

Doctoral thesis

**THE INTERNATIONALIZATION OF SMALL FIRMS:
A COGNITIVE PERSPECTIVE**

**An Empirical Assessment of the Relationship between
Decision Makers' Global Mindset and Norwegian Small
Firms' Internationalization Behavior**

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Many people have directly or indirectly contributed to this thesis. Many will not even realize that they have had an influence as they have formed part of an extensive personal and professional network over many years. Nevertheless, the exchange of ideas, opinions and visions with each of you over the years has contributed to the formulation and development of this research.

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ABSTRACT

Internationalization of firms has been studied from perspectives ranging from resources, entrepreneurship, networking, marketing and strategy to learning. Although the literature does cover small firms (which the EU defines as enterprises with between 10 and 50 employees), most research focuses on larger firms' internationalization. Moreover, the latter kinds of studies tend to adopt a behavioral and descriptive approach, traditionally focusing on outbound internationalization activities that usually begin with exports. The existing literature largely assumes that firms have a natural propensity to internationalization. This research adopts a cognitive perspective on management in order to explore the formation of the global mindset and the relationship between the global mindset of small firm decision makers and firm internationalization behavior. A conceptual model and measurement instrument are developed that are based upon a review of the managerial cognition- and the firm internationalization literature. Using structural equation modeling, the theoretical conceptual model is estimated based on empirical data for Norwegian small firms. The model is then developed and partially confirmed. The results indicate that the factors most strongly influencing the formation of a global mindset are the decision-maker's international work exposure and experience; market dynamism and turbulence; the degree of market internationalization; and the decision-maker's personal characteristics (e.g. cross disciplinary collaboration, reflection and flexibility). The model indicates a clear causal relationship between the global mindset and firms' internationalization behavior. One implication of the research is that firms may most easily influence the formation of the global mindset by ensuring that CEOs and employees gain access and exposure to international work experience. A second implication is the finding of a positive relationship between a dynamic and internationalized business environment and the formation of a CEO global mindset. A third implication of the research is that for resource-scarce small firms, domestic performance satisfaction does not positively influence the formation of a decision-maker's global mindset.

Keywords: small firms; managerial cognition; global mindset; internationalization

INTRODUCTION

“[...] examine instead, everyday events, places and questions, micro-organizations and absurd organizations. In these sites, organizationally relevant phenomena are more visible and available for hypothesis generation than in complex organizations”. (Weick, 1984, p. 237)

In line with the citation above, this research is motivated by a desire to contribute to the understanding of *small firm decision makers' perception* of the competitive consequences of globalization. For some decision makers, however, a truly balanced perception of internationalization may require a change in the way they actually think about and do their business, how they interpret their business environment and how they define and understand the concept of internationalization.

The research project is also motivated by the author's 20 years of international experience – 10 years as a corporate employee in the USA and the last 10 as an internationalized entrepreneur of a small Norwegian firm. The experience has given food for thought as to why some small firms' chief executive officers (CEOs) and entrepreneurs appear to have a propensity to think and act internationally while others do not. Personal experience has also led me to wonder about the cognitive processes that lead some CEOs and entrepreneurs to see access to new resources (possibly through collaboration with others) while others in comparable situations only perceive complexities and problems.

It is an objective of the research to explore the relevance of managerial cognition phenomena in the internationalization of small firms. The research considers the existence of cognitive phenomena in the form of mindset or mindsets as a possible firm specific resource and capability (Teece et al, 1997; Barney, 1991; Grant, 1996) and it argues that the decision makers' global mindset is a construct with consequences for how the decision makers' cognitive processes may cause or impede internationalization behavior. In line with Schutz (1953, p. 319), is: *“[...] purposive abstention from acting being considered an action in itself”* – i.e. a decision-maker's choice, conscious or unconscious, to respond, or not to respond, to the perceived possibilities or threats of internationalization.

In line with other scholars (Hodgkinson & Sparrow, 2002; Peteraf & Shanley, 1997; Jenkins & Johnson, 1997), the present research argues that it is reasonable to view small firms as a collective cognitive actor and that the small business context is particularly

appropriate for exploring the linkages between cognition and action. As an antithesis, it may also be reasonable to deduce that small firms, often dominated by a headstrong owner-entrepreneur, may be particularly at risk of cognitive inertia arising from defensive routines which may hinder or delay adaptation to changes in the environment.

Much has been written about the importance of small companies for employment, innovation and growth. "Small is beautiful" is a well-known metaphor and the flexibility, dynamism and creativity of small enterprises are often the envy of bigger corporations. In general, smaller firms are important. Small and medium sized companies account for over 95% of all businesses, create roughly 50% of total value added worldwide and, depending on the country, generate between 60 and 90% of all new jobs (Knight, 2001). In Norway, small firms account for more than 95% of the employment in the private sector and 45% of the value creation (Statistics Norway, 2003), while 97% of all Norwegian companies have 20 or fewer employees. Taking into account the country's population density of 14 persons per square kilometer and a long, rugged coastline, it is evident that much of the small firms are dispersed and very small primary, industrial and/or commercial operations (Kyvik, 2003).

In the literature, small firms' internationalization has been analyzed from disciplinary angles ranging from strategy and marketing to entrepreneurship and networking. Though many theoretical approximations focus on how smaller companies may learn to be globally competitive and the specific skills required for successful internationalization, existing literature with some notable exceptions (Welch & Luostarinen, 1993; Fletcher, 2001; Leonidou et al, 1998) does not offer a holistic perspective on internationalization, takes the propensity to internationalize for granted, and frequently limits its focus to outbound activities of larger firms in the form of export.

Inspired by Schutz' (1953) common-sense and scientific interpretation of human action, the research design seeks to keep the perspective and motives of the practicing manager in mind while attempting to explore the relationship between cognitive phenomena, their measurements and firms' behavior. As will be seen, the underlying assumptions and the hypothesized measurable relationship between the managers' global mindset and firms' internationalization behavior are intuitive and appear to make common sense. For small firm managers, however, the realities of day-to-day managerial tasks, their motivations for decision-making and behavior are commonly neither parsimonious nor do they always

appear rational. Small firm-behavior and their performance are often judged on a benchmark of survival rather than growth. Both Weick's (1989) view of a scholarship as grounded in common sense and Ghoshal's (2005) call for the inclusion of practitioners in academic studies, influenced the decision to base this research firmly on practical knowledge and data collected in situ from small firm decision makers.

The organization of the thesis is as follows. Chapter 1 provides an overview and context for the research with a benchmarking of Norwegian economic performance indicators with comparable developed economies. Chapter 2 discusses cognitive perspectives on management, situating it as an enriching, compatible and knowledge- and capability based view of management. Chapter 3 reviews literature pertaining to the established models and constructs in the firm internationalization scholarship and with emphasis on how this research attempts to add cognitive dimensions to the existing literature. Chapter 4 outlines the conceptual model developed as a result of the preceding literature review, presents the proposed refutable hypotheses and describes the operationalization of the variables. Chapter 5 summarizes the chosen research design. Chapter 6 outlines the data collection process, the methodology and the sequences of the data analysis and model development phase. Chapter 7 presents overall conclusions of the research, outlines its limitations and makes recommendations for future research.

1. RESEARCH CONTEXT: NORWEGIAN CHALLENGES

1.1 Norway - economic status quo

Norway is a small country in an increasingly globalized world and is on the northern edge of Europe. Rich in natural resources such as wood, hydroelectric power, fisheries and oil and gas, the structure of the Norwegian industry is generally geared towards exploiting these resources. Partly due to its unique resource position, the Norwegians have so far decided in two referendums to remain outside the EU.

The Norwegian economy has some attractive features. Oil and gas, maritime transportation and marine industries including aquaculture are strong national clusters. These are all characterized by being complete clusters and include world-leading industrial and service companies, a strong competence-base, and strong linkages supporting knowledge transfer and development. Strong capabilities are also found in light-metals and in niches within the information and communication technology industry (Reve et al, 2004).

The oil and gas sector is particularly vital and Norway is at present the world's second largest exporter of crude oil, and a significant supplier of gas to Europe. The two major domestic oil-companies Norsk Hydro and Statoil, both partly publicly owned, dominate the industry. However, several oil majors and most leading international oil service companies are important players on the Norwegian continental shelf. Highly specialized services have developed as sub-sectors to the oil and gas industry and companies based in Norway have world-leading competences, and for instance have gained an edge in sub-sea exploration given the need to deal with severe weather conditions in the North Sea.

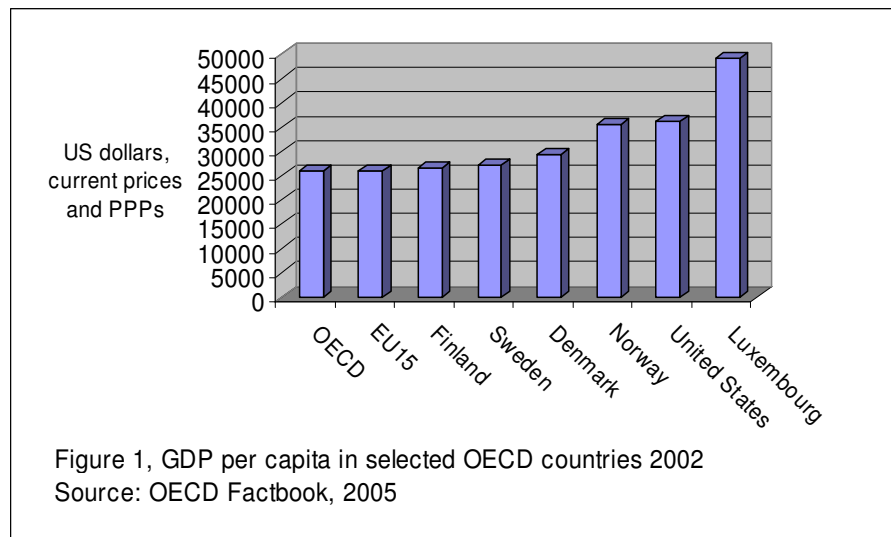
The maritime transportation sector has for long been the most complete internationalized and competitive Norwegian industry and the country is headquarters to leading international companies in the shipping, shipbuilding, equipment production and services, ship broking, maritime classification, ship finance and insurance, and related consulting sectors. Shipping and related services account for more than half of all export of services from Norway.

The Norwegian marine fishing industry has a strong international position, being the world's largest exporter of seafood. Based on massive investments in research and

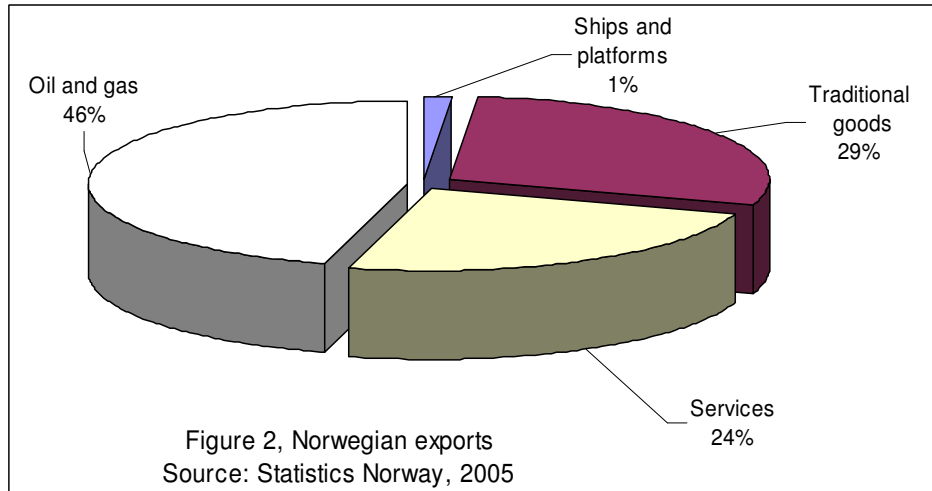
development during the 1970s and 80s, Norwegian firms were pioneers in aquaculture, particularly in the development and industrialization of salmon. The industry has, however, in recent years struggled to sustain growth and suffered financial losses until recently.

As with most other modern economies, Norway has been characterized by strong growth in the service sector. The majority of the 100 largest companies are service and network companies. While much of the growth has been sustained by domestic demand, strong international positions are found in niche markets, commonly linked to the strong industrial clusters mentioned above.

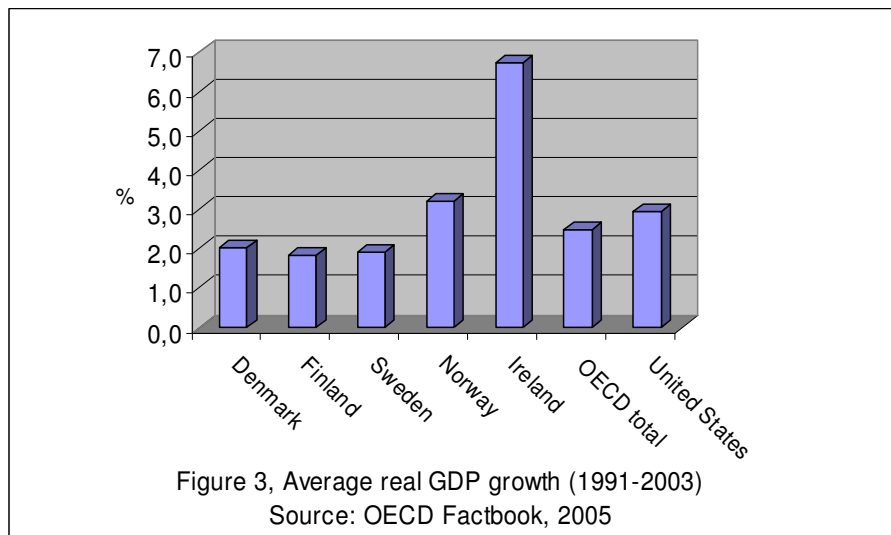
As illustrated in Figure 1, Norway belongs to the most prosperous economies in the world and was recently announced as the second richest nation in Europe (Statistics Norway/Eurostat, 2005).



As can be seen in Figure 2, as a main exporter of oil and gas, Norway has greatly benefited from the current high crude oil prices. The oil and gas industry has played a major role in sustaining the growth in the Norwegian gross domestic product (GDP) and



the high standard of living. Figure 3 illustrates how the GDP growth on average actually has been sustained over a period of more than 10 years. The figure also indicates the relative strength of the Norwegian economy compared to neighboring Scandinavian countries and the OECD average. Reportedly (Reve et al, 2004) a comparative analysis of



economic performance in the Nordic region, shows that Norway in the period from 2000 to 2003 had a lower GDP growth rate, lagging markedly behind Denmark, Sweden and Finland. These findings, however, have not been corroborated and more recent data from

Statistics Norway indicate that the growth in GDP in fact has picked up, fuelled by high oil prices.

The importance of the oil and gas exports is illustrated in Figure 4 and 5. Both figures are time series of Norwegian foreign trade. The black line is total national export and the grey line is total import. As can be seen, the relationship between export and import has

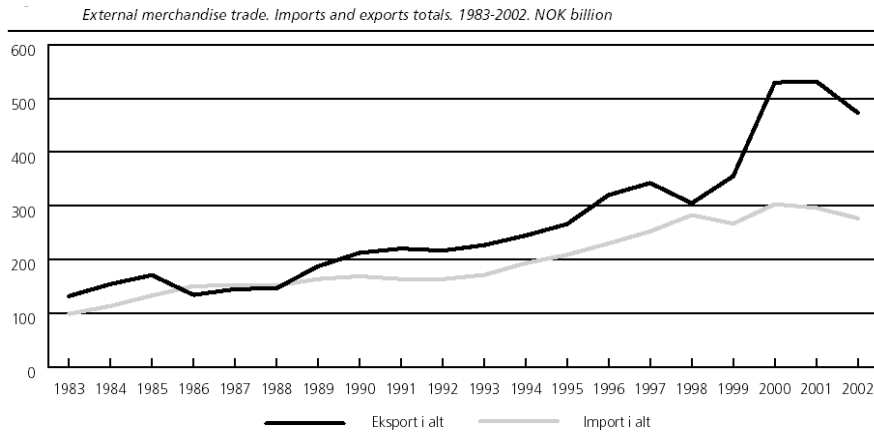


Figure 4, Norwegian trade balance (1983-2002)
Source: Statistics Norway, 2002

resulted in a positive trade surplus most years. Figure 5, more specifically, illustrates the relative importance of the oil and gas exports in the Norwegian economy. The black line shows total exports, while the dark grey column is export of traditional goods, the medium grey column is export of ships and oil platforms and the light grey column is export of crude oil and natural gas. The chart clearly reveals that the trade surplus moves in

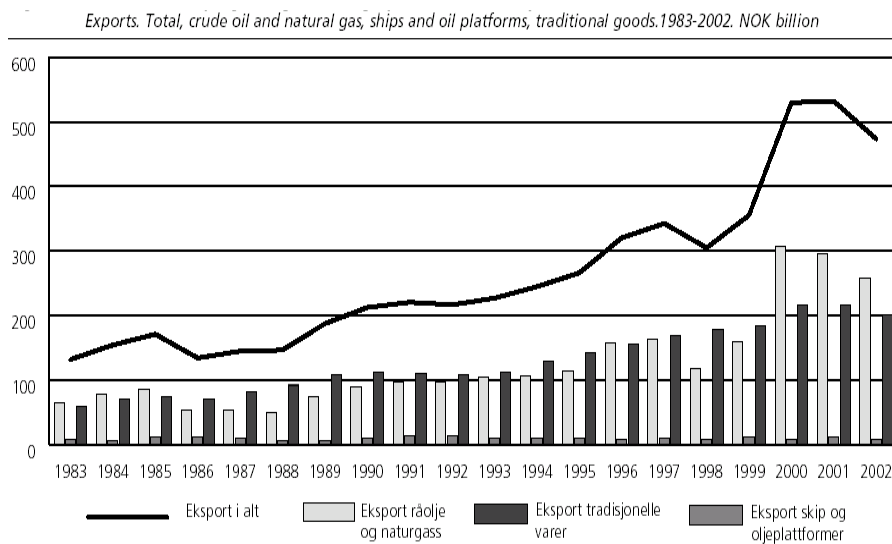
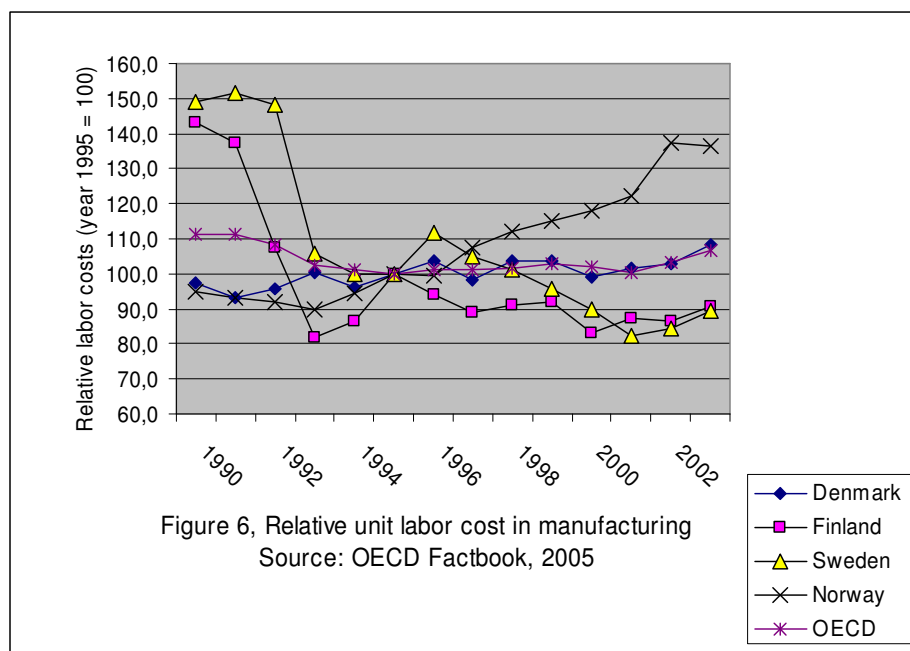


Figure 5 Norwegian exports (1983-2002)
Source: Statistics Norway, 2002

parallel with the peaks in the export of crude oil and gas.

