Decision-making is one of the main functions of management (Bailey, Johnson, and Daniels 2000; Tantong et al. 2010), and as a key part of a manager’s daily work, it influences a firm’s performance and success (Sharfman and Dean 1997). Decision theory, constituted of
normative and descriptive approaches, helps to understand how the decision-making process influences export performance. The normative approach is based on the notion of rationality, and aims to prescribe how decisions should be made. This approach is underpinned by the notion that optimal decision-making entails predicting what to do next to achieve better outcomes through planning (Wiltbank et al. 2006).

The descriptive approach, based on the concept of bounded rationality, has been developed in parallel to the development of normative models. Some researchers (e.g. Nutt 2008) state that real-life decision-making processes rarely follow the normative approach, as managers have to multitask, juggling a number of decisions at the same time and aim to satisfice rather than optimize their options. In general, decision-making is considered to be more spontaneous and creative (Ford, Sharfman, and Dean 2008). In turn, spontaneous and creative decision-making is how improvisation is often defined (Vera and Crossan 2005). The spontaneity element is, at times, represented as the convergence of decision design and execution (Moorman and Miner 1998), implying the importance of acting on the decision (which planning does not necessarily incorporate). Following this stream of literature, we therefore adopt a three-dimensional structure of improvisation (spontaneity, creativity, action-orientation). We now define each of these three facets in turn.

Firstly, improvisation is extemporaneous in nature. The spontaneity dimension is related to time orientation, meaning that individuals react to situations and make decisions in the moment, rather than anticipate what might happen (Moorman and Miner 1998). The creativity dimension of improvisation relates to the search for novelty and usefulness while making decisions (Hmieleski and Corbett 2006). However, it does not necessarily result in creative outcomes, but rather focuses on how decisions are made. Finally, improvisation incorporates action-orientation, which reflects managers’ ability to maintain an activity and focus their...
attention on imminent problems (Hmieseski, Corbett, and Baron 2013). Highly action-orientated export managers will prefer action as opposed to analysis (Miner, Bassoff, and Moorman 2001).

Traditionally, planning and improvisation have been considered to be opposite poles of the same continuum (Miner, Bassoff, and Moorman 2001; Moorman and Miner 1998). However, this assumption can be challenged. Formalized planning is often described as a deliberate and rigid approach to decision-making, while improvisation is viewed as informal and flexible, due to its emergent nature. These approaches are not mutually exclusive, as a lack of planning does not necessarily equate to high levels of improvisation. In other words, improvisation can occur as a deviation from planning, and similarly, small organisations that regard planning with scepticism do not necessarily improvise instead of plan (Nemkova, Souchon, and Hughes 2012). Nevertheless, planning needs to be treated with caution and not be confused with a plan (a physical document), as actual planning goes beyond the development and use of a marketing plan. Companies that develop detailed marketing plans are not necessarily better at employing a planning process (and vice versa) (Slotegraaf and Dickson 2004).

Planning aims to determine the future direction of the company, and attempts to predict environmental changes (Dibben, Harris, and Wheeler 2003), whereas improvisation does not (as a rule) incorporate such long-term goals. Instead, improvisation helps managers to respond in a timely manner to unexpected opportunities and deal with day-to-day tasks (Miner, Bassoff, and Moorman 2001). Thus, both planning and improvisation can potentially be beneficial to exporting companies. Their combination in the exporting context might reveal new insights into the dynamic and complex nature of the international environment, where successful companies often have to demonstrate the ability to implement a clear, long-term strategy and plan for the future, but at the same time be able to react rapidly to numerous
market opportunities and threats to stay competitive. However, researchers have seldom examined the simultaneous use of these two approaches within the export context.

**STUDY 1**

Prior to conceptual development, qualitative research was conducted to gain deeper insights into the identified research gaps related to the limited information available on how export marketing decisions are made, and whether export managers use a combination of decision-making approaches (planning and improvisation) in practice. The population of interest included export decision-makers in manufacturing firms in the UK.

Eleven in-depth interviews were conducted with senior managers responsible for export decision-making. The information was derived from exporters that varied in terms of size (e.g. number of employees), the industry in which they operate, the countries to which they export (region, number) and years of exporting (see Appendix A). Collecting the information from a wide variety of companies allowed potentially rich data to be gathered and an optimization of findings. The data analysis was based on Miles and Huberman’s (1994) approach and involved three main stages: data reduction, data display (within- and cross-case displays) and conclusions. Due to the exploratory nature of the study, in-vivo codes were mainly used, rather than pre-selected codes drawn from literature. The codes of eleven interviews were arranged in 29 within-case displays (both networks and matrices). These were then pooled in the form of one cross-case display (see Appendix B). The discussion of the exploratory findings is incorporated into the development of the conceptual model which follows.
CONCEPTUAL MODEL

Decision-Making and Export Performance

In recent years, organizational studies have widely accepted the importance of studying customer performance separately from economic performance (Leonidou, Palihawadana, and Theodosiou 2011). A key marketing goal is to establish satisfied and loyal customers (Diamantopoulos et al. 2014), and companies that rely solely on measuring economic success as an indicator of business success, while failing to assess the long-term benefits of various strategies on alternative performance indicators, such as customer satisfaction, flexibility or quality, risk not meeting that goal. The use of economic and non-economic metrics can portray a more balanced picture of a firm’s overall performance. However, in reality drivers of customer and economic performance might differ, as decisions that satisfy customers (e.g. implementing price discounts) do not necessarily lead to growth. Thus, in the current study, export performance is viewed as two distinct outcomes, including both customer performance and economic performance. Customer performance relates to a firm’s ability to satisfy and retain customers (Leonidou, Palihawadana, and Theodosiou 2011), whereas economic performance refers to a firm’s sales (Subrahmanya 2013) and profit (Brahim and Arab 2011) indicators.

Theoretically, export planning aims to deliver customer value (O’Cass, Ngo, and Siahtiri 2012), but in practice it often leads to decreased customer satisfaction (Jayachandran, Hewett, and Kaufman 2004), since it slows down decision-making regarding customers’ requests, as the process of obtaining detailed information and evaluation of different options is time-consuming (Atuahene-Gima and Murray 2004). In day-to-day export operations, customers often expect quick solutions to their immediate problems. For example, a manager from Company 4 explained that ‘some of our customers overseas give us a maximum three days to
quote, so if it comes on a Friday it will have to be back by Tuesday’. In this or similar cases, if decisions are not made rapidly enough, customers could be discouraged from dealing with the exporter in the future (Company 4, Company 9), leading to a loss of customer retention.

Planning is proven to be less risky for the company, as it helps to eliminate potential mistakes; however, sometimes in order to ‘win’ a customer and provide quick solutions, companies should allow a certain degree of risk in their decision-making. At the same time, constantly screening export customer needs can be harmful to the company (Lengler, Sousa, and Marques 2013). Customer preferences often change rapidly, which warrants timely reactions based on current conditions; in turn, extensive (time-consuming) market analysis, followed by a formalized and sequential planning process, implies that by the time decisions are implemented they could be based on outdated data. Accordingly:

Hypothesis 1: Export planning is negatively related to export customer performance.

On the other hand, export planning is more likely to be beneficial to export economic performance. Formalized planning helps firms successfully communicate their initial intentions to employees, and unites those employees in terms of pursuing the same economic goal (Dibrell, Down, and Bull 2007). The formality of the planning process encourages the setting of clear objectives and defining positions of responsibility. It reminds the employees ‘what we are good at, what our strengths and weaknesses are, what on that basis should our target markets be depending on a product’ (Company 5). This helps to make the goal achievement process more transparent and focused (Shoham 2002). As decisions are based on detailed analysis and different options are carefully evaluated, managers can make sure that potentially the most profitable solution is chosen. Export planning also entails appropriate resource allocation (Cavusgil and Zou 1994), with resources being placed where they are most needed (Slotegraaf and Dickson 2004; Taghian 2010). The nature of the planning
process ensures that resources are used as effectively as possible due to the optimal option having been chosen. Planning, therefore, facilitates the long-term goal of achieving a sustainable economic position in the market (Taghian 2010). Based on the above:

Hypothesis 2: Export planning is positively related to export economic performance.