There are indications that the income of the oil and gas exploration in the North Sea has had some inflationary effects. To counterpart inflationary pressures, legislation has been enacted that requires the major part of oil revenues to be deposited in a Government Petroleum Fund¹ (the Fund). The Fund has the twofold purpose of smoothing out and limiting domestic spending of oil revenues and at the same time acting as a long-term savings vehicle required as a contingency reserve to meet the extra spending implied by an ageing population. By the end of 2005, the Fund reportedly is of a size equivalent to approximately €36.000, - per inhabitant².

Norway has a wealthy and growing public sector comparable to other Nordic and some European countries, however the growth rate has recently been substantially higher. GDP growth and high income in the oil and gas sector combined with the burgeoning public sector have led to pressure on the cost of Norwegian labor. As illustrated in Figure 6, the Norwegian manufacturing unit labor cost has during the last decade increased to levels difficult to sustain by labor intensive firms, with industrial structural consequences and tight margins for many land-based businesses competing internationally.



¹ Government Petroleum Fund act of June 22, 1990

² <http://www.aftenposten.no/nyheter/okonomi/article1188107.ece>, 31.12.2005

There are data and data interpretations which indicate that Norway's privileged industrial position may be fragile and questions have been raised concerning the sustainability of the economy (Reve & Jakobsen, 2001; Reve et al, 2004). Norway recently fell from 6th to 9th position in the World Economic Forum's "growth competitiveness" index ranking, falling behind Nordic neighbors Finland (ranked as 1st), Sweden (3rd) and Denmark (4th).

1.2 Aberrations and challenges ahead

1.2.1 Value-creation challenges

The national revenue from oil and gas exports will wane over the next few decades as oil wells become depleted and the discovery and exploration of new fields are expected to come to an end.

"Hence, over time level of value creation will either decline or Norway has to succeed in creating new business activity and improve international competitiveness of current industries to be able to sustain current GDP level" (Reve et al, 2004, p. 9).

The value creation challenge is widely recognized by Norwegian politicians. In the words of the government³:

"At present, public sector wealth stands in the way of a much-needed appreciation of the need for adaptation of the Norwegian economy. The fallout from failing to adapt may be dramatic – at first, for businesses in the sector exposed to competition and their employees".

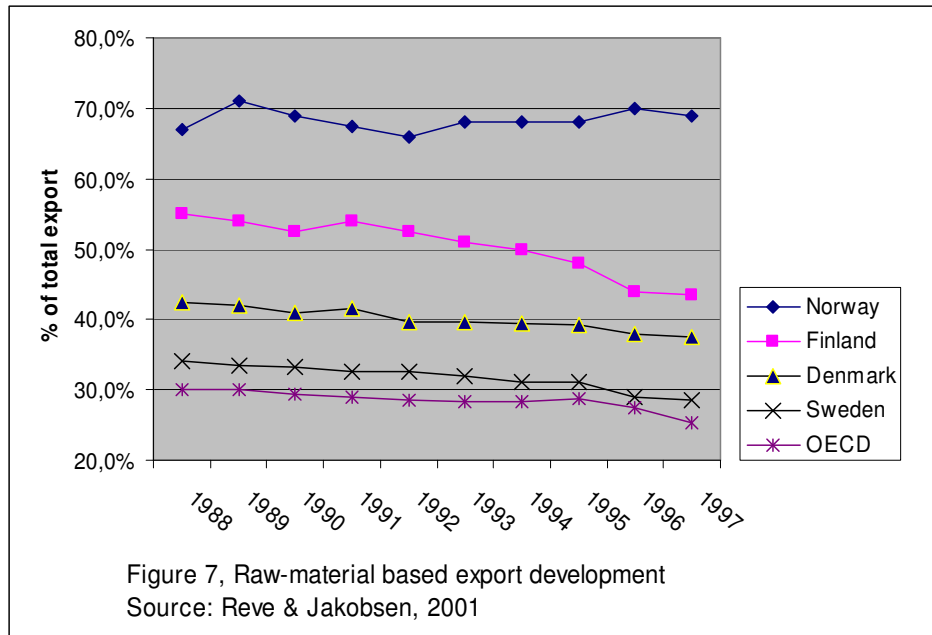
The following paragraphs discuss some status quo indicators of the Norwegian industry's preparedness for renewed innovation and value creation.

1.2.2 Dependence on natural resources

The Norwegian industry- and business structure is significantly raw material oriented. Large exports of oil and gas, fish, aluminum, electricity, fertilizer and cellulose put Norway at the top of the European raw-material export league.

³ "From idea to value – the Government's plan for a comprehensive innovation policy", 2003, p. 5

As illustrated in Figure 7, other countries have significantly moved away from natural

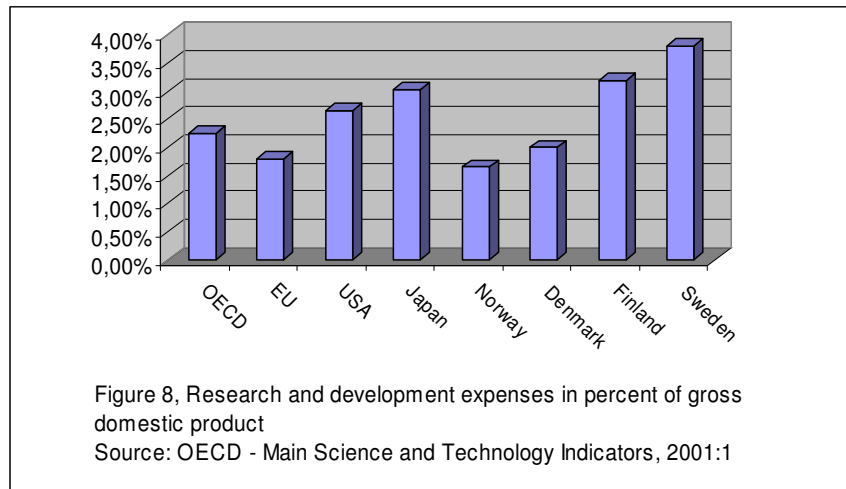


resource-dependency and towards higher added value and knowledge-based production during the last decades. By contrast, Norwegian exports are still comparatively raw-material intensive. Natural resources are obviously not a liability. However, the problem arises when these resources are traded as raw materials and commodities. Such an approach can all too easily lead to industrial production that is cost-oriented instead of being based on customer and market-driven innovation. Furthermore, raw-material based production easily leads to exposure to global price fluctuations on the world markets.

1.2.3 Level of research and development

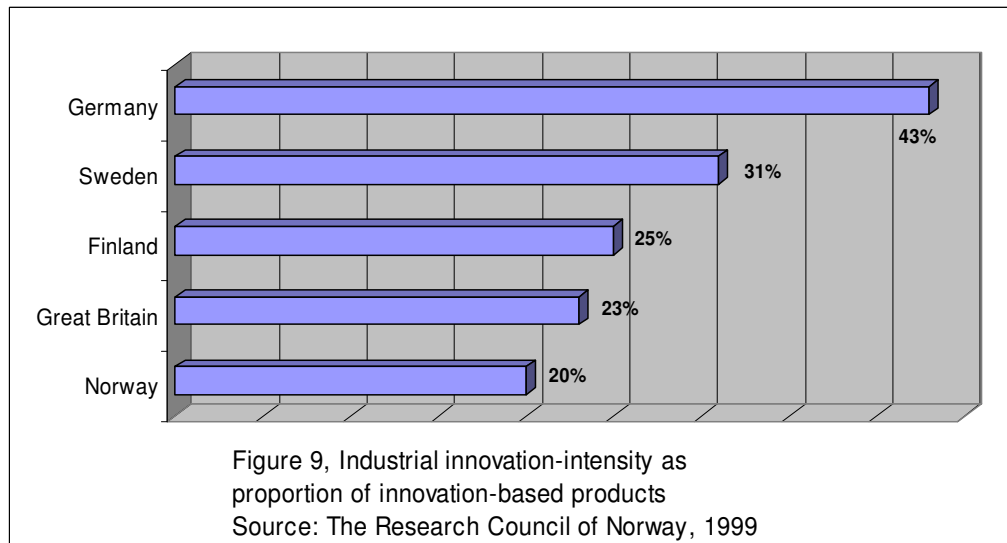
A large chunk of Norwegian industry is based on raw-material processing and related service-industries. A consequence is that Norway today is among the OECD countries that invests least in research and development (R&D) (Reve & Jacobsen, 2001) (Figure 8). Calculated as percentage of GDP (1999) Norway spends 1,65% while the OECD-average is 2,25%. In comparison, among Norway's Nordic neighbors, Sweden invests 3,8% and Finland 3,2%. Two more reasons given for this lackluster performance are the smaller size of Norwegian industry, which makes it harder to attain the critical mass

(Gustavsen et al, 2001) needed to make R&D pay-off; and a passive attitude among the private sector (the Norwegian Research Council, 2001⁴).



1.2.4 Innovations and productivity

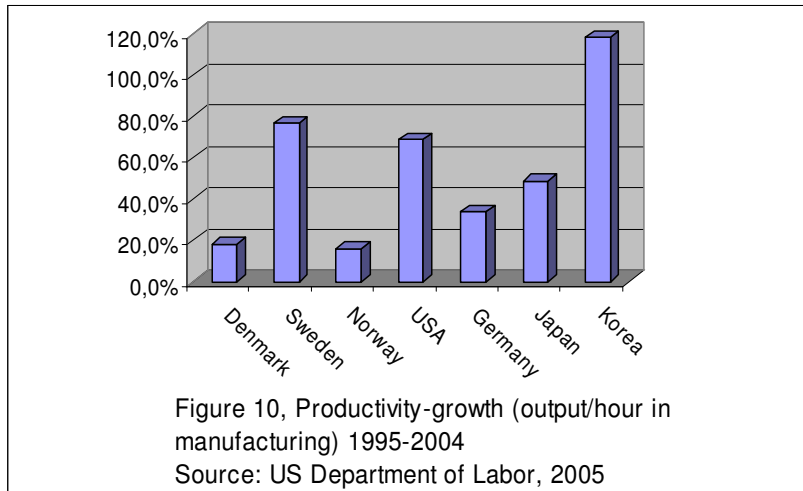
Given the foregoing points, it is hardly surprising that the level of innovation in Norwegian firms (as measured by the OECD's definition as share of innovative products) is low compared with international benchmarks (Figure 9).



Norwegian businesses' low scores in industrial innovation might, however, be compensated for by high cost efficiency and high productivity. Figure 10 illustrates

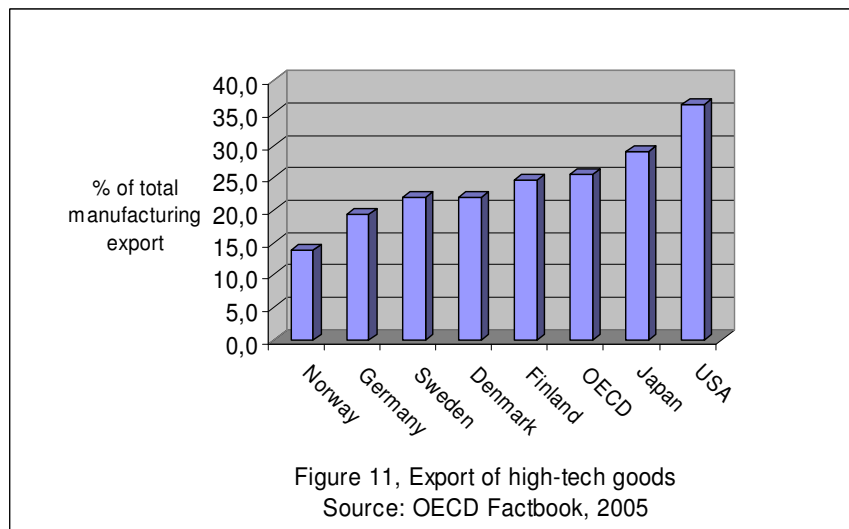
⁴ "Det norske forsknings- og innovasjonssystemet – statistikk og indikatorer" (Norges forskningsråd, 2001)

average productivity-growth in manufacturing over the period 1995-2005 measured as output/hour. Again, however, the findings indicate a lackluster aggregate performance of Norwegian firms based on international comparisons.



1.2.5 Knowledge-based export

Knowledge-based exports (as measured by high-tech products in the information and technology industry as a share of total exports) may serve as an indicator of knowledge production and facilitate export comparisons between countries. With reference to Figure 11, only about 13% of total exports by Norwegian companies fall in the knowledge-based category. Again, at the macro-economic level, the aggregate score for Norwegian firms is far lower than for comparable developed economies.



1.3 Concluding remarks

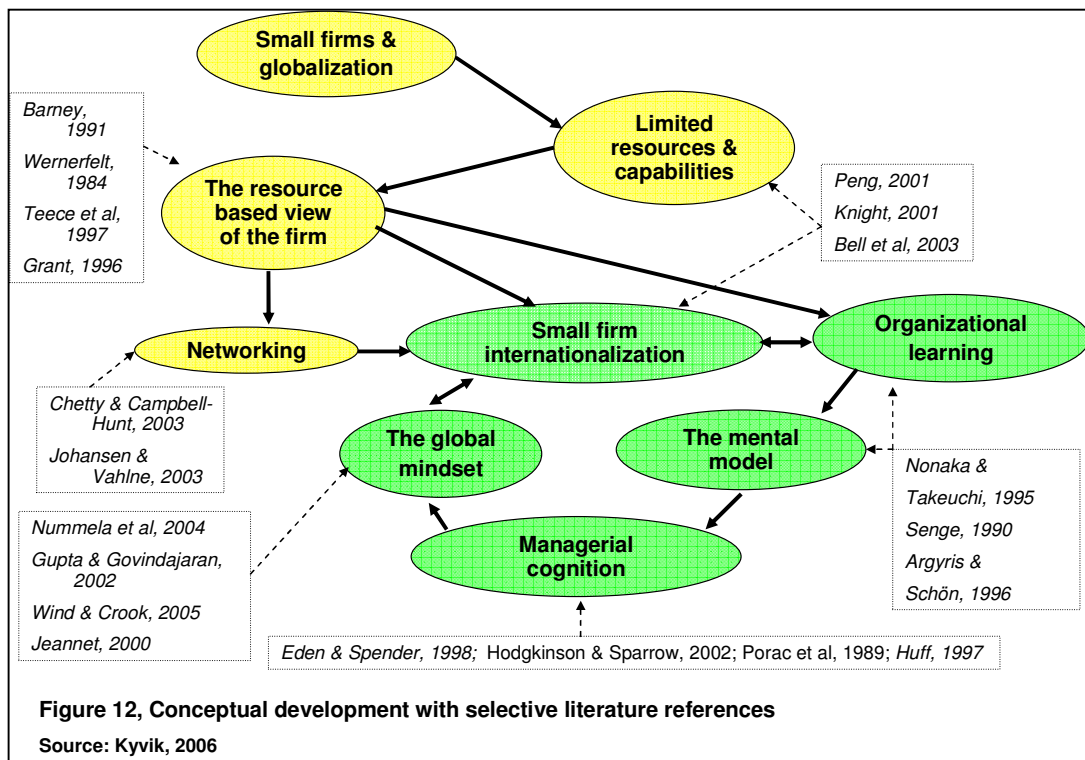
Allegedly, there are significant measurement problems related to international comparisons of economic performance indicators. Nevertheless, the differences in several of the preceding measures, for instance for research and development investments, innovation, productivity and knowledge-based exports appear both logically consistent and too large to be ignored as a measurement issue. It also appears that several of the indicators (e.g., for research and development and innovation) may be related, which may imply a more fundamental business, social-political and educational challenge.

In spite of this, one should not generalize. Several individual Norwegian firms in the maritime shipping industry, the fishing industry, and the oil and gas sector are at the forefront of international development and innovation.

PART I – CONCEPTUAL FOUNDATIONS

Based on a cognitive perspective on management and with a focus on the internationalization of small firms, the research draws on literature from several research paths and bodies of literature. With the objective of developing and testing a model depicting a hypothesized causal relationship between the formation of the global mindset construct and small firms' internationalization behavior, the literature review is based on an interdisciplinary research perspective.

As illustrated in Figure 12, the conceptual development of the research went through various stages of literature exploration, beginning with the broad question of how globalization creates challenges and opportunities for Norwegian small firms. The contributions of the resource-based view of internationalization were reviewed given the



common perception that resources limit small firms' internationalization. Secondly, as a small firm's lack of in-house resources may be alleviated by access to external resources through network collaboration, the networking literature focusing on small firms was reviewed. Thirdly, since a fair number of Norwegian small firms are engaged in knowledge-intensive industries and this research considers knowledge as a renewable and developmental capability, the organizational learning literature was reviewed and the

central role played by the mindset in firms' behavior and strategic development re-affirmed. Finally, the connection was made between the global mindset and small firm internationalization by combining features of the internationalization and the managerial cognition literature to form the conceptual platform for the research.

The following definitions are central in the further conceptual development:

Decision-maker(s): The decision-maker(s), individually or collectively, serve as chief informant and indicate level of analysis. It is reasoned that these respondents have both operational and strategic responsibility as principal shareholders and/or CEOs. It is suggested that owner-managers' personalities, in particular their values and goals, are indistinguishable from the goals of their businesses (Kotey & Meredith, 1997) and at the center of all enterprise behavior. "When a firm is led by a single top decision maker, as many small firms are, the cognitive processes of the CEO are arguably the same as those of the firm..." (Peteraf & Shanley, 1997, p.167).

Firm size: Small firms are defined according to EU- standards as enterprises with between 10 and 50 employees (de Chiara & Minguzzi, 2002; Andersson et al, 2004).

Cognition: Cognition refers to belief systems that individuals use to perceive, construct and make sense of their world and to make decisions about what actions to take (Weick, 1979; Swan, 1997).

Mindset or mental model: A mindset is defined as a concrete presentation of a situation, which forms the basis for reasoning (Atkinson et al, 2000). Senge (1990) and Johnson-Laird (1989) describe mental models as deeply ingrained assumptions, generalizations, or even pictures and images that influence how we understand the world and how we take action. In other words, a mental model is one's way of looking at the world, represents a framework for the cognitive processes of the mind and determines how we think and act. The forces that nurture, shape and reshape our mental models include education, specific training, influence of others (social learning), rewards and incentives, and personal experiences (Wind & Crook, 2005).

Global orientation: The global orientation construct refers to a manager's positive attitude towards international affairs, his or her ability to adjust to different environments and cultures and is demonstrated through the manager's commitment to international markets, international vision, pro-activeness, customer orientation, responsiveness, marketing competence, and the use of advanced communication technologies (Nummela et al, 2004; Knight, 1997; Moen & Servais, 2002).

Global mindset: The global mindset construct is defined as a mindset that combines a manager's openness to and awareness of diversity across cultures and markets with a propensity and ability to synthesize across this diversity (Gupta & Govindarajan, 2002). "A global mindset is said to

describe a manager's openness to and awareness of cultural diversity and the ability to handle it" (Nummela et al, 2004, p.54). The construct is similar to the global orientation construct, but in this research it is considered a more global and holistic concept reflecting itself in the sensibility, awareness, vision and willingness to take risks in building cross-border relationships. The construct includes awareness that internationalization is as much about transmission of knowledge, learning and dialogue as about exporting and importing goods and services.

Internationalization: Internationalization is defined as the process of adapting firms' operations (strategy, structure, resources, etc.) to international environments (Calof & Beamish, 1995). This definition leaves the door open for *inward* connections, i.e. transactions into the country or *outward* connections, i.e. transactions out of the country, in internationalization and encompasses upstream as well as downstream activities and commitments by the firm. Furthermore, the definition is not restricted to the flow of physical goods, but includes information, exchange of technology, know-how and competencies and is sufficiently open to include an extension as well as a contraction of cross-border activities and commitments (Havnes, 2001).

The proceeding literature review will elaborate on aspects of the cognitive perspective of management in Chapter 2, before discussing the substantive phenomena of firm internationalization in Chapter 3.

2. A COGNITIVE PERSPECTIVE ON MANAGEMENT

2.1. Managerial cognition – a capability

Concepts of managerial cognition, in the view of this research, represent a potentially underutilized intangible, idiosyncratic and proprietary difficult-to-trade dynamic capability, particularly in knowledge-intensive organizations (Teece et al, 1997). In line with the resource-based view of the firm in the strategy-literature (Barney, 1991; Wernerfelt, 1984) and particularly the emerging knowledge-based view (Grant, 1996), the research project specifically emphasizes the potential utility of the small firm's collective mindset as a firm-specific capability when considering firms' overall resources. In line with this argument, Sutcliffe and Huber (1998) make the point that difference in the perceptive scheme in a firm may offer a competitive differentiation:

"However, if environmental perceptions vary across organizations in an industry, firms that do not share the common perception and therefore undertake "uncommon" actions either may achieve an advantage over competitors or may perform less well if their actions are incongruent with the environment" (ibid, p. 794).

The foundations of the cognitive perspective on management were originally laid with the development of cognitive psychology and were in part a response to a development of an overtly behavioral focus in management science. Rejecting the central theoretical tenets of behaviorism, cognitive scientists emphasized the analysis of the various intervening mental processes that mediate responses to the environment. Studying managerial and organizational cognition means focusing on the most accessible (because it is intrinsic to our own lives) and most elusive (because it is not directly observable) of subjects (Huff, 1997). Including sensitivity to and an understanding of cognitive phenomena in the managerial toolbox appears to offer new dimensions and new concepts to the practical management of organizations, literally on-site and in-action.

Discussing the implications of cognitive processes and how knowledge is evaluated in a relational context and assessed based on structural changes and its effects on the environment, Maturana and Varela (1987) observe:

"It is in reference to the effect the observer expects that he assesses the structural changes triggered in the organism. From that standpoint, every interaction of an organism, every behavior observed, can be assessed by an observer as a cognitive act" (ibid, p. 174).

Consequently, cognition forms a natural and integral part of all personal and inter- and intra-firm activity. The construct has its roots in philosophy, possibly first advanced in form of Socrates' exploration of innate knowledge in form of Platonic dialogue, and later further developed in cognitive science and psychology, where cognitive psychology is a theoretical perspective that focuses on the realms of human perception, thought and memory. Schutz' social phenomenology may be seen as developing in parallel with the advances in cognitive psychology, with both research paths solidly anchored in the idea of interpretative practice. In Schutz' (1953) view, the social sciences should focus on the ways that the real-life world – the world every individual takes for granted – is experienced by its members through processes of common sense meaning-making, while cognitive psychology focuses specifically on the role of the mind in everyday perception and sensemaking.

The relationship between managerial-cognition and psychology quickly becomes a difficult task. However, a synthesis reveals as common threads that 1) sensation and perception serve as basic ingredients in cognition and occur automatically, 2) conception involves a process of abstracting, integrating and retaining information, 3) concept formation and categorization are developmental processes, and 4) hierarchical and dynamic conceptual structures emerge over time to create consistence between cognition and the objective reality (Cowan & Skidd, 1991).

In management, the focus of the cognitive perspective is to study how firms' decision makers conceptualize strategic information and how this impacts decision-making (Lyles & Schwenk, 1992). In a more narrow sense, cognition refers to cognitive structures, mental models or mindsets and the cognitive processes whereby these mental constructs are constructed, manipulated and used in decision-making (Swan, 1997; Hodgkinson & Sparrow, 2002). In a sensemaking perspective, however, the cognitive perspective is extended to assume a reciprocal influence between subjects and objects (Weick, 2001) by suggesting that managers shape their environment through "enactment" by noticing, by giving data meaning and developing mental models for understanding and interpreting and finally acting.

2.2 Cognition, mindsets and behavior

A review of basic psychology-literature (Atkinson et al, 2000) seems to indicate, according to Freud and Maslow, that personality is partly biologically determined, and partly sociologically determined based on social learning and cultural embeddedness and that social values are grounded in social interaction (family, education, religion, etc.).

Several managerial cognition scholars have reported that research has failed to build a convincing empirical evidence of the relationship between managerial cognition and organizational outcome. Meindl et al (1994) state:

“There are strong pressures within the organizational cognition literature to forge links from cognitive processes and structures to important organizational outcomes such as profitability, innovativeness, and adaptability to change. [...] (ibid, p. 291-292).

Finding such linkages would do much to legitimize the study of managerial and organizational cognition among both academics and business managers. [...]

Unfortunately, cognitive constructs prove difficult to measure in the field. Even when they are measured, cognition is so tightly intertwined with other organizational variables that it is difficult to disentangle their casual impact on behavior and outcomes” (ibid, p. 292).

However, Jenkins and Johnson (1997) comment that:

“Despite the lack of empirical support management researchers continually infer the existence of a linkage between thought and action” (ibid, p.77).

Management scholars do customarily assume a causal relationship between cognitive processes, thinking and behavior. According to Weick (1984), thinking is inseparably linked to action: *“[...] managers behave thinkingly” (ibid, p.222).*

Also in Fishbein and Ajzen’s scholarship (Fishbein & Ajzen, 1975) cognition and behavior appear to be causally implied:

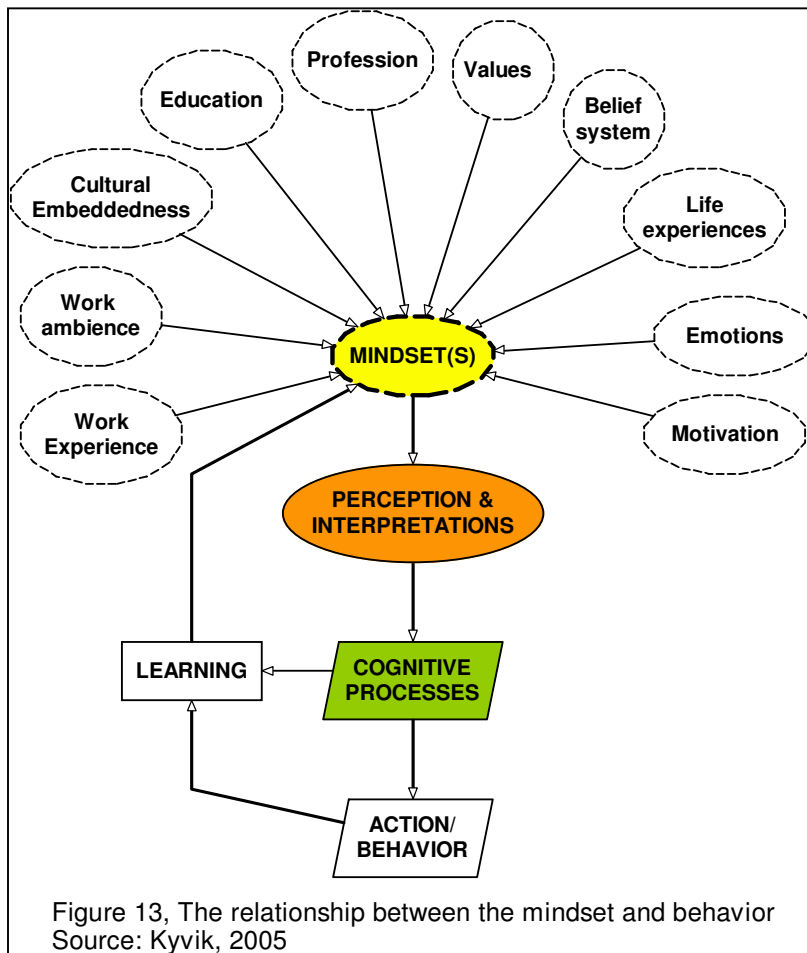
“Each intention is viewed as being related to the corresponding behavior” (ibid, p.15).

Rokeach (1973) links human values and value systems to behavior, stating that:

“More than any other concept, it [value system] is an intervening variable that shows promise of being able to unify the apparently diverse interests of all the sciences concerned with human behavior” (ibid, p. 3).

Other scholars (Senge, 1990; Argyris & Schön, 1996; Porac et al, 1989; Hodgkinson & Sparrow, 2002; Wind & Crook, 2005, etc.) similarly make an assumption of a *causal* relationship between managerial thinking and individual and collective firm behavior.

The further elaboration aims at establishing, in line with the majority of management scholars, a firm conceptual acceptance for the thesis of a relationship between cognitive managerial constructs and firm behavior with the web of evolving “work-in-progress” managerial mindsets being established and maintained through a dynamic processional development between values, education, experience and personality. Managerial cognition is thus based on the premise that the various intervening mental processes that mediate responses from the environment via interpretative cognitive processes do in fact influence individual and collective behavior. As illustrated in Figure 13, the various overlapping cognitive concepts have in common that they convey the idea that actors develop internal representations of their world, which in turn are linked to organizational



action. That is to say the concepts signify processes that influence individual and collective perception and interpretation of the surrounding reality and that the outcome of these perceptual and interpretative processes influence decision-making and behavior. It is emphasized, however, that Figure 13 only simplistically alludes to the complexity of cognitive processes and its direct and tacit, conscious and unconscious, impact on decision-making. The illustration implies that learning takes place based on multidirectional interactions between the cognitive concepts and learning based on behavioral experiences.

The logic of the illustration in Figure 13 thus corresponds closely to the conceptualizations of the relationship between beliefs, attitudes and behavior depicted by Fishbein and Ajzen (1975), the relationship between value systems and conduct argued by Rokeach (1973) and is in line with Wind and Crook's (2005) statement that the mindset and mental models:

"[...] not only shape what we see and how we understand the world but also how we act in it. In a real sense, what we think is what we see, what we see is what we think" (ibid, p. 5).

However, also from Wind and Crook (2005):

"Your mental models shape the way you see the world. They help you quickly make sense of the noises that filter in from the outside, but they can also limit your ability to see the true picture" (ibid, p.4).

Accordingly, mental models may cause cognitive biases and effectively bound decision makers' conception of rationality.

2.3 Bounded rationality and beyond

As theories of rational expectations and managerial choice continue to dominate the syllabi of business schools, the cognitive view of management has grown out of a rejection of the presupposition that managerial decisions can be analyzed adequately by using these hyper-rational notions of complete data, well-defined objective functions and rigorously logical decision making. It is argued that managers form personal models of the focal situation, personal in the sense that they differ significantly from the abstract models which formal choice theories presupposes (Eden & Spender, 1998). The construct of bounded rationality (Simon, 1978, 1982; Foss, 2001), which suggests that actors are unable to take decisions in a completely rational manner due to the fact that

they are constrained by fundamental information processing limitations, has been a pillar in the development of modern cognitive theory and research in organizational settings (Hodgkinson & Sparrow, 2002).

The observation that the business environment has gradually increased in complexity and the notion of information overflow has led scholars to appreciate the relevance of Simon's construct. Forest and Mehier (2001), with reference to Simon's scholarship, point out practical limits of rationality in decision-making caused by imperfect or limited knowledge, limited abilities of calculation and impossibility of considering all solution-options and limitations of attention to all relevant information and suggest that the concept of bounded rationality does not imply irrationality, but rather serves to underline the constraints on individual and collective human actions based on the fact that decisions are individual, but are usually determined in a social context and setting.

Thus, beyond the theorem at the heart of the neoclassical economic theory of *Homo Economicus*, both behavioral and cognitive oriented scientists have attempted to augment traditional ideas of economic rationality with decision-making models from psychology and sociology. Both camps appear to agree that man's rationality is bounded; real-life decision problems are too complex to comprehend and therefore firms cannot maximize over the set of all conceivable alternatives. Relatively simple and heuristic decision rules, rules of thumb, procedures and routines are often used to guide actions. Because of the bounded rationality problem, these rules and procedures cannot be too complicated and cannot be characterized as optimal in the sense that they reflect the results of global calculations taking into account information and decision costs; however, they may be quite satisfactory for the purposes of the firm given the problems it faces. Thus firms "satisfice"; i.e. a firm is unlikely to possess a well-articulated global objective function in part because individuals have not thought through all of their utility tradeoffs and in part because firms are coalitions of decision makers with different interests that are unlikely to be fully accommodated in an inter-firm social welfare function (Nelson & Winter, 1982). The issues related to the decision-making process remain subject to interpretation. This is because of small-firm management's day-to-day operational focus, and the assumption of rationality versus satisficing behavior (partly due to: bounded rationality; the variety of decision-makers' non-economic motives and the implications of inaccurate managerial perceptions) (Maule & Hodgkinson, 2003). This ambivalence is corroborated by the scholarly debate between Simon, Shackle and March surrounding the concepts of

rationality, imagination and intelligence and the idea that different versions of bounded rationality exist (Augier & Kreiner, 2000).

Decision-making based on satisficing, heuristics and simplified mental representations has the advantage of limiting the information processing requirements, but may lead to sub-optimal outcomes by deciding without evaluating better options. This conceptual bias is known as framing bias or cognitive bias (Eden & Spender, 1998; Hodgkinson & Sparrow, 2002) and is arguably not restricted to the individual level but may in fact reflect itself in an accumulation of cognitive biases, a process which amasses organizational inertia and bias towards currently-followed strategy until the status quo of existing cognitive processes are revised.

Cognitive oriented management scholars claim that the managerial and organizational cognition approach to management differ from previous schools of thought in that it focuses on the models that drive actual managerial action, rather than on abstract, rational models. Similarly, the point is made that in practice managers make their decisions under conditions of information inadequacy and other forms of uncertainty. Actually Spender (1996) goes much further, claiming that management science's adoption of overly positivist methodologies is to the detriment of more interpretive systems and encourages more openness within the philosophy of science:

"To overlook the incommensurability of the positivist and interpretive programs is to overlook the irrevocable uncertainties of the human condition and thereby everything that makes our knowing, learning and memorizing processes interesting" (ibid,p. 72).

Other examples of alternative philosophies or management perspectives can be found in Nonaka and Takeuchi (1995) in their discussion of epistemological differences between western and oriental management and also in Williams (1983) in his discussion of the relationship between psychology, brain functioning and entrepreneurship. Williams in particular (in line with the discussion of bounded rationality above), questions the relationship between cognition (how we think and make judgments), the existence of a culturally determined left-hemisphere bias represented by a tendency to reason logically, linearly and sequentially, and how this may impact innovation and entrepreneurship.

Nooteboom (2003) puts forward a more situated and contextual perspective on managerial cognition. Focusing on elements of a distinct cognitive theory of the firm, the author conveys a perspective on the firm as a "focusing device" grounded in the cognitive

processes embedded in the firms' *raison d'être* as well as in the individual minds – much in line with Weick's (2001) sensemaking construct. Nooteboom's reference to the trade-off between cognitive distance needed for novelty and variety and cognitive proximity needed for mutual understanding and agreement may be seen as similar to the potential stimuli gained by small firms' internationalization through management's exposure to new ideas, learning and the potential unblocking of domestic operational myopia. This reasoning is in line with *organizational renewal theorists* Brown and Eisenhardt (1997), who argue that organizations can administer limited shocks to their system in order to renew and refresh their (technological) knowledge base at regular intervals, in particular through controlled strategies for new products or entering geographical markets (e.g. through *internationalization*).

2.4 Cognition's position in management literature

Cognitive processes have to do with knowledge, judgment and decision-making and it "goes on" on at all organizational levels and "exists" in all managerial contexts. Cognition is interdisciplinary and involves internal as well as external activities. This observation is reflected in the extensive body of literature discussing cognitive concepts.

As argued by several scholars, cognition has been recognized as a central concept within the literature of strategic management. The full title of Hodgkinson and Sparrow's (2002) textbook is indicative, i.e. "The Competent Organization – a Psychological Analysis of the Strategic Management Process". Similarly, Eden and Spender's (1998) collection of articles contains several that focus on managerial cognition's role in strategic positioning. The relevance of cognition in strategic choice is echoed by Mintzberg and Lampel's "Reflecting on the Strategy Process" (1999) while Gosling and Mintzberg (2003) in their "The Five Minds of a Manager" argue for managers and management to get their minds set on a more holistic and integrative management perspective in order to manage effectively.

A number of publications from leading scholars rigorously argue the cognitive view of management with themes ranging from the relationship between mental models and responses to competitive conditions (Porac et al, 1989), determination of strategic knowledge structures (Lyles & Schwenk, 1992), intra-industry group strategic perception (Reger & Huff, 1993), the variation between individual and collective strategic perception (Hodgkinson & Johnson, 1994) and change management (Kanter, 2003).

Porac et al (1989) analyze the competitive behavior of small firms within the Scottish knitwear industry, particularly how the mental model impacts the interpretation of the competitive milieu. The study points out that some environmental cues are missed or misinterpreted because of the limits to human rationality, and draws attention to how the cognitive processes of the decision makers are influenced by a multitude of factors (beliefs about the identity of the firm, competitors, suppliers and customers and competitive perceptions). The authors focus on explaining the relationship between a group of companies within the same industry and how the collective mental model of their industry is implicitly reflected in the collective cognitive reasoning of the regional network-integrated industry.

Similarly, other scholars study the relationship between the cognitive processes, the mindset and the impacts on firm strategy and implementation. Hodgkinson and Johnson (1994) study a limited number of firms in the UK grocery retail industry using a variant of the "cognitive taxonomic interview" to interview 23 managers. While the study reveals considerable variation in the nature and complexity of the cognitive categories elicited from the interviewees, it also reveals considerable intra-organizational agreement on categories describing self-identity and the competitive ambience of the industry. In other words, the firm, the industry and the environment form and continuously impact the managers' mental model used as an interpretation device.

"The conclusion to be drawn from this analysis is that within each organization, there is a salient focal area associated with each informant's cognitive taxonomy which seems to be widely shared throughout the organization" (ibid, p.544).

Lyles and Schwenk (1992) make references to the role played by the decision-maker in interpreting and enacting changes in the environment which may be of particular relevance for small firms.

"These decision makers have a strong influence on the development of the organizational knowledge structures since it is primarily they who interpret the importance of the environmental events and who communicate their view of the knowledge structure through speeches and statements" (ibid, p.158).

Thus once the key decision-makers have determined that the change challenges the core elements of the knowledge structure or current mindset and interpretative scheme of the

organization, they make changes in the knowledge structure and communicate these changes to others in the organization.

Several cognition-oriented scholars consider that cognition and learning are seen as two sides of the same coin and without particular distinction between individual and collective learning (Hodgkinson & Sparrow, 2002). Contemporary organizational learning theory argues that a fundamental cognitive change in the individual and collective mindset or mental model is required to achieve lasting actionable learning and that this may not happen until the underlying and tacit value system within the organization changes (Argyris & Schön, 1996; Senge, 1990). Many scholars have investigated the propagated relationship between strategic organization learning aimed at gaining competitive advantages, focusing on the relationship between organizational learning, strategic capability as a firm-specific resource and organizational learning and organizational change (Moingeon & Edmondson, ed., 1996; Connor & Prahalad, 1996).