Increased market turbulence and a high degree of change in export markets are currently associated with customer dynamism (Boso, Cadogan, and Story 2013). Hmieleski, Corbett, and Baron (2013) argue that improvisation (as reflected in spontaneity, creativity and action-orientation) may be key to firms surviving, and moreover, thriving in dynamic industries. Spontaneity allows actions to be undertaken quickly or even immediately, which can be crucial when handling customer requests (Barrett 1998). In order to keep customers happy, companies sometimes have to offer an instant solution to their problem; as a manager from Company 4 said ‘if it [decision] needs to be implemented straight away then it is implemented straight away’.

Meanwhile, the creative element of improvisation (the ‘out of the box’ approach) enables an export function to come up with solutions to unusual customer problems (Brown and Eisenhardt 1998), and enhances product differentiation, which can result in increased customer loyalty and satisfaction (Im and Workman 2004). Creativity, as a result, has been shown to benefit learning and understanding about the market in which the firm operates (Menon et al. 1999), which should enable exporters to respond appropriately to customer needs, requirements and requests.

Action-orientation enables the export function to stay focused on the customer problem at hand, and design new customer-orientated decision patterns without prior in-depth analysis
(Miner, Bassoff, and Moorman 2001), as it is associated with persistence and not being
distracted (Hmieleski and Corbett 2006). Thus, action-orientation ensures that decisions are
acted-upon. In summary:

Hypothesis 3: (a) Spontaneity, (b) creativity and (c) action-orientation are positively
related to export customer performance.

According to Nemkova, Souchon, and Hughes (2012), using improvisation gives a firm a
competitive advantage, since it makes it difficult for competitors to anticipate what the firm is
going to do next; and competitive advantage is at the core of meeting export sales targets.
Hmieleski, Corbett, and Baron (2013) explain that improvisation, as the execution of novel
decisions in the moment, enables the firm to capitalize on current market opportunities, thus
generating economic returns from export activities at a faster pace. Furthermore,
improvisation is cost-effective, since it makes use of currently available resources (Cunha,
Cunha, and Kamoche 1999), and thus confers the potential for increased profitability. Indeed,
some respondents in the exploratory study (e.g. Company 5 and Company 11) viewed
spontaneous decision-making as a key driver of sales growth and profitability, as it helps
them to be ‘ahead of the competitors’. As such, we expect spontaneity to confer economic
performance benefits to exporters.

In relation to creativity, it can be expected that it reduces company costs. Indeed, some
scholars (e.g. Menon et al. 1999; Weinzimmer et al. 2011) find a positive effect from
creativity on competitive differentiation, sales growth and profitability. As obtaining
additional information might be expensive, creativity (e.g. brainstorming) can substitute for a
lack of information and save the export function from spending additional financial resources
(Cunha, Cunha, and Kamoche 1999). An export manager from Company 7 explained that ‘we
have meetings every week and then we have some notes and then we work from those notes, we don’t have actually a schedule how we are going to go forward as such’. One of the decisions that followed these brainstorming sessions was the introduction of a new and cheaper range of products the following year, which enabled the company to save money. Creativity also plays a crucial role in solving product-related problems, by providing divergent ideas, and makes economic success more probable (Im and Workman 2004).

Action-orientation, meanwhile, provides focus for export managers in taking actions, and ensures that export issues are dealt with. Firms that are action-orientated are able to transform existing problems into opportunities (Miner, Bassoff, and Moorman 2001), ensuring that the export function does not drift away from its focus on economic objectives, and that the task is followed through to completion (Diefendorff et al. 2000). For example, a manager from Company 9 said that his main task ‘is to keep my focus, if I bring two and a half thousand pounds revenue a day from somewhere, doesn’t matter where, I’ve done my part’. Thus, action-orientated managers exhibit increased efficiency and effectiveness in their goal achievement activities (Kuhl 1994). Based on the above:

Hypothesis 4: (a) Spontaneity, (b) creativity and (c) action-orientation are positively related to export economic performance.

**Decision-Making and Responsiveness**

Nowadays, companies need to make sure that they are able to make timely decisions in response to external opportunities and threats, in order to survive and prosper in the international environment (e.g. Martens, Matthyssens, and Vandenbempt 2012). This should help them sustain a competitive advantage and ensure long-term success in the international marketplace. In line with this, the results of the preliminary qualitative study showed that the
relationship between export decision-making (planning and improvisation) and export performance can be mediated by responsiveness, which is defined as quick adaptation to changes in the environment (Homburg, Grozdanović, and Klarmann 2007).

Sharfman and Dean (1997) argue that the decision-making process is key to being able to respond to changes in the environment, and in turn greater flexibility in the decision-making process is associated with improvisation (Vera and Crossan 2005). Cunha, Cunha, and Kamoche (1999) and Miner, Bassoff, and Moorman (2001) clearly distinguish improvisation from other responses to unplanned events available to exporters (i.e. innovation, adaptation, learning), explaining that improvisation encompasses temporal elements and the convergence of decision-making and actioning of the decision. Spur of the moment activities and spontaneous actions are vital in instances where an immediate response to an opportunity or aggravated problem is required (Majchrzak, Jarvenpaa, and Hollingshead 2007).

Though improvisational decision-making is not only spontaneous, it is also discovery driven (creative), aiming to explore unexpected opportunities or deal with unforeseen threats (Barrett 1998). The ability to generate creative ideas is crucial to an effective response to changing market needs (Im and Workman 2004). To respond to external opportunities and threats, managers are expected to make decisions that are unusual, innovative and different from the norm (Sharfman and Dean 1997). As a manager from Company 2 emphasized, ‘there is not a procedure to follow, which means it can be different each time, but it does mean that we can respond quickly’.

Meanwhile, managers are facing increased information overload (Lisboa, Sharmeas, and Lages 2013), which can create confusion during the decision-making process. Their ability to focus on the problem at hand and not be distracted from goal-relevant thoughts becomes
critical in this context. Improvisation, as reflected in action-orientation, ought to help managers focus on what is currently relevant, saving time and resulting in a more speedy response. In sum, if the export function is distracted, it can miss market opportunities that require rapid responses (Company 9 and Company 10), thus sacrificing export responsiveness. By emphasizing creativity, spontaneity and action-orientation in decision-making, exporters can in all likelihood boost their responsiveness to events. Thus:

Hypothesis 5: (a) Spontaneity, (b) creativity and (c) action-orientation are positively related to the responsiveness of the export function.

By its very nature, responsiveness implies that an ability to make fast decisions should be embedded in the decision-making process. Consequently, formalized planning seems to be incongruent with responsiveness, as the need for quick responses to environmental changes is in conflict with the time-consuming nature of planning (Sousa, Ruzo, and Losada 2010). In this case, even if the exporter recognizes the need to make amendments to a planning process, they may not be able to do so effectively as there is not enough time (Wiltbank et al. 2006).

The manager from Company 1 explained that they had carefully developed a detailed export plan for the US market. However, when they ‘were not actually able to execute it’ (due to unforeseen circumstances), they could not adapt it promptly enough, and as a result lost their presence in the States. This indicates that a slow response to market changes, with the ‘right’ action being implemented at the ‘wrong’ time, is likely to result in lost opportunities (Barrett 1998). Moreover, the planning process creates a degree of inflexibility in terms of adapting and responding to changes in the environment, which decreases responsiveness (Souchon et al. 2004). Based on the above:
Hypothesis 6: Export planning is negatively related to the responsiveness of the export function.

Customer satisfaction and retention is largely dependent on the effort a company makes to keep its customers happy. Responsiveness reflects an ability to react quickly to changes in the market and implies that an improvement in the firm’s market offering as a result is sought (Souchon et al. 2004). Such responsiveness should then have positive connotations for customer performance. Indeed, companies that are able to respond quickly to environmental changes tend to have a good understanding of their customers’ preferences, and as a result are able to deal better with customer requests (Jayachandran, Hewett, and Kaufman 2004). This, in turn, increases customer satisfaction and retention. In other words, more responsive companies are likely to have a loyal and sustainable customer base (Sousa, Ruzo, and Losada 2010). Thus, it follows that:

Hypothesis 7: Export responsiveness is positively related to export customer performance.