Several scholars, while supportive of the relevance of introspection in the form of dialogue and inquiry, and the idea of intervening in organizational development to prevent falling into learning paradoxes and defensive routines in the learning processes (Argyris & Schön, 1996), question this somewhat simplified approach to organizational learning from both procedural and psychological perspectives (Spender, 1996; Kegan, 1994; Weick, 2002). From a pragmatic and empiric point of view, and possibly from a small firm perspective in particular, one might argue that any business managing to survive or succeed is necessarily a learning organization. Some firms, collectively, learn more effectively than others, whether consciously or not. Depending on the firm-specific context and industry, a knowledge management system may thus reflect itself simply through standards, routines, files, records, information systems or even tacit (rule-of-thumb) heuristics, organizational culture or “esprit du corps”.

Cognitive concepts are central in the scholarship on strategic- and organizational change management and it is hard to draw a clear distinction between the various bodies of literature and research paths. Strategy literature concerning firm networking or internationalization indicates a clear overlap between behavioral, descriptive and cognitive procedural concepts. This also appears reasonable from a more practical managerial perspective, since no implementation of strategy can take place without cognitive phenomena and reflections being part of the process (Johansen & Vahlne, 1993;

Gnyawali et al, 1997; Kanter, 2003; Moingeon & Edmondson, ed. 1996). Since all strategic, organizational or operational changes in business take place through people's minds, as individuals or collectively in groups, cognitive management constructs become critical in exposing, describing and understanding processes of initiation of relationships, processes of interchange of various knowledge types (codified and tacit) both within the firm and externally between firms, and in understanding how new knowledge is created in organizations (Knight, 2001; Ripsas, 1998; Granovetter, 1983; Gupta & Govindarajan, 2002; Nummela et al, 2004; Sadler-Smith et al, 2003; Äyväri & Möller, 2004; Amabile, 1997). The referenced literature, nevertheless, also shows that managerial cognition constructs and processes are underrepresented in the adjacent bodies of literature and that a further disciplinary integration is called for (Hodgkinson & Sparrow, 2002).

2.5 Managerial cognition and methodology

Construct definition, data elicitation procedures, measurement and data-analysis methodology becomes a critical part of research related to cognitive phenomena, as the research field gives researchers ample room for interpretation in the research process.

In contrast to the traditional positivistic research criteria, the epistemology of managerial cognition is based on a social constructivist and interpretive perspective. The common aim of cognitive methodologies is thus to use qualitative methods to describe and explain phenomena as accurately and completely as possible so that their descriptions and explanations correspond to the way the world is and actually operates. The underlying scientific philosophy is that the social world (as opposed to the physical world) is socially, politically, and psychologically constructed, as are human perception, interpretation, understanding and explanation of the physical world (Patton, 2001). The focus of interpretive research is on the ways in which we attach meaning to our experiences and this process is meaningful and commensurate only when experience reveals reality, i.e. when it provides privileged insight into the nature of the universe (Spender, 1996). Weick's scholarship, for one, challenges the long-established notion of an objective environment emphasizing that humans interact and actively and reciprocally influence and construct their own reality (Weick, 1979).

Scholars have noted the very real challenges that need to be met to ensure the reliability and validity of the various assessment techniques currently commonly used in the field of

managerial and organizational cognition (Hodgkinson & Sparrow, 2002). Eden and Spender (1998) take the issue further by suggesting that the question of validity should be viewed from an interpretative rather than a positivistic perspective, with methodology being considered along an epistemological validity-reliability-practicality continuum. Accordingly, validity might be considered from a phenomenological perspective by asking whether the researcher has gained full access to the knowledge and meanings of informants.

The general positivistic view is that reliability is concerned with replicability (Easterby-Smith et al, 1996). While some have argued that the concept of reliability might be inappropriate for qualitative studies (Taylor & Bogdan, 1984), there seems to be agreement among scholars that reliability means ensuring that errors are as evenly distributed as possible – i.e. there is no systematic bias caused by preconceptions held by the interviewers (the researcher), coders or other individuals which may affect the data (Eden & Spender, 1998).

Neither Eden and Spender (1998) nor Hodgkinson and Sparrow (2002), however, specifically elaborate on the challenges of identifying reliable, valid and measurable observable indicators or variables as proxies for non-observable cognitive phenomena. The difficulty of observing and measuring cognitive phenomena has led researchers to propose related observable indicators as proxies. Markóczy (1997), however, commenting on using managers' external characteristics (age, functional background, etc.) as proxies for measurement of individual cognition, alludes to the possible lack of empiric foundation for doing so and suggests using causal mapping techniques to measure individual beliefs and the strength of the causal relationships between them. Similarly, Hodgkinson (2002) debates the sources of bias causing measurement errors when attempting to compare cognitive maps elicited to determine managers' mental models of competition at two different time intervals.

As outlined above, managerial cognition methodologies have traditionally mainly been of a qualitative nature (although statistical analyses are often added to support the findings). However, there appears to be renewed interest in legitimizing more quantitatively-oriented analysis. Recent methodological advances have occurred in the quantitative assessment of managerial and organizational cognition that have created the potential for larger-scale theory testing and analysis of cause-effect relationships based on empiric

data (Hodgkinson & Sparrow, 2002). In addition, researchers are enjoined to combine the traditional methods of managerial cognition, as outlined above, and use them in conjunction with structural equation modeling procedures. *“These methods could also be fruitfully employed to evaluate competing models leading to further understanding of the causal antecedents and consequences of executive cognition in top management teams [...]” (ibid, p. 319).*

In the internationalization literature, scholars have also been encouraged to further investigate the relationship among the explanatory variables so far ignored due to analytical complexities. *“Much of this has been due to methodological constraints, which can be overcome by using advanced statistical methodologies such as path analysis and structural equation modeling” (Dhanaraj & Beamish, 2003, p. 244).*

It is this approach and methodology which will be followed in this research’s empirical phase as elaborated in Part 2 of the thesis.

3 FIRM INTERNATIONALIZATION

In the following, the firm internationalization construct is defined broadly and understood as the process of adapting firms' operations (strategy, structure, resources, etc.) to international environments (Calof & Beamish, 1995).

3.1 Behavioral oriented internationalization models

3.1.1 The psychic distance construct

The concept of psychic distance for mapping relations between cultural proximity and foreignness of international markets has attracted considerable attention in research related to internationalization (Johansen & Vahlne, 1977; Holzmüller & Kasper, 1990; Andersen & Rynning, 1994; Liesch & Knight, 1999). It is based on the assumption that managers, as individuals and as part of an organization, are less likely to initiate and/or pursue business relations with firms in countries perceived to be dissimilar. Conversely, the lower the perceived psychic distance towards a market, the more likely it is that commercial activities with this country will be extended. Consequently, empiric data should confirm (and partly do) that firms have a tendency to establish relations with foreign firms in markets with low psychic distance as this will limit their learning needs and accelerate their internationalization. Though the concept of psychic distance has been well established and generally perceived as a logical explanatory concept, few attempts have been made to rigorously operationalize and empirically test the concept in isolation. In a debated article, Stöttinger and Schlegelmilch (2000) argue that past research has mainly relied on factual indicators, such as publicly available statistics on economic development, education, language, etc. while only few have encompassed the perceptual component of psychic distance, i.e. the perceptual component of perceived psychic distance of the individual manager or decision-maker. The authors argue that using an extended basket of objective variables in an attempt to operationalize the summary character or index of the concept, indicates that based on cognitive mapping, people, i.e. individual managers, develop subjective mental maps of space and distance which need not necessarily correspond to reality or which alternatively simply reflect individual motives and needs. Based on the conflicting results of their research, the authors' raise questions regarding the psychic distance construct's high explanatory ability and power to predict

internationalization performance and call for an identification of additional key factors in the form of explanatory variables that make up the psychic distance construct.

“Psychic distance from a market is a function of the uncertainty that the market holds for an entrant” (Liesch & Knight, 1999, p. 387).

The perceived psychic distance thus appears to depend partly on the individual decision-maker’s *subjective* mindset and partly on more formalized objective and testable organizational decision-making routines.

3.1.2 The stages model

A number of theoretical models have been used to describe firms’ internationalization process. Of these, the model introduced by the Swedish scholars Johansen and Vahlne in their seminal (1977) article on the internationalization process of the firm, laid the foundation for what since has been labeled as the “stages” or “Uppsala”⁵ model (U-model) of internationalization. The model distinguishes specific stages of gradually increasing foreign involvement that firms follow as they internationalize, with emphasis on incremental stage-wise internationalization and use of knowledge concerning foreign markets. The firm enters new markets with increasing psychic distance, defined as aspects of language, culture, business practices, and industrial development, which tends to reduce the efficiency of information flows between the market and the firm (Johansen & Vahlne, 1977; Andersen, 1993). Based on empirical research in larger Swedish enterprises, the central theme of the research is the gradual acquisition, integration and use of knowledge about foreign markets and operations, and on the incrementally increasing commitments to foreign markets. The model portrays firms as minimizing risk and overcoming uncertainty in a step-by-step learning process on the road to internationalization. The sequential stages are a process by which enterprises gradually move from a state of irregular export activities, export via independent agents, creation of an offshore sales subsidiary, and finally towards the establishment of an overseas production facility.

3.1.3 The innovation model

⁵ University of Uppsala, Sweden

The innovation model (I-model) is similar to the U-model, and suggests that internationalization results from a series of management innovations in the form of processes within the firm that evolve as learning stages (Reid, 1981). Scholars seem to disagree on the empirical explanation for what initiates the internationalization process; i.e. whether the managerial innovation to internationalize starts with a “push” mechanism i.e. an external change which motivates a change in managerial and subsequent organizational behavior or whether these changes are due to an internal “pull” or change agent as relevant explanation for why firms move to the next stage (Andersen, 1993).

3.1.4 Criticism of the behavioral models

According to the traditional internationalization literature, both the U-models and the I-models can be regarded as behaviorally rather than cognitively oriented and the gradual pattern of the firm’s internationalization process can mainly be attributed to 1) lack of knowledge by the firm and 2) indecisiveness and uncertainty associated with the decision to internationalize. Cognitive reasons for small firms’ hesitance to internationalize (despite the fact that these firms often have internationalization potential) will be discussed in paragraph 3.2.

The stages models, in spite of their popularity, have been increasingly criticized:

“A problem of the stage models is that these assume a considerable span of time through which a firm can gain experience, accumulate resources, and develop the managerial capabilities required for international operations. The globalization of markets and competition, however, is dramatically reducing that time span and constraining the ability of small firms to control their own development paths” (Dana, 2001, p. 58).

As mentioned above, criticism of the stages models has also focused on the inherent problems of finding logical delimitation of stages. They mostly lack an explanation of the mechanisms that takes the firm through the stages, and the unidirectional change pattern given in these models is almost deterministic in nature (Hauge, 2001; Andersen, 1993; Havnes, 2001). It is argued that the stages models’ unilateral focus on internationalization in form of a stage-wise development from export towards the establishment of a foreign operation applies mainly to larger, multinational companies embedded in the old-world industrial economy paradigm; a paradigm considered outdated in today’s dynamic, heterogeneous and networked economy. For instance, the literature on the globalization of services argues that service firms tend to internationalize in a different way from their

manufacturing counterparts and thus the explanatory power of the stages theory is questionable for the service sector. It is claimed that the robustness of the process models may be diminishing as boundaries between “product” and “service” offerings become increasingly blurred (Bell et al, 2003).

3.1.5 Networking, learning and social interaction – new dimensions of internationalization

Johansen and Vahlne (2003), in a conceptual paper responding to the claim that established models of firms’ internationalization do not capture some important phenomena in the modern international business world, discuss the benefits of reconciling the old process-oriented stages model with an experimental learning-commitment network model of the internationalization of the firm. The authors argue that experimental learning and commitment interact as the driving mechanisms focusing on the learning possibilities arising from business network relationships. The network theory emphasizes the “space” between organizations involved in an exchange (Granovetter, 1983). Firms invest in internal assets and external market assets, the latter bringing greater certainty to the inter-organizational space. The acquisition of information on the market and its actors’ (i.e. external assets) interaction in this process is fundamental to the network perspectives brought forward. In a concluding remark, the authors stress the perceived borderlessness of modern global firms and indicate that this may imply that traditional national-market stages and the concept of psychic distance may no longer be as relevant. The authors’ argue in favor of a renewed focus on the micro-level and individual relationships to explore the phenomena of experimental learning and trust-building processes.

Many scholars try to understand the decision-maker’s role, the significance of the individual’s social leveraging capability, and personal attitudes and belief systems in the internationalization process. In this context, Chetty and Campbell-Hunt (2003) specifically identify the decision-maker’s determination, social networking skills and risk propensity as main driving forces. The authors conclude:

“The implications for theory are that to improve understanding of the internationalization of SMEs (Small and Medium Sized Enterprises) researchers need to integrate internationalization theories with the characteristics of SMEs. Moreover, it is important to note that the attitudes and motivations of decision makers in the SMEs determine the path and pace of internationalization. The implications for managers are that they need to be aware of the importance of issues such as their own attitudes and motivations, timing, coherence, managed growth, business networks and

learning in the internationalization process. In fact, managers need to be aware that the mental models they have could be their main barriers to internationalization" (ibid, p. 814).

3.1.6 Born global and re-born global firms

Literature on born global firms (i.e. small entrepreneurial firms with a global focus from the outset and embarking on rapid internationalization) emerged in the early 1990s (Bell et al, 2003). These firms' behavioral and strategic pattern is often founded on a knowledge-based competitive advantage and often implies a managerial and/or technological innovation. For instance, it is indicative that in the majority of cases a dramatic change in strategic focus converting a small enterprise into a re-born global firm is precipitated by a critical incident or a combination of incidents - in many cases a takeover, a management buy-out or sudden change of decision-maker.

Moen and Servais (2002) debating the concept of born-global firms, argue that market knowledge, the personal network of the entrepreneur, international contacts and experience transmitted from former occupations, relations and education are examples of such international skills obtained before the birth of the firm. This seems to indicate a pre-existing construct or vision of the firm being "born global" or "reborn global" – and that this has to do with the decision makers' or leaders' existing mental model or mindset or change thereto. The authors clearly link the born global concepts to the degree of managers' and personnel's international orientation, concluding that:

"[...] for all firms, the necessity of having a global orientation when they develop new products should be stressed", and

"[...] the results presented in our study underscore the importance of firms having a global orientation, particularly when firms in the establishment phase are developing their first product generation" (ibid, p. 68).

3.1.7 Internationalization as entrepreneurship

Several scholars relate internationalization and networking to the concept of entrepreneurship; i.e. a change process model based on an entrepreneurial paradigm to identify opportunities arising from new combinations of capabilities or resources in response to external demand (Havnes & Senneseth, 2001). McDougall and Oviatt (2000) observe that businesses in an increasing number of countries are seeking international competitive advantage through entrepreneurial innovation while pointing out the

theoretical difficulty of overlap with other constructs such as innovation, change management, strategy and inclusive networking. Their definition of international entrepreneurship as a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and aimed at creating value in organizations, in fact implies a multitude of both explicit and implicit concepts, including many of those concepts discussed herein. Discussing small companies and marketing strategy, Knight (2000) reasons in favor of the role of a proactive entrepreneurial orientation in the operation of small firms under globalization. Similarly, Havnes and Senneseth (2001) hold that an alternative use of resources and active networking are important features of entrepreneurial development processes.

3.1.8 Internationalization and the resource-based view

Firm resources have traditionally been regarded as one of the main explanations for internationalization and internationalization has been positively related to firm size (Philp, 1998). As the definition and perception of firm-specific resources and capabilities have been reevaluated, several scholars have reverted to the resource-based view of the firm as a parsimonious explanatory model of firm internationalization – emphasizing the resource-based view as a logical and deceptively simple model that is easy to understand (Peng, 2001). Offering a more strategic and systematic evaluation of small firms' resources, including codified as well as tacit knowledge, competencies and strategic flexibility, the resource-based view has helped specify the resources by which (social) entrepreneurs can leverage. The resource-based view may be used to analyze how social capital embedded in social ties, networks, and contacts can be regarded as an intangible resource that is difficult to replicate, thus giving small firms possessing such resources a significant and sustainable competitive advantage. Referring to the resource-based view, Knight (2001) states that its basic premise is that it is the firm's ability to generate and build or leverage resources and competencies that is the key to competitive advantage and organizational survival. Small internationalizing firms will respond differently in their efforts to overcome resource/competence deficiencies and such responses will also be contingent on the present level of resources the firm has at its disposal (Bell et al, 2003). For a small firm, one of the deciding elements in this complexity appears to be the underlying mental model which determines how the individual decision-maker perceives the organization's resources and the environment in which it operates. With reference to the preceding discussion of the born global firm, the

resource-based view and internationalization, empiric findings appear to give general support of a positive causal relationship between firm size and internationalization. However, this causality has been explained by so many factors ranging from differences in risk aversion to human resource policy and management attitudes (Calof, 1994) that a generalization is dubious and it would appear that firm size matters only for very small firms. This preliminary conclusion also coincides in principle with Mittelstaedt et al.'s findings (2003) that firm's with fewer than 20 employees appear to be too small, in isolation, to acquire the knowledge or experience necessary to engage in the exporting process. However, the findings on the relevance of size and internationalization are inconclusive beyond general statements and may as well be interpreted to emphasize the relevance of the underlying managerial mindset or mental model; i.e. that the size of the firm, its resources, capabilities and strategic perception are rooted in the *mind* of the interpreting decision maker.

3.1.9 Internationalization indicators

Focusing on export potential and identification of potential exporters, Yang et al. (1992) identify the manager's perception of external (e.g., general environmental) and internal (e.g. firm specific) barriers to exporting as explanatory constructs for small enterprises' hesitance to export. Wiedersheim-Paul et al. (1978) identify firms' pre-export activities as predictors of export. Among the predictors are specific firm objectives, possibly including export as diversification, product line, firm history and regional expansion. The authors also draw attention to the importance of the decision-makers' perception in what they characterize as attention evoking factors or triggering cues influencing a firm towards exporting. Principal attention evoking factors are identified as the decision-makers' experience, internal slack capacity and external stimuli in form of a market opportunity or fortuitous foreign orders. Havnes (2001) deliberates on the conceptual power of the volition of the leading person in the firm and how this volition may be explicitly expressed in clear, precise and deliberate strategies and implicitly reflected in the objectives, motives and attitudes and embedded in the firm's operational procedures. Other scholars relate export propensity to the decision-maker's characteristics and management perceptions of internationalization, but without being able to identify good discriminatory explanations beyond general notions of its relative significance.

Simmonds and Smith (1968) explore nine cases of medium-sized English manufacturing firms' behavior at the start of their internationalization venture and with main focus on outbound activities. Considering export as a type of managerial innovation, the authors discuss explanatory personality characteristics and firm-ambience factors influencing the export decision. Much in line with later studies in the field, reward motivation, tolerance of risk, owner/manager/decision maker's enterprise-drive, slack firm-resources and receptiveness to new ideas and change were found as the main explanatory factors. So too was what the authors' call a "supra-national outlook":

"[...] an attitude of almost complete unconcern for national boundaries where business was concerned" (ibid, p. 97).

Notable, particularly for smaller firms, is the authors' emphasis on internationalization in the form of export initiated by a request from either existing, new domestic or international clients – i.e. an initiative from outside of the firm. Similarly, the authors allude to the interrelationship between outbound and inbound activities in describing one of the firms as having no hesitation in reaching across national boundaries for supplies – a behavioral attitude closely linked to the supra-national outlook. Simmonds and Smith's article, as emphasized by the authors', is exploratory in nature and the findings cannot be generalized. The time that has past since its publication and the authors' very English perspectives, for instance on the relevance of language skills, must also be taken into account for a current interpretation of their findings.

Leonidou et al (1998) discuss how managerial characteristics influence firms' export behavior and confirm general scholarly agreement that decision-makers' age, education, professional experience, foreign country exposure are objective explanatory variables. On a more subjective level, perception of risks and budgetary consequences of foreign ventures are emphasized as well as the decision-makers' level of innovativeness, flexibility, commitment and the perceived complexity of the internationalization project. Other explanatory factors of firms' international orientation are foreign language skills, (Dichtl et al, 1990; Holz Müller & Kasper, 1990), foreign travels and living abroad (Reid, 1981). Clear limitations, as also pointed out by the authors, are the discussion's unilateral focus on export (outbound processes) and limitation to manufacturing firms. Notably, the article does not discuss the possible underlying origins of the cognitive concepts driving firms' internationalization behavior.

3.2 Internationalization of small firms – cognitive perspectives

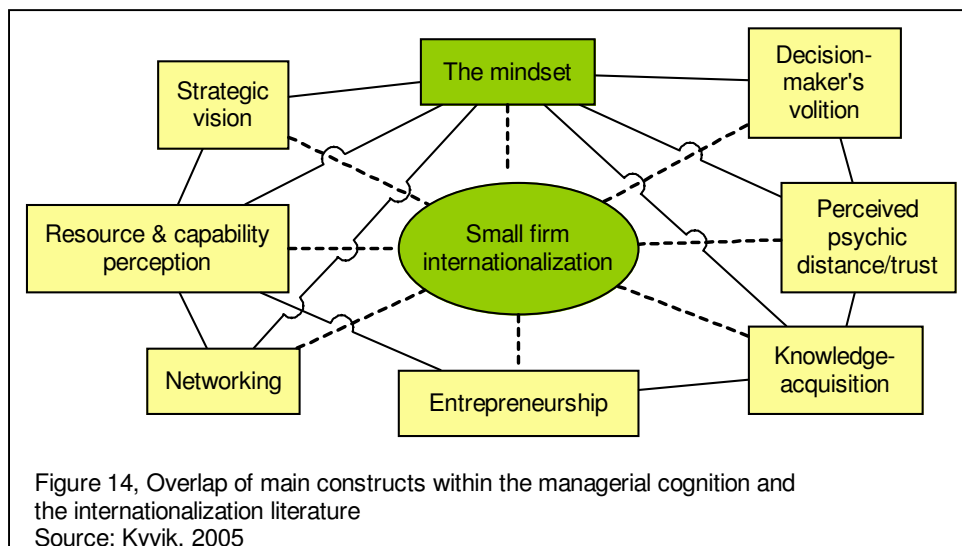
The significance of firm size was mentioned in discussing the resource-based view on firm internationalization. Also from a cognitive capability perspective firm size may matter. From this perspective, it is worth noting that research has recognized that small firms are different from larger enterprises. Baird et al (1994) point out that:

“Small firm characteristics such as limited financial and managerial resources, personalized objectives of owner/managers, and informal centralized planning and control systems indicate that global strategies and structures of small firms may differ from those of larger firms” (ibid, p. 48).

Similarly, Shuman and Seeger (1986) state that:

“[...] smaller businesses are not smaller versions of big businesses... smaller businesses deal with unique size-related issues as well, and they behave differently in their analysis of, and interaction with, their environment” (ibid, p. 8).

With the small firm as the unit of analysis, the further focus is on how cognitive reasoning forms an integral part of the internationalization discourse and the implication of the observation that concepts of cognitive significance are in fact commonly used in parts of the existing internationalization literature (Figure 14). With reference to the preceding review of the managerial cognition literature, attention is drawn to how central managerial *perceptions* may be for small firms’ propensity to internationalize. In other words, such propensity may partly depend on the decision maker’s perception and interpretation through the mindset of resources and capabilities, psychic distance and the firm’s need to acquire knowledge and its ability and willingness to share in-house knowledge.



3.2.1 International market selection

Andersen and Strandskov (1998) discuss the relevance of managerial cognition concepts for international market selection from a marketing perspective. The authors argue that international market selection in principle is the result of a continuous strategic evaluation of perceived market stimuli, thus a cognitive process and methodology play a central, though implicit, role. Pointing out the limits of rational behavioral models dealing with the complexities of interpreting the mass of market stimuli on top of feedback concerning the firms' internal operation, the authors propose a cognitive approach to managerial thinking. In line with the arguments herein, the authors describe how interpretative cognitive processes and mental maps guide action; discuss the use of cognitive mapping in international market selection and highlight certain challenges in using this methodology for decision making (Argyris & Schön, 1996; Eden & Spender, 1998). Notably, the article narrowly focuses on outbound (export) processes and ignores any reference to a broader relevance of cognitive phenomena such as dual directional learning, innovation or networking in the internationalization process.

3.2.2 Antecedents of the internationalization decision

Maignan and Lukas (1997) discuss the antecedents of a firm's entry mode decision into a foreign market. Focusing particularly on the role that managers' cognitive structures play in entry mode decisions, the authors use the concept of mental models to better understand how managers decide upon a certain type of entry mode, arguing that the mental models are used to interpret the environment before decision-making. For their study, the authors differentiated between four types of mental models: self-centered; competitor-centered; customer oriented; and market driven - on the assumption that a given type of managerial representation should reflect itself in empiric management routines and firm behavior. While the authors focus on firms with a mindset of internationalization already in place, they point out the lack of conceptualization of mental models for entry mode decisions.

Yeoh (2005), in a conceptual paper focusing on the ability and motivation for information acquisition prior to exporting, concludes that:

"[...] an understanding of causal linkages between the various dimensions of involvement and risk has provided rich insights into the psychological mechanisms by which these motivational states

occur and their subsequent influence on cognitive and behavioral responses towards internationalization, (ibid, p. 190).

In line with the main theme of this research, the author argues that in addition to understanding motivational determinants of information search, it is equally important to address management's cognitive abilities as they also influence learning and task performance.

3.2.3 The global mindset construct

The textbook "Managing with a Global Mindset" (Jeannet, 2000) makes a call for the need to employ a new global mindset in managing today's globalizing economy. In line with many "how to" books in management science, the author discusses the value of the global mindset construct from a multinational strategic marketing management perspective and presents management tools and analytical methods. The book is descriptive and offer little by way of cognitively appreciating the underlying drivers of the formation of the global mindset construct, while giving ideas for how to maintain the global mindset and how to use it to manage a large corporation effectively (and according to the book) in the global market.

Gupta and Govindarajan (2002) explore the concept of the global mindset grounded in notions from cognitive psychology and organizational theory. The authors argue that the mindset or mental model functions as a cognitive filter, i.e.:

"We are selective in what we absorb and biased in how we interpret it" (ibid, p. 116).

The grounding of the existence of a global mindset can, according to the authors, be ascribed to a person's cognitive knowledge structure, with differentiation and integration as the two main attributes. In colloquial terms, the proverbial functional expert with tunnel vision and little exposure to knowledge outside the functional area has typically low differentiation in knowledge structure. In contrast, a manager with significant and varied experience in multiple functional areas has a more highly-differentiated knowledge structure and is unlikely to exhibit tunnel vision. According to the authors, integration in knowledge structures refers to the extent to which a person can integrate disparate knowledge elements. In summary form, the authors emphasize the following explanatory variables for a global mindset: curiosity about the world, personality makeup in early

childhood, willingness to change, education (language skills/foreign markets/cultures), cross-border projects, international team-collaboration/networking and foreign work experience. Employing a reasoning analogous to Senge (1990) and Argyris and Schön (1996) on the relevance of continued dynamic inquiry to alleviate defensive routines, the authors conclude that:

“How successful a company is at exploiting emerging opportunities and tackling their accompanying challenges depends crucially on how intelligently it observes and interprets the dynamic world in which it operates. Creating a global mindset is a central requirement for building such intelligence” (ibid, p.125).

Nummela et al (2004) study the causal relationship between the global mindset of information and technology firms and export performance. The authors point out that the global mindset concept includes both cognitive-attitudinal and behavioral elements, where the concept is said to describe a manager’s openness to and awareness of cultural diversity and the ability to handle it. Focusing narrowly on the drivers of a global mindset and export performance, the authors use international work experience, international education, market-globalness and turbulence of the market as explanatory variables for the existence of a global mindset. The authors, however, do not elaborate on the grounding or formation of the cognitive dimensions underlying the explanatory variables used in the study.

3.2.4 A holistic approach to internationalization

With reference to the internationalization literature reviewed, it is only the articles by Welch and Luostarinen (1993) and Fletcher (2001) that specifically discuss learning consequences and interaction between outbound and inbound internationalization processes. Regarding internationalization models, Fletcher proposes a holistic approach to firm internationalization based on the observation that in a global market a firm needs to be both internationally competitive and cooperative - engaging in activities ranging from different levels of inbound processes (importing) to outbound processes (exporting) and involving products, services and learning-collaborative networking processes. The author emphasizes the relationship between these processes, stating that:

“[...] research indicates that the management and firm characteristics that previous research attributed to outward-driven internationalization also applied to inward-driven internationalization and internationalization overall” (ibid, p.44).

Similarly, Welch and Luostarinen (1993) compare foreign sourcing activities with the traditional outbound focus of the internationalization literature pointing out that sourcing is likely to be the first international activity for many firms in the increasing globalization of industry, communication, travel, etc. Like Fletcher (2001), the authors emphasize learning effects, stating that inward internationalization factors may play an important contributory role, in various ways, in later outward moves among companies.

3.2.5 Cognition from an internationalization-capability perspective

Townsend and Cairns (2003) argue the importance of improving managers' global capabilities in a managerial education context. The authors point out that this requires going beyond old concepts such as "exporting" and "overseas" and include the education of a broader mindset involving a model of cultural learning. Referring to Bennett (1996), it is stated that in order for teachers to be effective with students of diverse backgrounds, it is very important for them to first recognize and understand their own worldviews; only then are they able to understand the views of their students. The same argument is likely to be valid for most managers' recognition of foreign clients and suppliers and may be particularly applicable to small-firm decision-makers, who act as gatekeepers of small firms' internationalization activities.

3.2 Literature review – concluding remarks

The distinction between behavioral- and cognitive oriented internationalization literature is admittedly ambiguous as the two perspectives do overlap and many scholars discuss behavioral as well as subjective and interpretative variables underlying firms' internationalization. However, in the same way as living is a cognitive act (Maturana & Varela, 1987); so too is firm internationalization. Numerous scholars point out the significance of the relationship between individual CEOs and managers' cognitive processes and firm internationalization behavior and equally how this relationship may not been given due attention in the literature (Baird et al., 1994; Chetty & Campbell-Hunt, 2003; Moen & Servais, 2002; Nummela et al, 2004; Gupta & Govindarajan, 2002; Madsen, 1998; Reid, 1981; Townsend & Cairns, 2003). In line with recommendations found in both the managerial cognition- (Hodgkinson & Sparrow, 2002; Porac et al, 1989; Lyles & Schwenk, 1992) and the internationalization literature (Andersen & Rynning, 1994; Chetty & Campbell-Hunt, 2003), the small firm chief executive officer (CEO) is taken

as the decision-maker and “mindsetter” for the purposes of this research and is used as the research’s chief informant.

Table 1 (below) classifies variables identified in the literature as particularly relevant for small firm internationalization from either a behavioral- or cognitive oriented perspective and makes references to literature in which the constructs are discussed. The table outlines level of analysis and makes a distinction between objective variables in the behavioral- and subjective variables in the cognitive literature. The table also briefly summarizes which independent and dependent variables are commonly focused on in the literature, the theories applied and methods used for analysis. The variables and constructs in Table 1 thus serve as a focused summary of the research’s conceptual literature review and identify the theoretical constructs which form the basis for the operationalization of the research’s empirical phase.

The internationalization of small firms: A cognitive perspective

	BEHAVIORAL PERSPECTIVE	Ref.	COGNITIVE PERSPECTIVE	Ref.
Level of analysis	The firm		The individual decision maker The firm	
Independent variable(s)/ proxy - indicators	Objective variables		Subjective variables	
	Decision-maker characteristics:		Individual level:	
	Groundings (childhood ambience)	14		
	CEO-age	2, 5, 6, 9	Curiosity	14
	Ethnic origin	6	Cognitive bridge-building capability	14
	Educational background	1, 5, 14, 6, 8	Perceived cognitive distance	9
	International education	5, 16	Perceived psychic distance	5, 16, 9
	Professional experience	6	Perceived complexity	6, 8
	Foreign language proficiency	5, 6, 9	Locus of control	20
	International exposure	5, 6, 14, 16	Change resistance	5, 8
	Diversity exposure	14	Flexibility/Adaptability	6, 8
	Time spent working abroad	6, 14	Perceived market globalness	3, 16
	International travel	9	Managerial risk-perception/-tolerance	5, 6, 8
	Association membership	9	Networking capability	7, 19
	Firm characteristics:		Collective level:	
	Firm size (employees)	2, 3, 4, 7	Innovativeness/pro-activeness	6, 8, 16
	Firm age (start-up/old firm)	2, 3	Perception of profit/cost/growth	6, 8
	Management quality/dynamism	6	Networking propensity	12
	Ownership/ownership-structure	8, 10	Learning/R&D-orientation	8, 14, 17
	Location/spatial bias/proxim. university	19	Commitment	6, 14, 16
Technology-level	2, 19	International vision	8, 16	
Domestic market coverage	1, 19	Motivation to internationalize	8, 9	
Num. of products/services/customer groups	1	Positive attitude towards exporting	5, 8, 9	
Resources	8, 15, 18, 19	Service/manufacturing orientation	1, 3	
Formalized strategic planning	2, 3, 15, 16			
Past performance/growth	9, 12, 19			
Cross-border endeavors	14			
Environmental characteristics:				
International competition	16			
Market dynamism/turbulence	2, 3			
Competitiveness (service/price/product)	10			
Dependent variable(s)	Export intention	1, 10	International market selection	13
	Export/export growth	2, 3, 19	International orientation	19
	Propensity to export	4, 15	Foreign market entry-mode	15
	Foreign market orientation	5	International performance	16
	Export/non-export behavior	6, 7, 9	Global mindset	8, 14, 16
			"Global capability"-education	17
			Inward-outward processes/learning	8, 18
Theories	Export management Internationalization		Internationalization Managerial cognition	
Methods	Mixed qualitative and quantitative Quantitative (survey) Literature analysis		Quantitative (survey) Qualitative (cognitive mapping/interviews)	
References	1) Andersen & Rynning (1994) 2) Andersson et al (2004) 3) Baird et al (1994) 4) Calof (1994) 5) Dichtl et al (1990); Holzmüller & Kasper (1990) 6) Leonidou et al (1998) 7) Mittelstaedt et al (2003) 8) Simmonds & Smith (1968) 9) Reid (1981) 10) Yang et al (1992)		11) Dörrenbächer (2000) 12) Havnes & Senneseth (2001) 13) Andersen & Strandskov (1998) 14) Gupta & Govindarajan (2002) 15) Maignan & Lukas (1997) 16) Nummela et al (2004) 17) Townsend & Cairns (2003) 18) Welch & Luostarinen (1993); Fletcher (2001) 19) Wiedersheim-Paul et al (1978), Hedlund et al (1990) 20) Hodgkinson & Sparrow (2002)	

Table 1, Behavioral and cognitive oriented internationalization literature (cognitive oriented literature in bold italics)

4. THE CONCEPTUAL MODEL

Research questions

The research focuses on answering the following research questions:

1. What is the relationship between a small-firm CEO's personal background and the existence of a global mindset?
2. What is the relationship between the CEO's work experience and the characteristics of the small firm and the existence of a global mindset?
3. Does the existence of a global mindset influence the internationalization behavior of the small firm?

The conceptual model's main constructs and hypotheses

Most theories in the social and behavioral sciences are formulated in terms of hypothetical constructs that cannot be observed or measured directly. Conversely, the measurement of hypothetical constructs is accomplished indirectly through one or several observable indicators, representing the non-observed latent construct, often in the form of responses to survey items edited so as to optimally represent the construct.

The conceptual model hypothesizes that the following indicators, via latent constructs, cause the formation of a global mindset:

1. Childhood grounding construct (M1)- Indicators grounded in family- and social factors during childhood: According to Gupta and Govindarajan (2002):
"Curiosity and openness about how the world works reflect an attitude, an element of the individual's personality makeup. Like other elements of personality, it is shaped heavily by early childhood experiences and becomes more resistant to change with age" (ibid, p.120).

Similarly, discussing global leadership capability, Jokinen (2005) comments:

"From the point of view that global leadership competencies are not task, but context specific (that context being the global environment), childhood and family background should also be assessed as possible predictors of global leadership potential" (ibid, p. 212).

Wind and Crook (2005) confirm this perspective by pointing out the importance of childhood's education, training, ambience, rewards and incentives and personal experience in forming mental models.

Gardner (2004) similarly states:

"While it is easy and natural to change one's mind during the first years of life, it becomes difficult to alter one's mind as the years pass. The reason, in brief, is that we develop strong views and perspectives that are resistant to change" (ibid, p. 17).

H₁-Childhood grounding: *Exposure to diversity and appreciation of international experiences while growing up are positively related to having a managerial global mindset*

2. **Education construct (M2) - Indicators grounded in level of formal education and language skills:** The literature indicates the existence of links between educational level (Andersen & Rynning, 1994;; Holzmüller & Kasper, 1990; Gupta & Govindajaran, 2002) and language skills (Dichtl et al, 1990; Leonidou et al, 1998; Reid, 1981) and the existence of a global mindset.

H₂-Education: *Educational level and foreign language proficiency relate positively to having a managerial global mindset*

3. **Decision maker characteristics construct (M3) - Indicators grounded in decision maker characteristics:** Commonly claimed indicators found to be linked to a global mindset are cross-disciplinary collaboration (Gupta & Govindajaran, 2002), being flexible and reflective (Leonidou et al, 1998), having locus of control (Hodgkinson & Sparrow, 2002), networking propensity (Havnes & Senneseth, 2001) and networking capability (Mittelstaedt et al, 2003; Wiedersheim-Paul et al, 1978; Hedlund et al, 1990).

H₃-Decision-maker characteristics: *Cognitive flexibility, cross-disciplinary collaboration and networking relate positively to having a managerial global mindset*

4. **Work experience construct (M4) - Indicators grounded in work experience and international exposure:** Substantive indicators with links to the global mindset are work experience (Bundersen, 1995; Leonidou et al, 1998) and exposure to

internationalization (Dichtl et al, 1990; Holzmüller & Kasper, 1990; Gupta & Govindarajan, 2002; Nummela et al, 2004).

H₄-Work experience: *Diverse work-experience and international work exposure relate positively to having a managerial global mindset*

5. Firm characteristics construct (M5) - Indicators grounded in firm characteristics: Indicators linked to the global mindset are technological level (Andersson et al, 2004; Wiedersheim-Paul et al, 1978), research and development orientation (Simmonds & Smith, 1968; Gupta & Govindarajan, 2002; Townsend & Cairns, 2003), access to resources (Maignan & Lukas, 1997; Welch & Luostarinen, 1993; Fletcher, 2001), market dynamism and degree of internationalization (Baird et al, 1994; Andersson et al, 2004; Nummela et al, 2004).

H₅-Firm characteristics: *Technologically advanced operation, research and development, resource access and operations in a dynamic international market relate positively to having a managerial global mindset*

6. Global orientation construct (M6) - Indicators grounded in the decision makers' global orientation: Variables linking global orientation and a global mindset are management's degree of pro-internationalization (Reid, 1981), global market vision (Simmonds & Smith, 1968; Baird et al, 1994; Nummela et al, 2004) and openness to international ideas (Gupta & Govindarajan, 2002).