A similar logic applies to economic performance. If the firm is able to adapt to the fast and often unforeseen changes taking place in the environment it operates in, it can, as a result, experience higher economic rewards (Hmieleski, Corbett, and Baron 2013). Changes in export markets, be they regulatory, technological or in regard to competitor actions and so forth, are ultimately beyond the control of managers, who need to be able to adapt quickly to such market changes in order to ensure long-term economic success (Lyus, Rogers, and Simms 2011). Such timely responses to environmental challenges and opportunities are often associated with positive performance outcomes. For example, Cadogan et al. (2012) claim that if a company has a high level of export responsiveness, it can better achieve its short-term and long-term objectives (sales, market share and profit). A suboptimal but timely response
can actually be more profitable in the long-term than a delayed correct response. Indeed, longer delays in responding to environmental changes in the export market may cause a firm to lose local presence, resulting in financial losses. This happened to Company 8 in Australia, whose agent warned them that ‘we’ve got real problems here, because all buyers want the products from China [rather than the UK], so you’ve got to reduce your price’. However, they were not able to do it in a timely manner and consequently lost their presence in Australia. Based on the above:

Hypothesis 8: Export responsiveness is positively related to export economic performance.

**Moderating Role of Improvisation**

There is increasing academic interest in combining decision-making approaches. A number of scholars believe that the ability to make decisions in different ways renders a firm more sustainable in a variety of business situations and throughout environmental changes (Hart and Banbury 1994; Sharfman and Dean 1997; Slater, Olson, and Hult 2006). Planning being traditionally a rigid process can eventually restrict decision variability. Potentially successful decisions can be withdrawn from further consideration due to their risky (unreliable) nature, whereas decisions with the most predictable (calculable) outcomes are accepted (Barrett 1998; Ford, Sharfman, and Dean 2008). While formalized planning is criticized for its rigidity, improvisation may be viewed as chaotic, and hence, a potential source of risk for the company. According to a manager from Company 9, ‘it can give you five steps ahead, but equally you can make great mistakes and they take you ten steps back’.

On the other hand, if managers make sure that the planning process gives an organization a long-term direction and focus, but at the same time allows some room for improvisation when dealing with customers directly, it can improve export customer performance. In that case,
spontaneity ensures that the export function undertakes actions without substantial delays, in order to meet these needs (Nemkova, Souchon, and Hughes 2012). Creativity in the planning process helps firms to deal with unusual customer requests and avoid routinization, while action-orientation leads to the needs and preferences of customers being considered in the planning process (O’Cass, Ngo, and Siahtiri 2012), with a bias toward enactment over caution or stagnation. Therefore, we suggest that creative, spontaneous and acted-upon deviations within the planning process will lead to greater customer satisfaction and loyalty. Thus:

Hypothesis 9: (a) Spontaneity, (b) creativity and (c) action-orientation positively moderate the relationship between export planning and export customer performance.

According to the results of the exploratory study, the economic benefits of exporting for the company may increase when both planning and improvisation are used together, in other words when ‘there’s a mixture’ (Company 3). For instance, a manager from Company 5 explained that ‘my role is twofold, it’s to find new markets for existing products and it’s trying to find new products as well’. This company use planning to proactively find new markets and deal with established activities, but rely on more spontaneous, creative and action-orientated decision-making to react to market opportunities (e.g. they spontaneously bought a competitor who was producing an innovative product). This decision-making approach has led to company growth and export sales growth in a new market. Moreover, it makes conceptual sense that improvising within an existing planning process generates the necessary flexibility needed to overcome inaction or inertia that can occur in decision-making if a purely planned approach is followed. Indeed, some researchers argue that companies that are able to combine deliberate (e.g. planning) and emergent (e.g. improvisation) decision-making effectively tend to make better choices when opportunities arise, and enjoy higher performance levels (Sharfman and Dean 1997; Brown and Eisenhardt 1998; Slater, Olson, and Hult 2006).
Building on this, action-orientated managers are able to dedicate available resources to the task at hand (Diefendorff et al. 2000), ensuring that planned activities are carried out as efficiently as possible. Simply put, export planning likely provides a platform for developing the optimum strategy for being competitive and achieving economic returns. However, in combination with a willingness to improvise around that process, a combined approach can enable firms to generate performance returns from export activities more rapidly and effectively. Thus, it is proposed that:

Hypothesis 10: (a) Spontaneity, (b) creativity and (c) action-orientation positively moderate the relationship between export planning and export economic performance.

Formalized export planning in general is argued to be a barrier to export responsiveness (Souchon et al. 2004; Wiltbank et al. 2006). However, improvisation can facilitate adaptation to environmental changes through the adjustment of existing planning structures to new problems and occurrences (Miner, Bassoff, and Moorman 2001). Planning provides additional information about the environment (Bailey, Johnson, and Daniels 2000), while spontaneous, creative and action-orientated decision-making results in quick reactions to environmental changes and greater variability of responses (Ford, Sharfman, and Dean 2008; Sharfman and Dean 1997). This allows the organization to simultaneously create clear directions ‘for future growth’ (Company 11), detect when changes occur in the market and respond quicker to the external environment and unanticipated situations (Eisenhardt, Furr, and Bingham 2010).

On the other hand, the ability to identify novel solutions to emergent problems means that a useful solution to the current situation may deviate from the agreed way of doing things and include new inputs to be acted upon. As planning does not encompass flexible and creative
decision-making (Slotegraaf and Dickson 2004), creativity ensures that the decision-making process takes into account new, emergent requirements. Furthermore, as planning can lead to delays in market response, due to time-consuming additional resource requirements (Atuahene-Gima and Murray 2004), action-orientation ensures that resources at hand are flexibly allocated, in order to achieve pre-specified goals (Kuhl 1994), thus saving time and ensuring prompt responses. Thus, it is proposed that:

Hypothesis 11: (a) Spontaneity, (b) creativity and (c) action-orientation positively moderate the relationship between export planning and export responsiveness.

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METHODOLOGY OF STUDY 2

The second study was designed to test the hypotheses presented above. A cross-sectional design, using self-reported data from manufacturing firms engaged in export marketing, was adopted to allow for greater variability in export decision-making approaches and to reduce potential sampling bias. The unit of analysis for this study was the export function. The British Exporters database, containing 8000 companies, was used as a sample frame for the pilot studies and main data collection. 470 companies were used for both pilot studies (response rates were 10% and 12.5% respectively), and 1530 companies were selected for the final sample. A wide variety of export manufacturers were contacted regarding their size and the industry of operation. Previous research suggests that both large and small-medium companies utilize both planning and improvisation (Nemkova, Souchon, and Hughes 2012; O’Cass, Ngo, and Siahtiri 2012). Sampled firms were contacted prior to the survey to ensure their eligibility. However, 320 firms were found to be ineligible during the pre-notification
stage. These firms were either no longer exporting (40%), were service companies (27.5%) or their contact information was incorrect in the database (32.5%). Based on Dillman’s (2007) recommendations, an online questionnaire was sent to the manager responsible for export marketing decisions in the firm, with four waves of follow-ups. The final sample comprised of 200 respondents, providing a usable response rate of 16.5%, which is on a par with other recent export marketing studies (Theodosiou and Katsikea 2013).

The time trend method was used to assess non-response bias (Armstrong and Overton 1977). T-test analysis was performed to compare the first 50 respondents (‘early respondents’) to the last 50 respondents (‘late respondents’). The results revealed no statistical differences between late and early respondents (results of t-test were non-significant). This suggested that non-response bias was not likely to be a problem for the current study.

Existing measures were used for most of the constructs in the study, and all were adapted to the exporting context. Planning measures were adapted from Bailey, Johnson, and Daniels (2000). Improvisation was operationalized as three constructs: spontaneity, creativity and action-orientation. The measures of spontaneity were developed from Moorman and Miner (1998) and Vera and Crossan (2005). The items for creativity were developed from Hmieleski and Corbett (2006). Action-orientation items were based on the measures proposed by Diefendorff et al. (2000) and Hmieleski and Corbett (2006). The responsiveness construct was measured based on the work of Souchon et al. (2004). We opted for two measures of export performance: customer performance and economic performance. In so doing, we follow Hughes and Morgan’s (2008) operationalization of performance as customer/market and economic performance, as well as Hult et al.’s (2008) recommendation to include both objective (e.g. export sales revenue, export profit growth) and subjective (e.g. export customer satisfaction) measures. The items for export customer performance and export
economic performance were adapted from Hultman, Robson, and Katsikeas (2009), Leonidou, Palihawadana, and Theodosiou (2011) and Shilke, Reimann, and Thomas (2009). Technological turbulence and competitive intensity were also measured (adapted from Kaleka and Berthon 2006) and included as control variables in the data analysis.

Measure development was undertaken via Confirmatory Factor Analysis using Lisrel 8.71 software, followed by structural equation modeling, again using Lisrel 8.71. Moderator analysis was conducted by creating interaction terms between planning and spontaneity, creativity and action-orientation respectively. The interaction terms were then orthogonalized using a residual-centering approach, in order to minimize the risk of multicollinearity.