H₆-Global orientation: *Vision of the world as one marketplace, sensitivity to foreign ideas and cultures and prioritizing internationalization are expressions of having a managerial global mindset*

7. Domestic firm performance (M7) – Indicators grounded in domestic firm performance: Indicators linking domestic performance to a global mindset are domestic performance satisfaction (Reid, 1981; Andersen & Rynning, 1994; Havnes & Senneseth, 2001; Wiedersheim-Paul et al, 1978; Hedlund et al, 1990) and domestic networking activity (Mittelstaedt et al, 2003).

H₇-Domestic firm performance: *Satisfactory domestic firm performance and networking relate positively to having a managerial global mindset*

The decision maker's global mindset is hypothesized to positively influence the firm's internationalization behavior:

H₈-Firm internationalization behavior: *A CEO's global mindset reflects itself in the internationalization behavior of the firm*

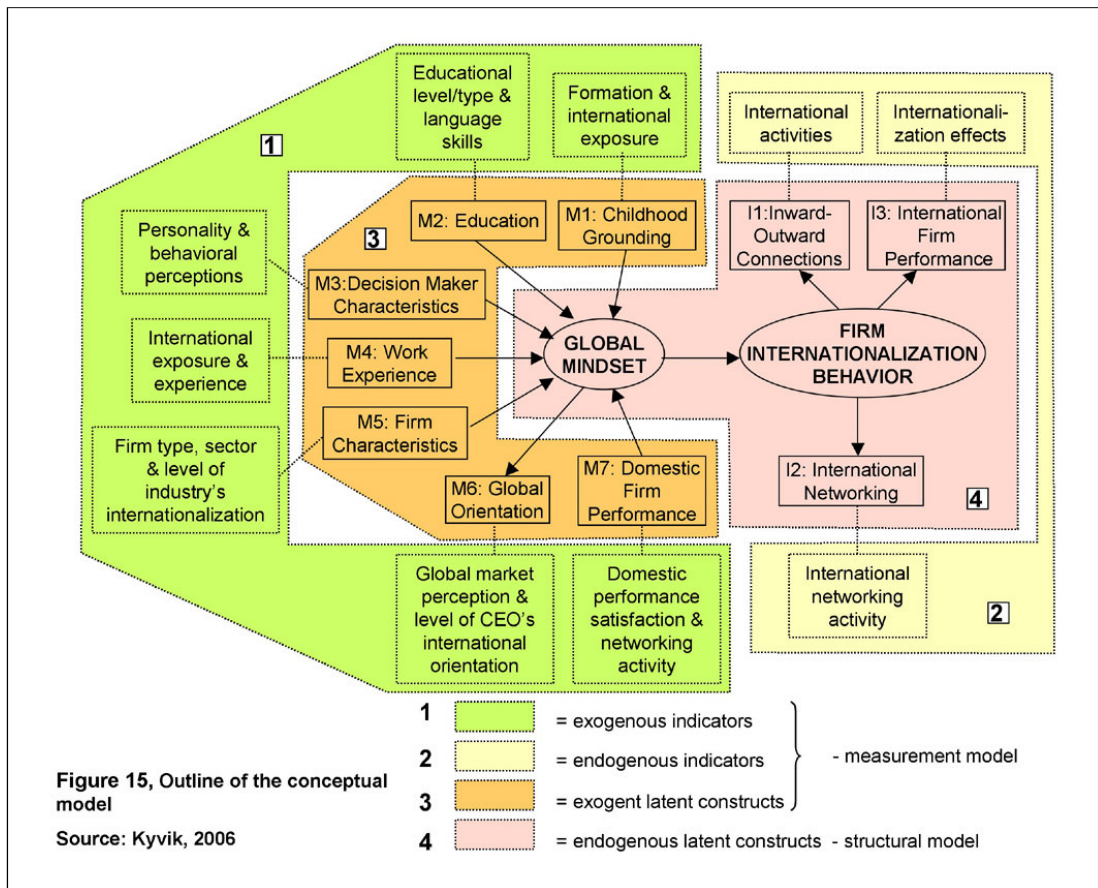
The firm's internationalization behavior construct is hypothesized to have an effect on the following indicators:

1. *Inward/outward connections (I1) - Indicators which reflect the firm's international inward-outward connections:* Indicators of the firm's international transactions of tangible and intangible products and services. The measures are a combination of factual indicators not verifiable by standard financial measures.
2. *International networking (I2) - Indicators reflecting the firm's international networking behavior:* Indicators of the firm's international networking behavior including explanatory motives behind the behavior.
3. *International firm performance construct (I3) – Indicators based on the firm's international performance:* Indicators include financial effects-, knowledge effects and firm-image effects of internationalization (Nummela et al, 2004). These indicators are measures not verifiable by cross-validation since the effects of internationalization are not distinguishable in standard financial reports.

With reference to the preceding literature review's discussion of potential learning benefits of a joint analysis of outbound/inbound internationalization activities, the research seeks to use internationalization performance indicators from a wide perspective to discover what kind of impact internationalization has on the firm and whether the firm's capabilities are enhanced (Madsen, 1998).

Conceptual model

The conceptual model is outlined in Figure 15⁶. It distinguishes between seven exogenous latent constructs, noted M1...M7 and five endogenous latent constructs, noted I1...I3, plus the latent global mindset- and firm internationalization behavior constructs. Note that in this context the word *construct* is a conceptual term used to describe a phenomenon of theoretical interest (Cronback & Meehl, 1955; Nunnally, 1978; Schwab, 1980), but with the intention that constructs are real and existing apart from the mere awareness and interpretation of the researcher and persons under study (Edwards & Bagozzi, 2000). Constructs M1...M7 and I1...I3 are latent, not directly observable constructs that are measured indirectly by a collection of data on closely related observable indicators. The dependent global mindset and firm internationalization



behavior constructs of the structural model are similarly latent constructs measured indirectly via the observable indicators of the measurement model.

⁶ Figure 15 is a holistic and contextual outline of the modeling process and the operationalization of the research

With reference to Figure 15, all independent variables and indicators are assessed with survey instrument items rigorously developed based on constructs deduced from the preceding literature review and as summarized in Table 1. In this respect, the conceptual model is confirmatory by seeking to verify that the relationships rooted in substantive theory, as well as in experience and practice, are in fact validated by the empirical data collected by the questionnaire. While most of the literature references in Table 1 refer to internationalization in the form of export, conceptual and measurement amendments are made to accommodate the research's holistic global mindset construct and to reflect the research's bidirectional and holistic definition of internationalization.

4.4 Operationalization of variables: Causality direction of formative versus reflective indicators

With reference to the conceptual model in Figure 15, the hypothetical constructs that cannot be observed or measured directly are operationalized indirectly through several indicators, such as responses to questionnaire items that are reasoned to represent the latent construct adequately. The constructs are thus measured through selected multiple observable measurement indicators included in the survey questionnaire. A combination of several indicators into a composite measure of the latent construct is deemed to yield a more reliable measure (Singleton & Straits, 1999).

Edwards and Bagozzi (2000) suggest four consensus conditions as supported by literature for establishing causality in the social, behavioral, and management sciences:

1. Causality requires that the cause and effect are distinct entities: usually satisfied by a definitional distinction between construct and measure.
2. Causality requires association, meaning that the cause and effect covary: usually regarded as a necessary but not sufficient support for a hypothesized causal relationship between a construct and its measures.
3. Causality requires temporal precedence, such that the cause occurs before the effect: validated through reflective mental experiments of construct and measure and cause and effect.
4. Causality requires the elimination of rival explanations for the presumed relationship between cause and effect: validation may be achieved through

variation in instrument and method of data collection or alternatively through reflective mental experiments and reasoning.

As a matter of record, throughout the research process it has been implicitly deduced that the exogenous indicators for the latent constructs M1-M7 of Figure 15, with the exception of the global orientation construct (M6), are formative indicators while indicators I1-I3 are reflective or effect indicators. In this context, formative indicators are observed variables that are assumed to cause a latent variable while for effect indicators the latent variable causes the observed variables (Bollen, 1989). A measurement perspective based on formative indicators reflects the notion that:

"[...] in many cases, indicators could be viewed as causing rather than being caused by the latent variable measured by the indicators" (MacCallum & Browne, 1993, p. 533).

Similarly, according to Bagozzi (1994):

"[...] when a latent variable is defined as a linear sum of a set of measurements or when a set of measures of a dependent variable is determined by a linear combinations of measures of independent variables, the measures are termed formative indicators; the measures produce the constructs so to speak" (ibid, 1994, p. 332).

According to the methodology literature, formative indicators are best measured constructing composite measure *indices* (Diamantopoulos & Winklhofer, 2001; Diamantopoulos & Siquaw, 2002) with the objective of explaining abstract (unobserved) variances, considering multicollinearity among the indicators and emphasizing the role of indicators as predictor rather than predicted variables. Most researchers in the social sciences, however, assume that indicators are reflective effect indicators while ignoring cause- or formative indicators in spite of their appropriateness in many instances (Diamantopoulos & Winklhofer, 2001). The choice of a formative versus a reflective specification thus depends on the causal priority between the indicator and the latent variable (Bollen, 1989). In particular, formative measures, though potentially applicable to the measurement of individual characteristics is particularly relevant for dealing with organizational and social constructs – that is, when the unit of analysis is the firm or group (Bagozzi, 1994). More specifically, as reported in Diamantopoulos and Winklhofer (2001) constructs such as personality or attitude are typically viewed as underlying factors that *give rise to* something that is observed. Their indicators then tend to be characterized as reflective. On the other hand, when constructs are conceived as explanatory

combinations of indicators that are determined by a combination of variables, their indicators should be formative (Fornell & Bookstein, 1982).

With reference to the conceptual model, the elaboration of the four causality consensus conditions above and the preceding discussion, it is found reasonable to uphold the implicit assumption that the exogenous indicators (M1-M7) of the global mindset construct, with the exception of the global orientation construct (M6) are formative, while the indicators I1-I3 of the endogenous firm internationalization behavior construct are reflective.

A composite of childhood *grounding* (M1) indicators, for instance, are believed to be forming and causing the existence of a latent global mindset. That is to say, it is reasonable to believe that a decision maker growing up in a setting where one or both parents travel abroad regularly and relate their experiences in the family circle may naturally contribute to the formation of a global mindset in a future manager. The *education* indicators (M2), *decision maker characteristics* indicators (M3), *work experience* (M4), *firm characteristics* (M5) and *domestic firm performance* (M7) are similarly reasoned to relate positively to the global mindset latent construct. Again, it appears reasonable to assume that these indicators are formative – i.e. that the causality arrow goes from the exogenous construct's indicators to the global mindset latent construct.

Diamantopoulos and Winklhofer (2001), when discussing validity problems related to formative indicators, present two approaches. One is to test the quality of individual indicators by correlation to another variable external to the index and retain only those indicators, which correlate significantly.

“A more satisfactory approach to validation, allowing the assessment of the proposed indicators as a set (i.e. taking account of their interrelationships), is to include some reflective indicators and estimate a multiple indicators and multiple causes (MIMIC) model” (ibid, p.272).

Actually, the MIMIC model – *a two construct model with formative and reflective indicators*, discussed by Diamantopoulos and Winklhofer (2001) has much in common with the structure of the proposed conceptual model. In line with the principles outlined by Diamantopoulos and Winkelhofer (2001) and with reference to the preceding discussion of formative versus reflective indicators, it was eventually deemed appropriate (given the construct's close association with the global mindset construct) to treat the global

orientation construct (M6) as a reflective exogenous construct and thus with the direction of causality proceeding from the global mindset construct to the global orientation construct.

Finally it is noted, however, that no measured indicator or set of indicators perfectly validates the underlying latent construct of interest due to errors caused by empirical construct validity and construct reliability difficulties (Hair et al, 2006 – forthcoming); i.e. the resulting variables are unable to fully explain endogenous latent constructs.

4.5 Data collection instrument and questionnaire design

Once the decision to use a survey instrument to collect the empirical data had been taken, the search started for software to be used for the design of the questionnaire and the management of the survey process. The theoretical basis for the questionnaire's main constructs and the individual variables have been discussed in Part 1 of the thesis.

A first search on the internet resulted in a choice between hundreds of different "questionnaire software" packages. The author had, however, noticed that the invitation to participate in a yearly business survey from a Norwegian bank is distributed by e-mail and collects data using a software program named "QuestBack". This turned out to be a web-based Norwegian software package for market surveys and research. Upon contacting the company, a free version was made available for use in the research. The software was of great help in the design-phase of the questionnaire. It is flexible and can operate in several languages simultaneously – thus allowing one to run both a Norwegian and an English version of the questionnaire at the same time. The software is also helpful in managing the database with the e-mail addresses to each CEO in the random sample and by coordinating the dispatch of the invitation e-mail, follow-up reminders and monitoring of responses. The program also offers a convenient export-facility of data to SPSS for subsequent data-analysis.

The data collection instrument is structured in accordance with the conceptual model and includes sections with question-items collecting data for each of the constructs. The questionnaire has 84 questions and it takes a respondent about 10 minutes to fill out the questionnaire when it is opened on a personal computer from a link in the e-mail invitation. In spite of being relatively extensive, the survey instrument is easy to fill out

based on a multiple response, battery-type design with explanations given to the respondent along the way. Also, the progress is indicated in percentage at each stage as the respondent progresses through the questionnaire. A hardcopy of the questionnaire's English and Norwegian versions are included in Appendix 3. The measurement instrument developed for the data-collection process is discussed in paragraph 6.5.

The questionnaire was designed in English and subsequently translated to Norwegian and tested on a representative group of small firm decision-makers and business students to avoid possible problems related to the translation of the questionnaire, understanding of constructs or possible semantic confusion.

4.6 Questionnaire distribution channel

As briefly mentioned above, it was early decided to use an e-mail based survey instrument for data collection. In line with Dillman (2000), it was reasoned that:

"Self-administered questionnaires are now poised to benefit enormously from information age technologies" (ibid, p. 7).

As will be further described below, the data collection process was fast and efficient.

4.7 Use of reply incentive

Anticipating difficulties getting responses from busy and operationally oriented small firm decision-makers, it was realized that some kind of attractive incentive should be offered to motivate CEOs and owners to respond. The decision was made to offer a lottery of a weekend-trip for two persons to Barcelona. The lottery incentive was decided on taking into account Dillman's (2000) argument that small token financial incentives with a request to respond to a mail questionnaire can improve response rates significantly. According to Dillman (2000) lotteries have only a relatively small, if any, effect on responses. However, with reference to financial incentives, when using an e-mail/web-based data collection strategy, the choice of token financial incentives is not possible since no hardcopy of the invitation letter and questionnaire are exchanged and no real monetary or in-species incentive may be *digitally* included in the invitation to participate in the research project.

Thus in spite of Dillman's critical comment on the effects of using lottery-incentives, the chosen reply incentive was deemed the most effective strategy.

PART 2 – EMPIRICAL RESEARCH

5. RESEARCH DESIGN

The chosen research design (Figure 16) was revised in the light of feedback from presentations at several doctoral workshops⁷ and academic conferences⁸. From the researcher's personal perspective, the research design was perceived as being evolutionary, unfolding and even somewhat exploratory. This is depicted by Figure 16's *feedback-loops* indicating the numerous revisions of the design, as well as the literature as the research project developed.

While opting for a quantitative approach to the data collection and data analysis, the research design is based on a constructivist and interpretist research philosophy as the literature and theoretical constructs behind the conceptual model are rooted in a cognitive perspective of management.

The research project is cross-sectional and as such represents a snapshot view of the firms' activities and status of processes at the time of the survey. This approach is in line with other similar studies (Nummela et al, 2004; Baird et al, 1994; Andersson et al, 2004). Being aware that a cross-sectional design may limit the strength of the conclusions about the (causal) relationships in the conceptual model,

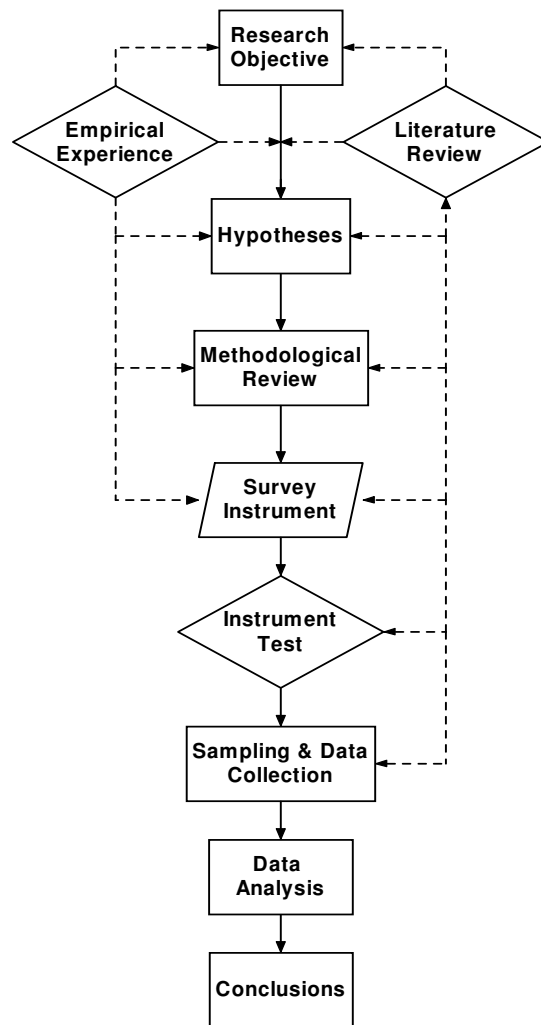


Figure 16. Research-design
Source: Kyvik, 2005

⁷ The European Institute for Advanced Studies in Management's (EIASM) 11th Workshop on Managerial and Organizational Cognition (2005); European Doctoral Programmes Association in Management and Business Administration's (EDAMBA) Summer Academy (2005)

⁸ European International Business Academy's (EIBA) Annual Conference (2005); European Academy of Management's (EURAM) Annual Conference (2006)

great efforts have been made to firmly base all constructs on existing theory while at the same time extending past research with a focus on the hypothesized causal relationship between the constructs in the conceptual model.

As already outlined, the operationalization of the research is effectively quantitative by using an internet/web-based survey instrument to collect data and to measure the global mindset and the firm internationalization behavior primarily based on Likert-scale measures.

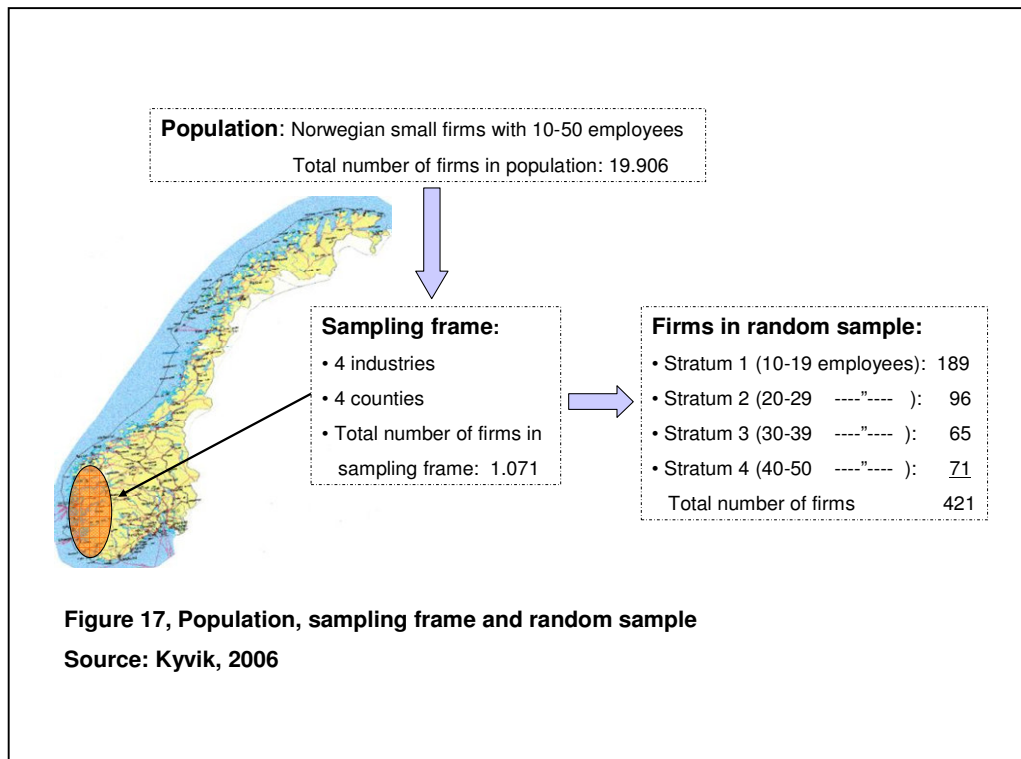
6. DATA COLLECTION, METHODOLOGY AND ANALYSIS

6.1 Data collection

6.1.1 Population and sampling frame

Cognitive phenomena and internationalization implicitly and explicitly have relevance for all firms in all locations, and the population selected for this research is Norwegian small firms within the counties of “Rogaland, Hordaland, Sogn og Fjordane, Møre og Romsdal” located on the West Coast of Norway, see Figure 17. According to Norwegian Statistics, these counties are among the most industrialized in Norway with manufacturing, oil and gas exploration, maritime shipping and other maritime industries, including fishing and sea farming, as main sectors and with a web of related businesses.

Further, the population is restricted to firms with limited responsibility with 10-50



employees within the industrial sectors of fishing⁹, mining and quarrying¹⁰, manufacturing and maritime shipping. Given that the research project’s focus is on the global mindset and firm internationalization behavior, sub-sectors of the population considered likely to be

⁹ Including fish-farming

¹⁰ Including oil and gas exploration

influenced by the globalization trend and/or industrial internationalization were selected. On this basis, retailers (NACE-code¹¹: 52.110), baking firms (NACE-code: 15.810) and subsidized industrial firms (NACE-code: 85.335) were excluded from the manufacturing sector. Similarly, single-purpose fishing firms¹² (NACE-code: 5.011) were excluded from the fishing sector. With these adjustments, the final sampling frame is considered to reflect the Norwegian industry-population of small firms well, while at the same time, considering the firm-size demarcation, likely to represent both domestically oriented and internationalized firms. The above considerations are in line with other studies of the international involvement of small firms – the population is not influenced by regional or non-industry specific government programs aimed at increasing the international involvement of small firms (Baird et al, 1994).

Since the purpose of the research involves identifying the relationship between the global mindset construct and internationalization behavior across industries and to allow a broader interpretation of results, the population is not restricted to one particular industry. Rather, to obtain an adequate sample size for statistical tests and to provide a basis for broad interpretation of the results, a multi-industry population is selected (Robinson & Pearce, 1983). The firm population was identified using the Norwegian Company Registry database¹³, limiting the search to the criteria already discussed. As per Figure 17, a total of 1.071 firms were identified.

6.1.2 Random sampling procedure

In order to ensure that a proportional number of firms in the different size-categories were included in the random sample a stratified sampling procedure (Singleton & Straits, 1999; Leonidas et al. 1998) was used. As per Table 2, strata were chosen based on firm size measured as number of employees with the objective of reaching a sample profile reflecting the firm-size profile of the sample frame population and taking into account that the large majority of the Norwegian firm population consists of small firms¹⁴ with less than 10 employees.

¹¹ NACE: Classification of Economic Activities in the European Community

¹² Typically small firms owning one fishing ship where the crew on the vessel are employees

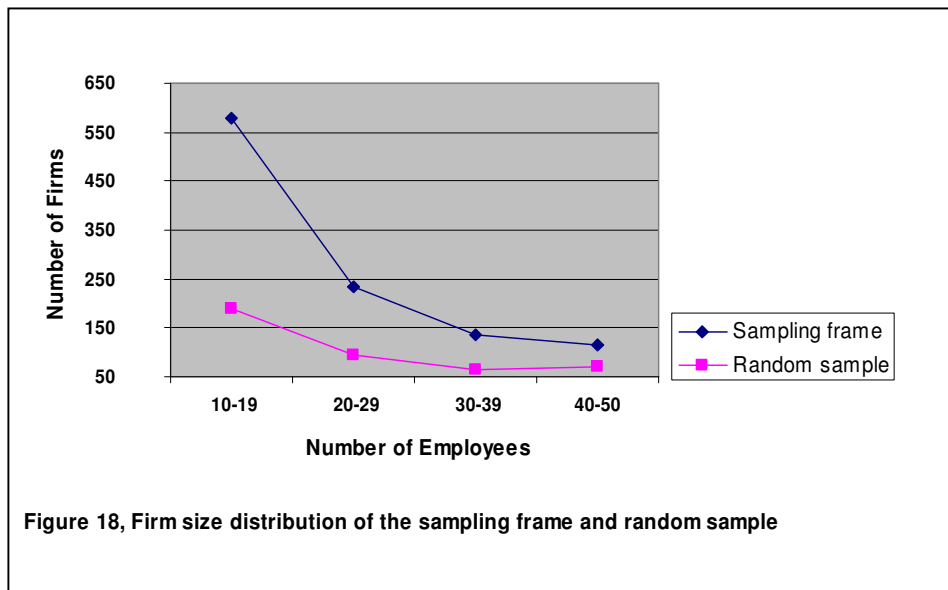
¹³ Brønnøysund Katalogen (www.ravn.no)

¹⁴ About 92% of all Norwegian firms has less than 10 employees, while 7% has between 10 and 50 employees (Statistics Norway, 2001)

Size stratum (employees)	Number of firms		Sample/ sampling frame ratio
	Sampling frame	Sample	
10-19	626	189	30%
20-29	215	96	45%
30-39	137	65	47%
40-50	93	71	76%
Total	1.071	421	

Table 2. Firm size distribution of random sample

Figure 18 illustrates the firm size distribution of respectively the sampling frame and the random sample.



The random sample list of firms is included in Appendix 1.

6.1.3 Pre-survey-publishing confirmation of e-mail addresses

The Norwegian company-registry gives company name, number of employees, turnover, name of owner/manager/leader, organizational form, sector, postal address, telephone/fax and for about 36% of the population also an e-mail and/or a company web page address. Attempts were made to complement the registry's data with data from the private "Kompass" database providing international trade statistics for business-to-business use. However, based on experience with the quality of the content in both databases, it was

soon realized that many of the available and readily accessible e-mail addresses were unusable as both firms and CEOs change e-mail addresses frequently. To complicate matters further, in most cases when a company publishes a contact e-mail address, it is a commercial e-mail, rather than the e-mail address of the CEO/decision-maker. Consequently, as per Nummela et al (2004), the decision was made to contact each firm in the random sample by telephone in order to get confirmation of the CEO's personal e-mail address as well as promoting the research and establish the firms' willingness to participate in the research project by responding to the questionnaire.

With reference to the decision to use a lottery as incentive, when this was communicated to the sample-members during the pre-survey-publication campaign, a number of CEOs found this so interesting that they specifically requested that the invitation mail to participate in the research project make special mention of the lottery.

The pre-survey publishing telephone campaign was completed in December 2005, about 4 weeks before sending out the questionnaire to the firms in a sample now consisting of confirmed CEO e-mail addresses. This time-delay was consciously decided on to avoid the Christmas/New Year holiday and the CEOs first days of "post vacation stress" upon returning to work in the beginning of January, 2006.

6.1.4 Key informants

As the sample consists of small firms, the decision-maker's personal statements should represent reasonable reflections of the current internationalization reasoning, history, present activities, as well as, indicate actions that the firm is likely to undertake (Fishbein & Ajzen, 1975; Andersen & Rynning, 1994). The survey instrument was targeted specifically at CEOs, managing directors and/or owners, who are considered the most knowledgeable informants regarding internationalization issues in small firms. The decision to use the small firm decision maker as key informant tallies with Reid (1981) who argues in favor of a far greater focus on the decision-maker and his role in foreign entry decisions.

In line with cognitive scholars' argumentation and based on the conceptual definition of the decision maker used herein, it is reasoned that the relationship between individual and collective cognition does not pose problems in the case of small firms:

"This is because although the firm may be composed of many individuals, the CEO has full responsibility for scanning the environment and charting a course of action for the firm. Few would dispute that a cognitive analogy from individuals to firms is applicable in such circumstances [...]. (Peteraf & Shanley, 1997, p.167-8).

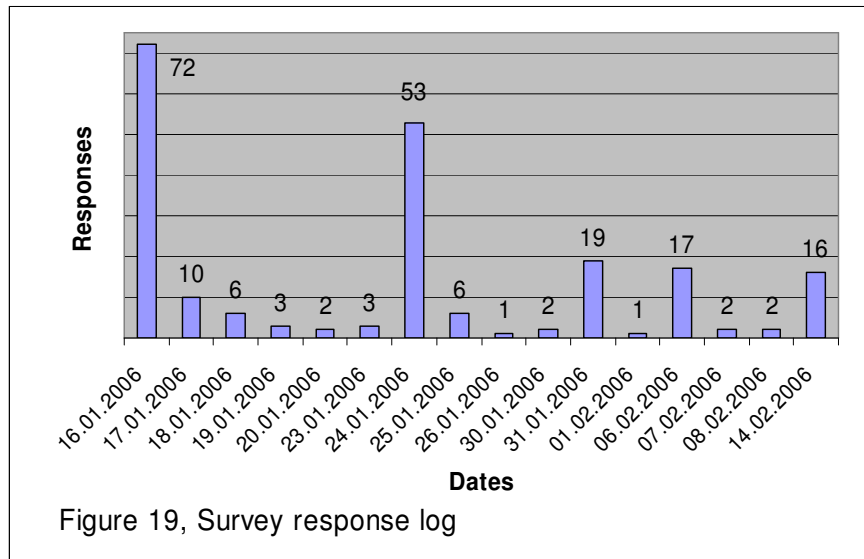
This argument is fully corroborated by Kotey and Meredith (1997), who with reference to Miller (1983), point out that managers have greater influence on business strategy in small firms where the manager often also is the owner of the firm. They have enormous impact on their enterprises through their power of ownership and face-to-face contact with employees (Miller & Toulouse, 1986) and the owner/manager is thus at the center of all enterprise behavior in small firms.

6.1.5 Self-administered questionnaire - data collection logistics

The distribution of the questionnaire commenced Monday 16.01.2006 by sending an invitation e-mail to each member of the sample with confirmed e-mail address and confirmed willingness to participate in the survey. The invitation e-mail referred to the pre-survey telephone campaign, gave background details on the research project and motives for the respondent to respond. It also contained basic instructions on how to get to the survey instrument and the estimated time required to respond to the questionnaire. The invitation e-mail had a direct link to the survey instrument and the questionnaire would load up on the respondent's personal computer normally within 1-3 seconds after clicking on the link. The data collection process was managed using "QuestBack" (see paragraph 4.6).

An e-mail message with a reminder to respond to the survey was sent out to non-replying firms in the sample Tuesday 24.01.2006 (reminder 1), Tuesday 31.01.2006 (reminder 2) and Monday 06.02.2006 (reminder 3). The wording of reminder 1 and 2 is identical, while the wording of reminder 3 was changed with the purpose of softening the stance and showing respect for the survey recipient who had yet to respond. The wording of the final reminder (reminder 4) was also changed, clearly stating that this was the final reminder and that a response would be appreciated. In line with Dillman's (2000) comments on positive effects of offering incentives to obtain responses from small firms, the invitation e-mail, as well as the reminders, all included a clearly stated incentive inviting the respondents to optionally participate in a lottery of a weekend-trip for two to Barcelona by responding to the survey. Copies of the invitation mail and reminders 1-4 are included in

Appendix 2 while Figure 19 below illustrates the results of the data collection campaign and the almost immediate impact of the various reminder mails.



As the research’s empiric phase was supported by Innovation Norway¹⁵, the dispatch of the introductory e-mail message and link to the survey instrument was considered sent directly from Innovation Norway’s official portal. It was initially reasoned that this would add needed credibility and give confidence to the respondents to participate in the research project. However, based on the successful pre-survey campaign and feedback received during the phone calls to confirm sample-participants’ e-mail addresses, this issue was reconsidered. During the pre-survey campaign it became clear that the involvement of Innovation Norway might serve as a two-edged sword – some small firm CEOs were openly skeptical of Innovation Norway’s involvement. It was finally decided that the support by Innovation Norway would only be mentioned in the invitation mail, but that the dispatch e-mail address for the e-mail invitation would be the researcher’s e-mail address at ESADE.

6.1.6 Feedback from the sample

One effect of using an internet-based survey instrument for data collection is an almost immediate feedback from the sample. As illustrated in Figure 19, the responses peaked the same day as the invitation and reminder e-mails were dispatched. However, in spite of the time invested in the pre-survey campaign, a few of the CEOs’ reverted with almost

¹⁵ A Norwegian governmental agency promoting the internationalization of Norwegian firms

immediate replies to the invitation mail, stating that they had never actually agreed to participate in the research project. The most common reasons given were that they are too busy to reply, not interested in internationalization or refrained from responding to any surveys on principle. Some of the CEOs stated that their unwillingness to respond was because they received too many survey requests. A few reverted with comments that their firm should not be part of the population in the first place as “our firm is not internationalized” but eventually decided to participate when further explanations of the research objectives were provided. Partly due to this feedback, the wording of reminder 3 was changed to point out to potential respondents that the research project is focused as much on those in the sample who are internationally active as those who are not. Based on the communications with the CEOs of the firms in the sample during the data collection process, it is concluded that overall no difference can be identified between survey respondents and non-respondents and that non-reply appears to be random.

The number of responses at completion of the data-collection process was 215 observations in form of survey responses resulting in a response rate (215/421) of 51%. With 215 responses, the sample is thus above the level of a critical sample size of 200 for the chosen data-analysis methodology (Hair et al, 1998). All in all, a response rate of 51% is considered very satisfactory as the questionnaire is fairly long and the respondents are CEOs/decision makers with busy schedules. In comparison, Nummela et al, 2004, achieved a response rate of 26,8% using e-mail invitation and a web-based questionnaire while Leonidou et al (1998) report an average response rate at around 35% in their review of internationalization research.

Table 3 illustrates how many responses in fact were collected within each size-stratum of the random sample and serves to confirm that each stratum is well represented in the final sample.

Size stratum (employees)	Number of responses	Random sample (firms)	% response/sample
10-19	101	189	53,4%
20-29	50	96	52,1%
30-39	24	65	36,9%
40-50	40	71	56,3%
Total	215	421	

Table 3. Distribution of responses by stratum

As commented on above, no non-response bias is anticipated as no logical differences exist between respondents and non-respondents. Nevertheless, a comparison of the early and late respondents with late respondents being assumed to be similar to non-respondents was conducted in order to assess a potential non-response bias (Armstrong & Overton, 1977). Using the decision-maker characteristics construct as a test, the difference in mean for the responses by early and late respondents were found to be insignificant and within the 95% confidence interval.

Table 4 illustrates a comparison of the firm-size distribution of the sampling frame and the random sample. While the comparison confirms the validity of the sample-strata and indicates that the firm-size distribution is generally representative of the population from which the random sample was drawn, a chi-square test of the difference between the sampling frame and the sample nevertheless confirms a slight deviation. It is, however, considered that the deviation does not make much difference in the analysis of relationships between constructs as aimed at in this research (Voogt, 2004). Consequently, no effects of response bias due to misrepresentation or sampling error are expected.

Size stratum (employees)	Number of firms			
	Sampling frame	%	Sample	%
10-19	626	58%	189	45%
20-29	215	20%	96	23%
30-39	137	13%	65	15%
40-50	93	9%	71	17%
Total	1.071	100%	421	100%

Table 4. Firm-size distribution - sample frame versus random sample

However, as for all survey research where the data-collection process is unobserved, a potential bias does exist in that someone other than the decision-maker may fill out the questionnaire. This risk is, however, deemed to be low granted that the sample consists of small firms where the decision-maker not uncommonly screens all incoming e-mails; while in addition the invitation to participate as well as the survey instrument was directed directly to the confirmed e-mail address of the firms' CEOs. Also, the option of participating in the lottery of the weekend trip for two to Barcelona by leaving a name and e-mail address is believed to have both a sobering and motivational effect – it is considered unlikely that a small firm CEO will let someone else get the chance of winning by responding to the survey in her or his place. The option to participate in the lottery was located at the very end of the questionnaire (see Appendix 3).

6.1.7 Data collection method – concluding remarks

The first phenomenon that took some time to get used to by using a web/internet based data collection method such as “Questback”, was the fact that one is working on-line and that the actual software and data files are on a server “somewhere else”, i.e. not located on your personal computer's hard drive. Secondly, one of the great advantages of working on-line, as mentioned above, is the data collection speed – 215 responses/observations in four weeks is very fast compared to a regular mail survey. A third great benefit is that the data is collected in a generally “coded” format with the possibility of easily transferring the data-matrix to SPSS for further data-preparation and analysis and with remaining coding limited to open questions.

As already discussed, the decision was made early on to offer an incentive to the respondents in form of a lottery. While it is hard to separately judge the impact of the lottery incentive and the pre-publishing campaign, it appears that they jointly stimulated the overall response rate. The drawback is the fact that the pre-survey publishing campaign and the lottery increased the cost of the data collection process.

6.2 Descriptive statistics

The following descriptive overview of the collected data focuses on the conceptual model's main constructs (Figure 20). The descriptive statistics presentation of the sample-findings relies on a graphical presentation of the key descriptive variables. Table 5 summarizes the main findings of the descriptive statistics and gives references to the graphical presentation in Appendix 4.