In terms of statistical remedies to minimize potential common method bias, we followed four procedures. Firstly, as per Podsakoff et al. (2003), we performed Harman’s single-factor test. No single factor was uncovered. However, this method is not without its limitations, so we supplemented it with two additional tests. In particular, we collected objective data on the total number of employees for 49 firms in the sample as a second test. The correlation between the objective-total number of employees and self-reported total number of employees is .81 (p=.000). This is in line with Robson, Katsikeas and Bello (2008) approach and one of the methods advocated by Podsakoff et al. (2003).

Thirdly, we directly controlled for the most probable source of bias, namely social desirability, which is defined as “the need for social approval and acceptance and the belief that it can be attained by means of culturally acceptable and appropriate behaviors” (Crowne and Marlowe 1964, p. 109). Five established items were included in the questionnaire, and a “directly-measured latent methods single-factor approach” (Podsakoff et al. 2003) was used to test for the likelihood of social desirability causing common method bias. The loading of
main construct items onto the social desirability scale led to a serious deterioration in model fit, indicating that social desirability is unlikely to cause common method bias (see Table 1).

Fourthly, we conducted a marker variable test for possible common method bias (Lindell and Whitney 2001). Following accepted procedures, the chosen marker variable should not be theoretically related or correlated to any other items measured. We use social desirability once more, as it is theoretically unrelated to any construct in the model, and all correlations were statistically non-significant ($p > .05$). Although the marker test normally uses correlations, we use this technique in line with Hughes et al. (2014), and focus on how the covariance between variables is affected by the common method, as this is what underlies analysis within LISREL when using maximum likelihood estimation. Following Hughes et al. (2014) and Lindell and Whitney (2001), we respecified the CFA-ALL model with a CMV-adjusted matrix. The results for the original CFA were as follows: $\chi^2 = 691.93$; d.f. = 524; RMSEA=0.04; CFI=0.98; NNFI=0.97; GFI=0.83 (see Table 1). The results for the CMV-adjusted CFA were: $\chi^2 = 701.77$; d.f. = 524; RMSEA = 0.04; CFI = 0.97; NNFI = 0.97; GFI = 0.83. The results indicated non-significant changes in the measurement model, as the substitution did not significantly deteriorate fit along any of the indices noted: ($\Delta \chi^2 = 9.84$ [increase]; $\Delta$df = 0; $\Delta$RMSEA = 0.00 [increase]; $\Delta$CFI = 0.01, $\Delta$NNFI = 0.01, $\Delta$GFI = 0.00 [decrease]). If common method bias were a problem, then there would be clear deteriorations in model fit when the CMV-adjusted covariance matrix is used. This is not the case. Further examination of the standardized factor loadings, error variances and resulting reliability and variance extracted scores for the constructs also reveals no significant changes or deviations in scores. Taken together, the results of all of the tests conducted indicate that common method bias does not appear to be a threat within our data, although it cannot be ruled out completely, and
is unlikely to explain any of the results of our hypothesis tests (Hughes et al. 2014; Podsakoff et al. 2003).

RESULTS OF STUDY 2

The final overall CFA provided a good fit to the data (see Table 1), with all factor loadings being high (see Table 2), providing evidence of good internal consistency (Anderson and Gerbing 1988). Composite reliability and average variance extracted (AVEs) were above threshold levels. Discriminant validity was assessed by comparing the AVEs with squared correlations (Fornell and Larcker 1981). All the AVEs estimated were higher than squared correlations and provide good evidence of discriminant validity (see Table 3).

INSERT TABLE 1, TABLE 2 & TABLE 3 ABOUT HERE

With the psychometric properties of the measures established, a structural equation model was run to test the hypotheses. With regards to moderating effects specifically, a 3-stage hierarchical procedure was used, whereby initially only main effects were entered as independent variables, followed by equations, including the moderator variables (i.e. creativity, spontaneity and action-orientation). Finally, a third equation was run with interaction terms. The difference in model fit was assessed at each stage from one equation to the next, and given improvement in fit statistics, the final model (with interaction terms) was retained. The results of the structural model indicated a good fit to the data ($\chi^2 = 86.153$, d.f.= 63, RMSEA=0.04, CFI=0.99, NNFI=0.97, GFI=0.95). Percentage of variance explained was, respectively, 0.405 for responsiveness, 0.232 for customer performance, and 0.442 for economic performance. Based on the t-values and coefficients associated with each relationship (see Table 4), H1 and H2 are supported. Specifically, export planning is
negatively related to export customer performance ($\gamma = -0.18, p < 0.05$) and positively related to export economic performance ($\gamma = 0.23, p < 0.05$). H3 is partially supported. No significant relationship between spontaneity and creativity and export customer performance was uncovered ($\gamma = -0.09, p > 0.05; \gamma = 0.11, p > 0.05$) (H3a and H3b). However, there is a strong positive relationship between action-orientation and export customer performance ($\gamma = 0.29, p < 0.05$) (H3c). No support was found for H4. No significant relationship was found between spontaneity, creativity, action-orientation and economic performance ($\gamma = -0.07, p > 0.05; \gamma = 0.19, p > 0.05; \gamma = -0.01, p > 0.05$). The results provide support for H5. Spontaneity, creativity and action-orientation are positively related to export responsiveness ($\gamma = 0.16, p < 0.05; \gamma = 0.16, p < 0.05; \gamma = 0.26, p < 0.05$).

INSERT TABLE 4 ABOUT HERE

No support was found for H6. The results contradict the hypothesized negative relationship between export planning and export responsiveness, as the relationship is positive ($\gamma = 0.17, p < 0.05$). Regarding the relationship between export responsiveness and export customer performance, the results provide support for a positive relationship ($\beta = 0.22, p < 0.05$) (H7). No relationship is found between responsiveness and economic performance ($\beta = -0.04, p > 0.05$) (H8).

Hypothesis H9 is not supported. No support was found for the moderating effects of spontaneity, creativity and action-orientation ($\gamma = 0.04, p > 0.05; \gamma = 0.01, p > 0.05; \gamma = 0.10, p > 0.05$). The results show no support for H10. The relationship between export planning and export economic performance was found to be negatively rather than positively moderated by spontaneity ($\gamma = -0.15, p < 0.05$), as was hypothesized (H10a). A summary of the results, displayed in Fig. 2, suggests that the planning–economic performance relationship is stronger
and more positive at low levels of spontaneity. We conclude that planning is a less effective predictor of economic performance when spontaneity is higher.

No support was found for creativity and action-orientation ($\gamma = 0.06, p > 0.05; \gamma = -0.04, p > 0.05$) (H10b and H10c). The results show partial support for H11. The relationship between export planning and export responsiveness is contingent on levels of creativity ($\gamma = -0.23, p < 0.05$) (H11b) and action-orientation ($\gamma = 0.17, p < 0.05$) (H11c). Figures 3 and 4 provide interaction plots of the results to aid interpretation. As illustrated in Fig. 3, at high levels of creativity the relationship between planning and export responsiveness is negative, whereas at lower levels of creativity this relationship becomes positive. On the other hand, the planning–export responsiveness relationship is positive at high levels of action-orientation and negative at low levels of action-orientation (Fig. 4). No support was found for spontaneity ($\gamma = -0.04, p > 0.05$) (H11a).

STUDY 3

The results of the quantitative research demonstrated that the proposed conceptual model is partially supported. In order to gain some insights into the uncovered relationships and provide directions for further research, a post-hoc qualitative study was undertaken. We approached thirteen export managers to ask them to explain some of the findings, based on their export experience. As in Study 1, the information was collected from a wide variety of
manufacturing companies in the UK (in terms of size, number of employees, industry operated in, years of exporting and countries exported to) (see Appendix C).

In relation to hypotheses H1 and H2, the managers explained that in order to be successful, export decisions have to be based on customer feedback (Company 2) and formalized planning can be too rigid to incorporate such feedback (Company 3). Relying on formalized planning “will have a tendency to make a customer feel like a number... a company which works in that way has no competitive advantage”, as it lacks flexibility in dealing with customer matters and “any plan falls down where the customer has a sudden change of direction” (Company 13). At the same time, formalized planning can improve economic performance (e.g. a decision to increase the price of export products by 3% every year), as it helps the company to “make more money” (Company 5); however, some of the planned decisions might “upset the customers” (Company 3). The manager from Company 8 described the negative effects of planning as such; “I think when you start doing too much of formal planning, you can spend so much time looking at the figures relating to the market and trying to ensure that you make the right decision, that you actually forget about focusing on the customers and looking after them”.

The managers clarified why there is potentially no direct positive relationship between spontaneity and creativity and both customer performance and economic performance (H3a & H3b; H4a & H4b). It was suggested that spontaneous decisions, on the one hand, can be very risky because “there is always a danger to get it wrong” (Company 11) and “just making quick spontaneous decisions can actually wipe the market off”” (Company 1). Spontaneous decisions are less ‘safe’ in comparison with planned ones (Company 5). On the other hand, they can be very successful. The manager from Company 4 stated that “if you are in front of
the customer, they expect you to have a certain amount of power and decision-making capability [to make a spontaneous decision]."

In relation to creative decisions, it was explained that “inventiveness always takes time to be accepted on the market place... inventiveness can be a turnoff to customers till somebody comes along and proves to them that things can be better” (Company 1). If the export function is very creative, it is not necessarily seen as having positive implications, as the manager of Company 13 stated; “if somebody is very good at creative and novel thinking, there is a danger they are constantly changing things”. The manager of Company 4 expanded on this, stating that “if the customer is relatively happy, he is not going to want it to change”.

Details were also provided on the relationship between action orientation and export performance. The manager from Company 1 explained that in their export operations, action orientation can improve customer satisfaction (H3c), but does not necessarily lead to better financial returns, saying (H4c) that “we will not leave the job unfinished even if it costs money in the end to fulfill the contract... even if you made a mistake, it is how well you resolve a problem which then lets a customer come back to you”.

The managers’ explanations shed some light on the nature of the relationship between planning and responsiveness, as the hypothesis regarding the negative relationship between these constructs was not supported (H6). The managers viewed responsiveness as the core of a sustainable business in the current international environment. Managers in general agreed that when “an opportunity arises, you have to react quickly to it...you don’t have time to go through the process of evaluation and looking at the figures” (Company 7). Nevertheless, in-depth interviews confirmed that there are major differences between a ‘plan’ (as a document) and the ‘planning process’, where the former can have a negative impact on responsiveness.
At the same time, depending on the nature of the planning, it does not necessarily negatively influence the ability to adapt quickly to environmental changes. The results show that if planning is “constantly evolving” and “absorbs changes”, then it allows for timely adaption to external conditions (Company 8 and Company 12).

Finally, some clarification on the moderating relationships was provided (H9, H10 & H11). The managers explained that there has to be a certain framework upon which spontaneous and creative decisions take place. For example, the manager from Company 9 stated that “you can only be spontaneous if you’ve got a model that’s already embedded within the company”, otherwise “you end up going in wrong directions and doing crazy things” according to the manager from Company 7. Even if managers see that as co-existence of both decision-making approaches (planning and improvisation), the decision-making process of these companies mostly relies on improvisation with “some logic behind” (Company 10). Nevertheless, it is possible (and often desirable) to apply these approaches in sequence, within the same export function (Company 11). For example, the manager from Company 9 suggested that spontaneity and creativity can be used after planning, as they “will allow you to modify those plans to meet market demands or changes”.

To summarize, the main findings of the post-hoc qualitative research suggested at least two potential avenues for future research. Firstly, according to the empirical evidence presented above, managers seem to believe that an excessive focus on planning or improvisation can have negative implications for companies. Therefore, researchers can focus on developing propositions about quadratic rather than linear relationships between the facets of improvisation and export performance. Secondly, more detailed attention should be paid to the combination of decision-making approaches. It can be the case that an export function can
benefit more when planning and improvisation are used in sequence, rather than at the same time. However, both these propositions require further investigation.

**DISCUSSION AND CONCLUSIONS**

This study provides new insights into the interplay between export planning and export improvisation. Following a three-phase research process, we initially concluded that improvisation is very much relevant to exporting, and is a prevalent method of decision-making among UK export firms. Secondly, planning and improvisation have different effects on different performance types, while both approaches give rise to improved responsiveness. Thirdly, aspects of improvisation do exert an influence on the relationship between planning and export outcomes. Specifically, spontaneity acts as a negative moderator of the planning–economic performance relationship, creativity acts as a negative moderator of the planning–responsiveness relationship and action-orientation also acts as a positive moderator of the planning–responsiveness relationship.

**Implications for Theory**

The current study enhances knowledge on effective export decision-making. Although past research has considered substantive export decision-making in detail, *how* successful export decisions are made has mostly been overlooked. Research into this area contributes to decision theory, which traditionally examined decision-making from two distinct angles: normative and descriptive. Decision theory is known to span multiple disciplines, including economics, psychology, management and marketing. However, in the marketing field, scholars have previously paid little attention to the descriptive approach in favour of the development of normative models. The current research is one of the first attempts to present a more balanced view, and combine both normative and descriptive perspectives in the
exporting context, whereby planning and improvisation are viewed as representative of these perspectives. The results of the study show that different approaches are not easily followed simultaneously, and their interplay appears to be quite complex.

The results also contribute to improvisation research, as the theoretical position on dimensions of improvisation needs to be rethought. In previous studies, organizational improvisation is often conceptualized as a multi-dimensional construct (Vera and Crossan 2004), but most researchers measure it as uni-dimensional or higher-order factor (Moorman and Miner 1998). A three-dimensional structure of improvisation was proposed, including spontaneity, creativity and action-orientation. While these different dimensions of improvisation were hypothesized as having the same outcomes, analysis showed that they do not always lead to the same outcomes in the export context. Despite the fact that spontaneity and creativity result in positive outcomes for the export function (increased responsiveness), their simultaneous combination with planning does not lead to additional benefits for the company. Planning allows for multiple options to be evaluated and optimal choices to be made, which leads to positive economic outcomes (Bailey, Garry, and Daniels 2000). On the other hand, spontaneity occurs without such order. It can bring a degree of randomness and chaos into the rational planning decision-making process and lower the company’s protection from mistakes (Barrett 1998). It can be risky, especially for long-term financially driven decisions, and the occasional mistake can be very ‘expensive’ for the export function.

Creative behavior, similar to spontaneity, favors chaos when there is no structure imposed on the process (for example, brainstorming). In other words, if spontaneity and creativity favor uncertainty, planning aims to reduce uncertainty (e.g. Cavusgil and Zou 1994).

The contention that both export planning and improvisation can be employed simultaneously for additional performance benefits raises an important theoretical question that remains
unanswered. Specifically, how should they be employed together? Hart and Banbury (1994) find that firms which simultaneously use multiple modes of strategy-making outperform those that follow single modes, such as planning on its own, but do not explicate how, other than viewing it as a capability that requires development. Rather, this problem speaks to ambidexterity theory. According to Kouropalatis, Hughes, and Morgan (2012), ambidexterity encapsulates dualities of opposing elements that can be pursued simultaneously.

Ambidexterity provides an explanatory mechanism as to why export planning and improvisation can be pursued simultaneously, and elements of research in this domain could begin to provide an explanation to the ‘how’ question as well. For example, decentralized decision-making, informalized work procedures and effective implementation of the strategy could be relevant (Kouropalatis, Hughes, and Morgan 2012). This strand of theory and literature typically focuses on innovation, and has not considered issues of planning and improvisation. Accordingly, research is needed to bring ambidexterity theory into studies of planning and improvisation to explain how export managers can develop capabilities in both, and to identify the antecedent factors that enable both to be pursued simultaneously.

Traditionally in international marketing and management literature, there tends to be a separation between strategy formation (decision-making) and implementation (Hart and Banbury 1994), such that research tends to concentrate on one over the other. Action-orientation is, in essence, the implementation aspect of improvisation for actioning and seeing through export decisions. The results indicate that it is beneficial to both customer performance and economic performance, whilst also conferring moderation benefits to planning for improved responsiveness. This is further evidence that, hereafter, theory and research in decision-making must not ignore the implementation or action dimension, but incorporate it into export decision-making models.
**Implications for Managers**

From a managerial standpoint, the results show there is no one ‘best way’ to make effective export decisions, as individually export planning and the facets of export improvisation can improve performance, but also detract from it. Export managers focused on economic outcomes clearly need to consider following a planned approach to decision-making, but be wary of introducing excessive spontaneity into this process, due to its negative moderation effects. The downside to export planning is its adverse effects on export customer performance. However, we suggest that this is mitigated by the improved responsiveness that planning brings, and the fact that such improved responsiveness leads to better customer performance. This mediatory mechanism counterbalances worries related to customer satisfaction, retention and reputation.

Although planning restricts variations and unpredictability, the benefits include contingency plans that arise from developing multiple strategic alternatives during the export planning process. What export managers may lack in terms of experience or knowledge on the predicted paths of export markets, can be made up for by having an improved capacity to respond and adapt to market changes or shifts that arises from having a thorough and formalized export planning process. Furthermore, managers must recognize that there is a clear difference between a ‘plan’ as a document and the ‘planning process’ when making decisions, and these should not be viewed interchangeably. Export planning should be more than just a written document, in order for it to be of real value to the company. A restrictive written document is in danger of becoming irrelevant within the time it takes to formally write it up.

Export managers focused on improvisation should carefully consider the fit between this decision-making method and their predominant strategic objectives. Firms focused on
customer satisfaction and retention clearly benefit from adopting action-orientation, and all facets of improvisation lead to improved responsiveness, which itself improves customer performance. However, from an economic standpoint, a more formalized export planning process appears beneficial. Managers should reflect on the benefits of considering implementation concurrently during the planning process, as this should enable a greater degree of action-orientation, and an ability to react effectively to events, information or opportunities as they arise.

To maximize performance and any potential competitive advantages, export managers need to develop a balanced approach that lies somewhere between planning and improvised decision-making. Following either a planning or improvisational approach exclusively presents performance trade-offs, but this can be off-set by improved responsiveness, if both modes can be made to work simultaneously. In doing so, however, managers must place limits on creativity and spontaneity. While this risks watering down improvisation or inhibiting the autonomy of decision-makers to develop and pursue improvised decisions, the need for controls to prevent the potential performance deviations and cost burdens that creativity and spontaneity can bring about is urgent. Put simply, from a management practice perspective, it is clear that improvisation needs to be controlled and managed, such that it does not lead to chaos.

In a sense, improvisation could be viewed as a way to develop contingency plans during planning that can immediately be put into action when the situation arises. This enables managers to overcome the potential rigidity that an excessively formalized or highly developed planning process can create. For example, developing a business strategy for a given export market can take many months, but opportunities may arise in the present that could be beneficial to the company, if addressed and responded to quickly. Under formalized
planning alone, these opportunities would likely be identified but not responded to immediately, unless additional information was gathered and appropriate strategic responses were considered. Through improvisation, the company could step outside of the formalized planning process, to develop and quickly enact a creative response that allows the firm to respond faster and satisfy the market and its customers. While there may be some immediate economic fallout as a result of adopting this strategy, the longer term economic health of the firm is likely to benefit, due to the continuation of the formalized planning process in the ultimate business strategy of the firm for that export market. The caveats of the moderation results still apply however.

**Limitations and Future Research Directions**

The current study has a number of limitations. Firstly, there are always inherent risks in ascribing causal inferences based on a cross-sectional study, compared to a longitudinal study. In order to reduce these risks, post-hoc qualitative research was conducted to explain some of the unexpected results. Secondly, a single respondent approach was used to gather data for the quantitative part of this study. One can argue that the use of multiple respondents may have increased the reliability of the scales. However, the inclusion of less knowledgeable informants can decrease the accuracy of responses and indeed introduce a systematic bias into the data. Thirdly, the research was conducted on exporting companies in the UK. As the sample of the current project is limited to British exporting firms, the results should only be generalized to this context or a very similar one. Fourthly, other moderators could be considered, such as experience, various marketing resources or capabilities and so forth. While these were identified in the first research phase as possible factors, they were not considered for inclusion, as they would have introduced variables beyond the theory we employ to underpin the model, specifically decision theory. Resource-based considerations
present a useful way forward for research, in terms of understanding moderation aspects of the decision-making and performance relationship, or indeed for answering the question as to how exporters can pursue both modes simultaneously. Furthermore, we do not consider issues of market orientation (Murray, Gao, and Kotabe 2011). Market orientation could be relevant to developing an understanding of the interplay between planning and improvisation, and identifying when improvisation may be preferable. Market orientation, where firms are consumers of market information and programmed to respond to generated insights (Cadogan, Kuivalainen, and Sundqvist 2009), may provide a mechanism for focusing improvisational behavior to generate improved customer and economic outcomes.

The findings have major implications for future research directions. Researchers should not treat improvisation as a higher order construct, as this may lead to the loss of valuable information on how it actually works, and how it affects different aspects of performance. Moreover, the potential non-linear relationship between facets of export improvisation and export performance should be examined in further research. It may be that the relationship between facets of improvisation and export performance dimensions is positive up to a point. Scholars can also explore conditions under which export improvisation leads to better performance. Drawing on the equivocal interactions between planning and improvisational activities, it can be suggested that improvisation as a process leads to both positive and negative outcomes. This should encourage future research to look into conditions which make improvisation more or less successful. Past research mostly paid attention to environmental contingencies and structural contingencies (Moorman and Miner 1998). However, further research could combine a contingency theory and the resource-based theory of the firm to explore whether the success of export improvisation is contingent on the resources and capabilities available. The link between export market orientation and export decision-making should also be studied, given the extensive empirical evidence that shows that export market
orientation benefits export performance (Cadogan, Kuivalainen, and Sundqvist 2009), and the fact that responsiveness is often treated as one of three behaviors associated with market orientation. Finally, scholars must also concentrate on developing an understanding as to how planning and improvisation can be combined within firms. This is an ambidexterity problem, as managers are tasked with holding and implementing, *prima facie*, two very different approaches to decision-making. Understanding this may reveal new insights into successful performance, and how to mitigate the downsides of both planning and improvisation.
REFERENCES


Shilke, Oliver, Martin Reimann and Jacquelyn Thomas (2009), “When does international marketing standardization matter to firm performance,” *Journal of International Marketing*, 17 (4), 24-46.


FIGURE 1. Conceptual Framework

FIGURE 2. Interactive effects of planning, economic performance and spontaneity
Figure 3. Interactive effects of planning, export responsiveness and creativity

Figure 4. Interactive effects of planning, export responsiveness and action-orientation
### Table 1. CFA and SEM Results

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$(d.f.)</th>
<th>$\chi^2$/d.f.</th>
<th>Sig.</th>
<th>RMSEA</th>
<th>90% CI</th>
<th>GFI</th>
<th>NNFI</th>
<th>CFI</th>
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<tbody>
<tr>
<td>CFA 1</td>
<td>209.09 (146)</td>
<td>1.32</td>
<td>.00</td>
<td>.04</td>
<td>.03-.06</td>
<td>.90</td>
<td>.98</td>
<td>.99</td>
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<td>CFA 2</td>
<td>141.46 (125)</td>
<td>1.13</td>
<td>.15</td>
<td>.03</td>
<td>.00-.05</td>
<td>.93</td>
<td>.99</td>
<td>.99</td>
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<td>CFA-ALL</td>
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<td>1.32</td>
<td>.00</td>
<td>.04</td>
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<td>.98</td>
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<tr>
<td>CFA-HARMAN</td>
<td>4544.88 (568)</td>
<td>8.00</td>
<td>.00</td>
<td>.19</td>
<td>.18-.19</td>
<td>.43</td>
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<td>.68</td>
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<tr>
<td>CFA-Social Desirability 1</td>
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<td>.05</td>
<td>.04-.05</td>
<td>.80</td>
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<td>.05-.06</td>
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<td>CFA-Marker Variable</td>
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<td>Structural Model</td>
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<td>.04</td>
<td>.00-.06</td>
<td>.95</td>
<td>.97</td>
<td>.99</td>
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Note:
CFA1 = Confirmatory Factor Analysis containing planning, spontaneity and action-orientation
CFA2 = Confirmatory Factor Analysis containing responsiveness, customer performance, economic performance, technological turbulence and competitive turbulence
CFA-ALL = Confirmatory Factor Analysis of all measures
CFA-HARMAN = Confirmatory Factor Analysis with Common Method Variance Factor
CFA-Social Desirability 1 = Confirmatory Factor Analysis with Social Desirability scale items
CFA-Social Desirability 2 = Confirmatory Factor Analysis with all items forced to load on Social Desirability scale
MV = Marker Variable
SM = Structural Model
RMSEA = Root Mean Square Error of Approximation
90% CI = 90% Confidence Interval for RMSEA
GFI = Goodness of Fit Index
NNFI = Non-Normed Fit Index
CFI = Comparative Fit Index
### Table 2. Factor Loading and Error Variance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Completely Standardised loadings (Lambda X)</th>
<th>Error variance (Theta-Delta)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Export Planning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have well-defined planning procedures to search for solutions to exporting problems</td>
<td>0.68</td>
<td>0.54</td>
</tr>
<tr>
<td>We usually assess many alternatives when deciding on an export decision</td>
<td>0.71</td>
<td>0.50</td>
</tr>
<tr>
<td>We always evaluate potential export-market options against explicit export-market objectives</td>
<td>0.88</td>
<td>0.22</td>
</tr>
<tr>
<td>We generally develop definite and precise exporting objectives</td>
<td>0.86</td>
<td>0.26</td>
</tr>
<tr>
<td>We make our export decisions based on a systematic analysis of our business environment</td>
<td>0.79</td>
<td>0.38</td>
</tr>
<tr>
<td><strong>Export Improvisation: Spontaneity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We often take ad-libbed export actions</td>
<td>0.66</td>
<td>0.56</td>
</tr>
<tr>
<td>When necessary, we make export decisions out of the blue</td>
<td>0.81</td>
<td>0.34</td>
</tr>
<tr>
<td>In our export function, decisions are often made and implemented at the same time</td>
<td>0.73</td>
<td>0.48</td>
</tr>
<tr>
<td>We often figure out export action as we go along</td>
<td>0.68</td>
<td>0.53</td>
</tr>
<tr>
<td>When it is called for, we will make export decisions ‘on the hoof’</td>
<td>0.76</td>
<td>0.43</td>
</tr>
<tr>
<td><strong>Export Improvisation: Creativity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We always try new approaches to export problems</td>
<td>0.72</td>
<td>0.48</td>
</tr>
<tr>
<td>Our export work is very original</td>
<td>0.75</td>
<td>0.44</td>
</tr>
<tr>
<td>We are very good at finding new solutions to export problems</td>
<td>0.74</td>
<td>0.45</td>
</tr>
<tr>
<td>We often produce new ideas for exporting</td>
<td>0.79</td>
<td>0.38</td>
</tr>
<tr>
<td>In our export function, we serve as good role models for creativity</td>
<td>0.84</td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Export Improvisation: Action-orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We are very persistent in seeing through our export decisions</td>
<td>0.84</td>
<td>0.30</td>
</tr>
<tr>
<td>We do not tend to be distracted when actioning an export decision</td>
<td>0.77</td>
<td>0.41</td>
</tr>
<tr>
<td>In our export function, we are always action-orientated</td>
<td>0.66</td>
<td>0.56</td>
</tr>
<tr>
<td><strong>Export Responsiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We are able to adapt to market changes in our export market(s) quickly</td>
<td>0.90</td>
<td>0.19</td>
</tr>
<tr>
<td>We are very quick to adapt to shifts in our export market(s) (e.g. competition, technology, regulations)</td>
<td>0.91</td>
<td>0.18</td>
</tr>
<tr>
<td>Our whole export function is very adaptable to change</td>
<td>0.76</td>
<td>0.43</td>
</tr>
<tr>
<td>We are very good at adapting to change in our export market(s)</td>
<td>0.92</td>
<td>0.16</td>
</tr>
<tr>
<td>When we come up with a great solution to an export problem, we can implement it very quickly</td>
<td>0.71</td>
<td>0.49</td>
</tr>
<tr>
<td><strong>Export Customer Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export customer satisfaction</td>
<td>0.83</td>
<td>0.32</td>
</tr>
<tr>
<td>Retention of export customers</td>
<td>0.80</td>
<td>0.36</td>
</tr>
<tr>
<td>Company reputation among export customers</td>
<td>0.73</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Export Economic performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export sales volume (in unit terms)</td>
<td>0.87</td>
<td>0.25</td>
</tr>
<tr>
<td>Reaching financial goals</td>
<td>0.88</td>
<td>0.23</td>
</tr>
<tr>
<td>Export profit growth</td>
<td>0.81</td>
<td>0.34</td>
</tr>
<tr>
<td>Absolute export sales revenue</td>
<td>0.87</td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Controls:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technological turbulence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The technology in our export market(s) is changing rapidly</td>
<td>0.88</td>
<td>0.23</td>
</tr>
<tr>
<td>Technological changes provide big opportunities for our export operations</td>
<td>0.84</td>
<td>0.30</td>
</tr>
<tr>
<td>A large number of new export product ideas have been made possible through technological breakthroughs in our industry</td>
<td>0.70</td>
<td>0.51</td>
</tr>
<tr>
<td><strong>Competitive intensity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition in the majority of our export-market is cut-throat</td>
<td>0.88</td>
<td>0.25</td>
</tr>
<tr>
<td>This export market is competitive; price wars often occur</td>
<td>0.55</td>
<td>0.70</td>
</tr>
</tbody>
</table>
Table 3. Correlations, Squared Correlations and Construct Validity Assessment

<table>
<thead>
<tr>
<th>N</th>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spontaneity</td>
<td>.53</td>
<td>-.11</td>
<td>-.16</td>
<td>-.42</td>
<td>-.03</td>
<td>-.00</td>
<td>-.18</td>
<td>-.12</td>
<td>-.01</td>
</tr>
<tr>
<td>2</td>
<td>Creativity</td>
<td>.01</td>
<td>.59</td>
<td>.56</td>
<td>.50</td>
<td>.45</td>
<td>.21</td>
<td>.36</td>
<td>.34</td>
<td>.03</td>
</tr>
<tr>
<td>3</td>
<td>Action-orientation</td>
<td>.03</td>
<td>.32</td>
<td>.58</td>
<td>.62</td>
<td>.44</td>
<td>.23</td>
<td>.31</td>
<td>.12</td>
<td>.07</td>
</tr>
<tr>
<td>4</td>
<td>Planning</td>
<td>.18</td>
<td>.25</td>
<td>.38</td>
<td>.62</td>
<td>.38</td>
<td>.04</td>
<td>.31</td>
<td>.23</td>
<td>.11</td>
</tr>
<tr>
<td>5</td>
<td>Responsiveness</td>
<td>.00</td>
<td>.20</td>
<td>.19</td>
<td>.14</td>
<td>.71</td>
<td>.26</td>
<td>.27</td>
<td>.14</td>
<td>.10</td>
</tr>
<tr>
<td>6</td>
<td>Customer performance</td>
<td>.00</td>
<td>.05</td>
<td>.05</td>
<td>.00</td>
<td>.07</td>
<td>.62</td>
<td>.56</td>
<td>-.07</td>
<td>-.03</td>
</tr>
<tr>
<td>7</td>
<td>Economic performance</td>
<td>.03</td>
<td>.10</td>
<td>.10</td>
<td>.10</td>
<td>.08</td>
<td>.32</td>
<td>.73</td>
<td>.07</td>
<td>-.12</td>
</tr>
<tr>
<td>8</td>
<td>Technological turbulence</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.05</td>
<td>.02</td>
<td>.01</td>
<td>.00</td>
<td>.65</td>
<td>.20</td>
</tr>
<tr>
<td>9</td>
<td>Competitive turbulence</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.01</td>
<td>.00</td>
<td>.01</td>
<td>.04</td>
<td>.53</td>
</tr>
</tbody>
</table>

Mean

4.11  4.37  4.91  4.41  5.10  4.97  4.16  4.13  4.27

Standard deviation

1.32  1.09  1.03  1.69  .94  1.05  1.42  1.37  1.47

CR

.85  .88  .80  .89  .92  .83  .92  .85  .68

NOTE:
CR = composite reliability.
Average variance extracted (AVE) is presented on the diagonal.
Figures above the diagonal represent correlation values.
Figures below the diagonal represent squared correlation values.

Table 4. Structural Model Results

<table>
<thead>
<tr>
<th>Antecedents</th>
<th>Outcomes variables and parameter estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Export Responsiveness R² = .405</td>
</tr>
<tr>
<td></td>
<td>Gamma (γ) t-value</td>
</tr>
<tr>
<td>Export Planning</td>
<td>0.17  2.19*</td>
</tr>
<tr>
<td>Export Improvisation:</td>
<td></td>
</tr>
<tr>
<td>Spontaneity</td>
<td>0.16  2.58**</td>
</tr>
<tr>
<td>Export Improvisation:</td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td>0.16  1.78*</td>
</tr>
<tr>
<td>Export Improvisation:</td>
<td></td>
</tr>
<tr>
<td>Action-orientation</td>
<td>0.26  2.34**</td>
</tr>
<tr>
<td>Planning X Spontaneity</td>
<td>-.04  -.89</td>
</tr>
<tr>
<td>Planning X Creativity</td>
<td>-0.23 -4.30**</td>
</tr>
<tr>
<td>Planning X Action-orientation</td>
<td>0.17  3.27**</td>
</tr>
<tr>
<td>Technological turbulence</td>
<td>0.03  0.61</td>
</tr>
<tr>
<td>Competitive intensity</td>
<td>-.10  -1.35</td>
</tr>
<tr>
<td>Export Responsiveness</td>
<td>0.22  1.86*</td>
</tr>
<tr>
<td>Export Customer Performance</td>
<td></td>
</tr>
<tr>
<td>Export Economic Performance</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: One-tailed tests; * p<0.05 and ** p<0.01 (t-Value > 1.645 and >2.325 respectively)
## APPENDICES

### Appendix A. Company Characteristics

<table>
<thead>
<tr>
<th>Company reference number</th>
<th>Respondent’s position</th>
<th>Number of employees</th>
<th>Annual turnover</th>
<th>Export complexity (number of countries)</th>
<th>Export markets</th>
<th>Years on the market</th>
<th>Export experience</th>
<th>Product and/or sector of activity</th>
<th>Export intensity (% of sales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Managing Director</td>
<td>4</td>
<td>£200 000</td>
<td>30</td>
<td>Canada, Pakistan, Europe</td>
<td>28 years</td>
<td>27 years</td>
<td>Machinery for cutting metal</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>Sales Manager</td>
<td>50</td>
<td>£10 million</td>
<td>28</td>
<td>EU and Norway</td>
<td>15 years</td>
<td>15 years</td>
<td>Data loggers, sensors and weather stations</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>Export manager</td>
<td>50</td>
<td>£10 million</td>
<td>70</td>
<td>Europe, BRIC, Kazakhstan</td>
<td>43 years</td>
<td>25 years</td>
<td>Storage product</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>Managing Director</td>
<td>4</td>
<td>Over £1 million</td>
<td>5</td>
<td>Ghana, Ethiopia, Bahrain, Yemen</td>
<td>60 years</td>
<td>60 years</td>
<td>Gold mining</td>
<td>99.6%</td>
</tr>
<tr>
<td>5</td>
<td>Export manager</td>
<td>60</td>
<td>£6 million</td>
<td>3</td>
<td>Far East (Singapore), Germany, Brazil</td>
<td>290 years</td>
<td>10 years</td>
<td>Steel wire</td>
<td>10%</td>
</tr>
<tr>
<td>6</td>
<td>Major contracts manager</td>
<td>110 in the company, 1900 in the group</td>
<td>£12 million, £290 million in the group</td>
<td>50</td>
<td>Far East, USA, Spain, South Africa, Australia</td>
<td>160 years, 60 years</td>
<td>160 years, 60 years</td>
<td>Conveyor belting, food market</td>
<td>14-15%</td>
</tr>
<tr>
<td>7</td>
<td>Trade and export manager</td>
<td>10 (used to be with a factory around 30)</td>
<td>£3.5-4 million</td>
<td>10</td>
<td>Australia, Germany, USA, Italy, Sweden, Switzerland</td>
<td>47 years</td>
<td>15 years</td>
<td>Advertising calendars, used to be 17% last year, now 5-6%</td>
<td>5-10%</td>
</tr>
<tr>
<td>8</td>
<td>Managing director</td>
<td>4</td>
<td>£300 000</td>
<td>4</td>
<td>South Africa and Australia, indirectly China, Italy</td>
<td>6 years</td>
<td>4 years</td>
<td>Textile, cloths</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sales manager</td>
<td>10</td>
<td>£1.5 million</td>
<td>All countries</td>
<td>N/A</td>
<td>42 years</td>
<td>N/A</td>
<td>Analyser systems (measuring water parameters), oil and gas industry</td>
<td>70%</td>
</tr>
<tr>
<td>10</td>
<td>Site manager</td>
<td>75 000, 3000 in the UK</td>
<td>$23.1 billion, for the UK $1 billion</td>
<td>N/A</td>
<td>Africa, Middle East, Africa, Europe</td>
<td>Over 100 years</td>
<td>Over 100 years</td>
<td>Industrial products, 55 000 products</td>
<td>5-10%</td>
</tr>
<tr>
<td>11</td>
<td>Project director</td>
<td>15</td>
<td>£4.5 million</td>
<td>10</td>
<td>Africa, Middle East, Russia, Ukraine, South America, Australia</td>
<td>98 years</td>
<td>15 years</td>
<td>Incinerators, oil and gas waste, hospital waste</td>
<td>95%</td>
</tr>
</tbody>
</table>
Appendix B. Cross-Case Display

Export planning

- Consensus/Compromise between members
- Forecasting accuracy
- Control
- Effectiveness/efficiency

Quick adaptation to environmental changes:
- Customer
- Competitive
- Technological

Performance:
- Customer
- Economic

Export improvisation

Customised approach to dealing with customer requests

- Flexibility
- Quick decision-making
- Unpredictability
- New solutions

Decision-type
- Strategic
- Tactical

Structure
- Formalization
- Centralization
- Size

Resources
- Financial
- Time
- Human
## Appendix C. Company Characteristics Post Hoc Research

<table>
<thead>
<tr>
<th>Company reference number</th>
<th>Number of employees</th>
<th>Export complexity (number of countries)</th>
<th>Export markets</th>
<th>Export experience</th>
<th>Product and/or sector of activity</th>
<th>Export intensity (% of sales)</th>
<th>Export department</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200</td>
<td>20</td>
<td>Middle East, Saudi Arabia, Egypt</td>
<td>50 years</td>
<td>Conveyor systems</td>
<td>10%</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>20</td>
<td>Broadly based</td>
<td>30 years</td>
<td>Heating systems</td>
<td>30%</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>160</td>
<td>50-60</td>
<td>Europe, Middle East, Asia, the Americas, Caribbean, Middle East, Africa, Southern Europe, Scandinavia, Middle East, China, Japan, New Zealand, Australia, South Africa</td>
<td>40 years</td>
<td>Construction</td>
<td>90%</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>700</td>
<td>150</td>
<td>Middle East, Africa, Southern Europe, Scandinavia, Middle East, China, Japan, New Zealand, Australia, South Africa</td>
<td>75 years</td>
<td>Plates and dishes</td>
<td>80%</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>15</td>
<td>Asia, Europe, Middle East</td>
<td>30 years</td>
<td>Electronic equipment</td>
<td>85%</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>45</td>
<td>30-40</td>
<td>Asia, Europe, Middle East</td>
<td>35 years</td>
<td>Wire termination and tension equipment</td>
<td>40%</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>90</td>
<td>7</td>
<td>Iceland, Latvia, Lithuania, Romania, Sweden, Switzerland, China, India, Singapore, Indonesia, Malaysia, that whole region is our one cluster, Japan, USA, Europe</td>
<td>40 years</td>
<td>Steel</td>
<td>100%</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>72</td>
<td>Europe</td>
<td>30 years</td>
<td>Coatings and machines</td>
<td>80%</td>
<td>No</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>25-30</td>
<td>Qatar, Saudi Arabia and United Arab Emirates, Canada, USA, Finland, Sweden, Belgium, Holland, Syria, Kuwait, Amman, African states, India, Australia, Indonesia</td>
<td>50 years</td>
<td>Shelving, racking</td>
<td>10%</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>10</td>
<td>Europe</td>
<td>80 years</td>
<td>Electrical equipment</td>
<td>60%</td>
<td>No</td>
</tr>
<tr>
<td>11</td>
<td>22</td>
<td>20-25</td>
<td>USA, Russia and China</td>
<td>30 years</td>
<td>Coatings</td>
<td>15-20%</td>
<td>No</td>
</tr>
<tr>
<td>12</td>
<td>160</td>
<td>20-25</td>
<td>Eastern Europe and Brazil, Mexico, India and China</td>
<td>20 years</td>
<td>Automotive and component manufacture</td>
<td>70%</td>
<td>No</td>
</tr>
<tr>
<td>13</td>
<td>35</td>
<td>10</td>
<td>USA, Russia and China</td>
<td>More than 100 years</td>
<td>Manufactures machinery</td>
<td>80%</td>
<td>No</td>
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</tbody>
</table>