Main constructs	Observations	Figure in Appendix 4
M1	28,4% of the CEOs' parents travelled internationally	4.1
	62,3% of the CEOs visited other countries as a child	"
	73,0% of the CEOs has or had relatives living abroad	"
M2	47,9% of the CEOs has university education	4.2
	16,7% of the CEOs has studied abroad	"
M3	46 years is the average age of the CEOs	4.3
	6,5% of the CEOs is female	"
	95,3% of the CEOs is ethnic Norwegian	"
M4	the CEOs have varied multi-disciplinary experience	4.4
	15,8% of the CEOs has international work-experience	"
M5	The sample is multi-industrial and cross-sectional	4.5-A
	62,8% of the firms has one majority owner	4.5-B
	5,6% of the firms has a foreign majority owner	"
	45,1% of the firms is located in a town	4.5-C
	94,0% of the firms has been established more than 5 years	"
	65,6% of the firms produces written strategic plans	"
M6	51,0% of the firms engages in in-house R&D	"
	The CEOs score moderately on the global orientation construct	4.6
I1 - I3	66,5% of the firms is or has been internationally active	4.7
	The CEOs score low to moderate on the effects-of-internationalization variables	4.8
	Inbound internationalization activities are dominated by raw-material/semi-manufacture imports	4.9
	Outbound internationalization activities are dominated by export of finished products	"
	International networking activities prioritize marketing and supply of resources	"

Table 5, Descriptive statistics summary

6.3 Data characteristics

Structural equation modeling is based on assumptions of basic data-linearity, approximate normal distribution and independent observations and random sampling. Consequently, an analysis of the characteristics of the empirical data was performed. In the data preparation phase, the collected data representing each main construct was converted to factor scores¹⁶ thus converting sets of indicators into one variable per main construct representing items that have high loadings on one factor (Hair et al, 1998) and maximum reliability for the construct. The main conclusion of the data characteristics analysis is that individual constructs do to some extent deviate from the normality and linearity assumption (Appendix 5). However, based on discussions in the methodology literature (Satorra, A., 1992; Boomsma & Hoogland, 2001; Diamantopoulos & Siguaw, 2000), it is deduced that structural equation models' maximum likelihood (ML) theory is reasonably robust even when the data deviate from multivariate normality:

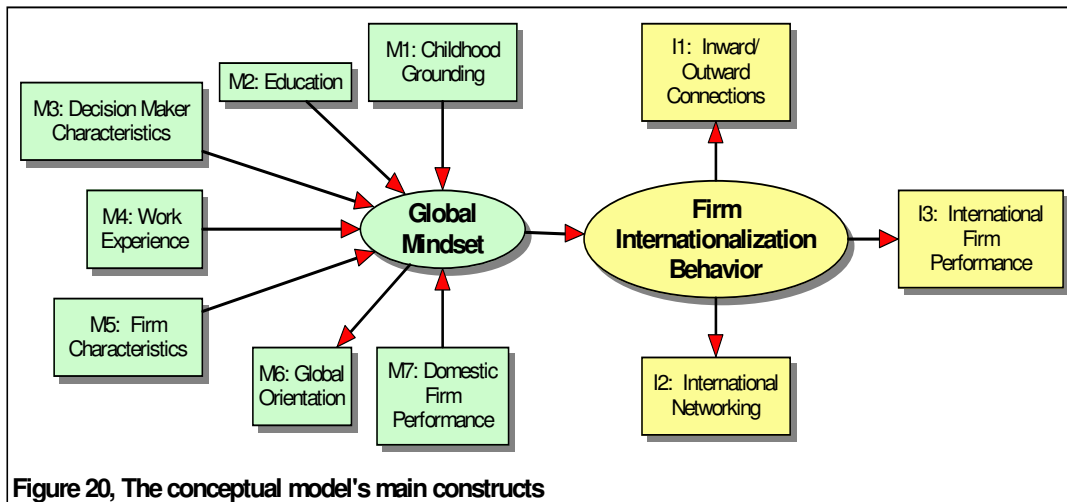
"ML provides consistently efficient estimation under the assumption of multivariate normality and is relatively robust against moderate departures from the latter" (Diamantopoulos & Siguaw, 2000, p. 56).

6.4 Methodology

6.4.1 Structural equation modeling

The conceptual model's main constructs (Figure 20) was contrasted with the empirical data using structural equation modeling. Structural equation modeling methodology is a very general linear statistical modeling technique that encompasses factor analysis, regression, and other estimation methods as special cases and which offers the possibility of examining a series of dependence relationships simultaneously.

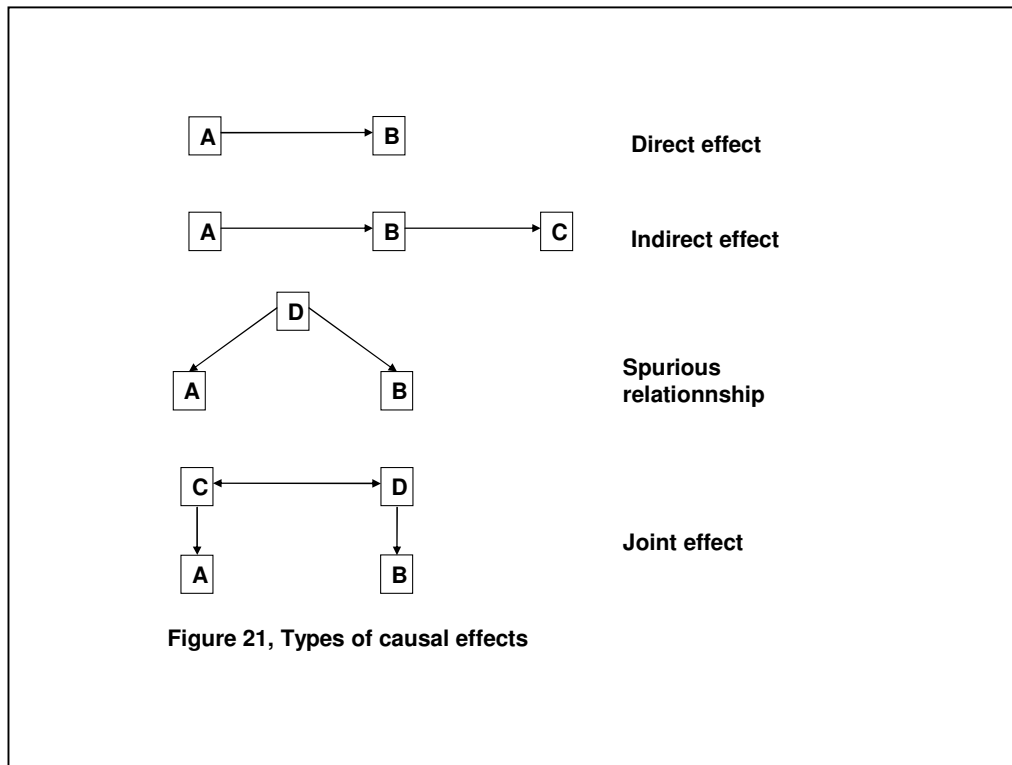
¹⁶ Factor scores are standardized with a mean of 0 and standard deviation of 1



Structural equation modeling is regarded as the appropriate statistical technique in most social science research for its ability to model complex processes and its ability to model relationships between non-observable variables while taking measurement errors into account¹⁷. Granted that the hypothesized relationships between the constructs are theoretically justified, it is considered appropriate to use a primarily confirmatory analysis methodology (Hair et al., 1998). In this research, with its focus on the causal relationship between the exogenous constructs (M1 – M7), the two latent endogenous constructs the global mindset and international firm behavior and the endogenous constructs (I1-I3), structural equation modeling is deemed the most appropriate methodology.

The specification of a causal relationship between variables is based on an element of production or force. This means that it is hypothesized that a change in one variable (the cause) actually produces a change in another variable (the effect) (Saris & Stronkhorst, 1984). This is reflected in the proposed hypothesis in its use of the word *influence*. Causality between exogenous variables and endogenous constructs may take many forms and in the literature a distinction is made between direct, indirect effects, spurious relationships and joint effects. Figure 21 graphically illustrates the various effects.

¹⁷ “Measurement errors relates to the validity and reliability of empirical measurements and errors due to the omission of relevant variables in the model” (Diamantopolous & Siguaw, 2000, p. 3)



With reference to the conceptual model, the model hypothesizes causal direct effects from the exogenous latent constructs to the endogenous global mindset construct and from the global mindset construct to the firm internationalization behavior. Direct effects are further hypothesized from the endogenous firm internationalization behavior construct to the endogenous and reflective internationalization behavior variables. Due to *correlation* between the exogenous variables, joint effects are anticipated. In addition, the quality of the estimates will be influenced by measurement errors and unexplained variance. These effects are illustrated in the path diagram included in Appendix 6 and 7. The path diagrams, amongst other, clearly indicate the correlation between the exogenous constructs¹⁸ noted by the double headed arrows between them.

It is worth noting that a hypothetical theory usually goes beyond explaining why variables are correlated or not and involves theory-based hypothesis about causal relations among the variables. Nevertheless, in isolation, correlation or covariance is only a necessary, but not sufficient condition for causal relations and thus finding the expected pattern of

¹⁸ The correlation between the exogenous formative constructs are not illustrated in the following path diagram illustrations due to the complexity of illustration

correlations would not imply that the theory is right only that it is plausible (Kelloway, 1998).

Studies applying structural equation modeling methodology usually goes through the process of model conceptualization, model identification, assessment of model fit and model modification. Model fit assessment involves comparing the estimated model parameters with the parameters of the observed empirical data and is usually based on a judgment of key indices. Extensive literature exist on the issue of model-fit assessment, and

"[...] most real world application of structural equation models with latent variables are bound to exhibit a certain amount of ambiguity in the sense that some criteria will point to acceptance of a model whereas others may be equivocal or even suggest rejection" (Bagozzi & Yi, 1988, p. 90).

Methodology scholars report that most fit indices used in structural equation modeling actually have different sensitivity for different misspecifications of models (Saris et al, 1987). In line with this argument, Saris and Satorra (2006) state that:

"We think that we have clearly indicated that the commonly used testing procedures for structural equation models can not be trusted. The reason is that the test statistics and fit indices used are not only affected by the size of the misspecifications but also by other characteristics of the model which have nothing to do with the size of the misspecifications" (ibid, p. 19).

The authors recommend using the expected parameter change (EPC) indicator to detect misspecification in combination with support by substantive theory, stating that:

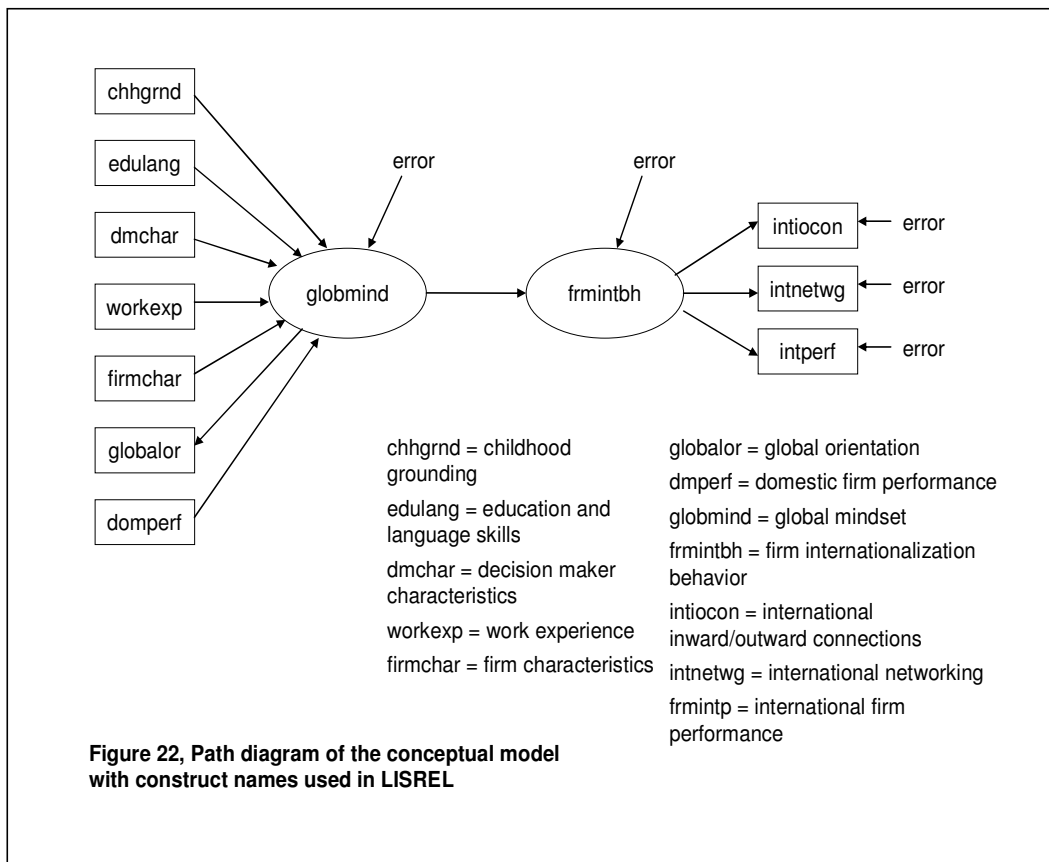
"If there are big EPCs the model is most likely wrong" (ibid, p. 20).

The further presentation in this chapter outlines the conceptual model in structural equation notation, explains the data analysis, exposes the measurement instrument, the model development sequence and concludes with a discussion of the results and validation of the proposed hypotheses.

6.4.2 The conceptual model in structural equation notation

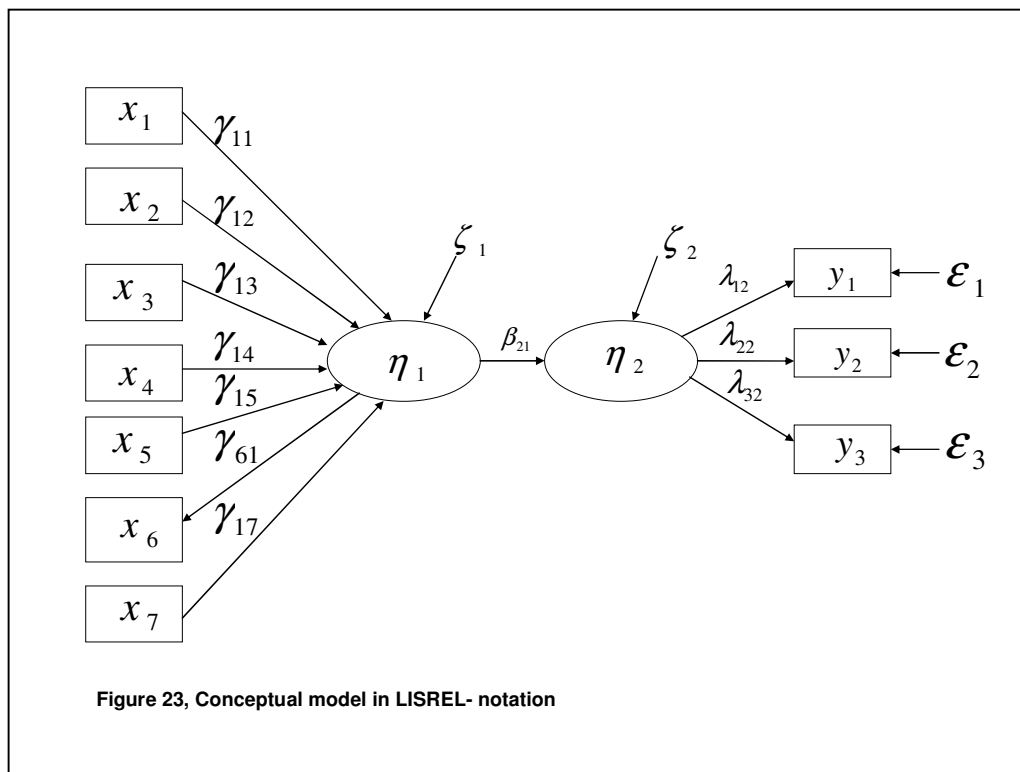
Structural equation models are often visualized by a graphical path diagram where observed or measured variables are represented by a rectangle and latent or unmeasured factors by an ellipse. Single headed arrows or “paths” are used to define causal relationships in the model, with the variable at the tail of the arrow causing the variable at the point. Double headed arrows indicate covariances or correlations, without a causal interpretation and the single headed arrows or paths represent regression coefficients.

The conceptual model was specified using LISREL 8.72¹⁹ (Jöreskog and Sörbom – Scientific Software International, Inc, 2005). Figure 22 illustrates the conceptual model in form of a path diagram and summarizes the construct-names used in LISREL.



¹⁹ LISREL: LInear Structural RELations

Figure 23 illustrates the conceptual model in LISREL-notation. In LISREL notation, endogenous latent variables are known as ETA's (denoted by the Greek letter η), the single directional relationship between the latent variables by BETA (denoted by the Greek letter β) and errors in equations or random disturbances by ZETA (denoted by the Greek letter ζ). With regards to the measurement sub-model, exogenous and endogenous constructs are represented by the x 's and y 's, the relationship between the latent variable (η_1) and the exogenous constructs by GAMMAs (γ) and the relationship between the latent variable (η_2) and the endogenous constructs by LAMBDAs (λ). Measurement errors for the endogenous reflective constructs are denoted EPSILON (ϵ).



With reference to Figure 23, it is noted that the endogenous construct η_1 , with the exception of the global orientation construct (globalor²⁰, x_6) are made up of formative indicators. The relationship between the endogenous firm internationalization behavior construct and its dependent endogenous variables, on the other hand are reflective with causality flowing from the latent construct to the firm internationalization behavior variables and its indicators.

²⁰ As previously noted, during the research process, the causal direction of the path between the global mindset and the global orientation construct was reversed as global orientation was reasoned to be a dependent reflective construct of the global mindset

Based on the path diagram in Figure 23, the structural equation model may be represented in a set of linear matrix equations:

Structural equations:

$$\eta_1 = \gamma_{11}x_1 + \gamma_{12}x_2 + \gamma_{13}x_3 + \gamma_{14}x_4 + \gamma_{15}x_5 + \gamma_{17}x_7 + \zeta_1$$

$$\eta_2 = \beta_{21}\eta_1 + \zeta_2$$

Measurement equations:

$$x_6 = \gamma_{61}\eta_1$$

$$y_1 = \lambda_{12}\eta_2 + \varepsilon_1$$

$$y_2 = \lambda_{22}\eta_2 + \varepsilon_2$$

$$y_3 = \lambda_{32}\eta_2 + \varepsilon_3$$

The data analysis was conducted using LISREL to estimate the parameters of the model and using the correlation matrix as input.

6.5 Measurement instrument and estimation of the conceptual model

With reference to the literature review of chapter 2 and 3, the identification of the research's central concepts summarized in Table 1, the outline of the conceptual model in Figure 15, the main construct summary of Figure 20 and the discussion of research-operationalization in section 4.4, the following describes the measurement instrument developed in the research process. The measurement instrument forms an integral part of the questionnaire used for the data collection (Appendix 3), where the individual question items represent the indicators of the exogenous and endogenous constructs of the model.

Among the main constructs of the conceptual model, only the measurement items of the global orientation construct have been established in previous research (Nummela et al, 2004). Measurement items of the remaining constructs were developed in the process of the research. Table 6 illustrates the indicator-items (as an abbreviation of the central theme of each question) used for the main constructs in the conceptual model. It is referred to the questionnaire (Appendix 3) for the exact wording of the questions of each main construct. As can be seen in Table 6, the decision-maker characteristics-, the work-experience- and the international networking constructs are each measured by 4

question-items, the childhood grounding- and domestic firm performance constructs by 2 items, the firm characteristics construct by 6 items, the global orientation construct by 7 items and the inward/outward internationalization connections construct by 10 items.

The first column of Table 6 refers to the construct-name abbreviations used in LISREL with variable definitions as per Figure 22. The exogenous and endogenous indicators are measured using a Likert-scale with scoring “1 = completely disagree” and “7 = completely agree” with the exception of the question-items on the “Work-experience” construct which use the same scale, but with the labels “1 = none” and “7 = very much” on items referring to specific types of work-experience. The second column of Table 6 refers to the non-observed latent construct as per the conceptual model, the third column lists the observed indicators of the latent construct as reflected in the questionnaire, the fourth column indicates the number of indicators (questionnaire items) per main construct and column five the measurement reliability. The Cronbach’s alpha for each construct, with the exception of the domestic firm performance construct, is within or above the 0,60-0,70 range indicating an acceptable to good reliability. With reference to the Cronbach’s alpha limited to 0,551 on the domestic firm performance construct, it is worth noting, however, that the Cronbach’s alpha coefficient only gives a lower bound of the reliability (Hair et al, 1998) and thus that the real value of the reliability is probably higher. Aware of the construct’s limited reliability-score, the domestic firm performance construct is nevertheless deemed a critical factor in the research and is retained in the model based on support from substantive theory (Wiedersheim-Paul et al, 1978; Reid, 1981; Hedlund et al, 1990; Havnes & Senneseth, 2001).

Construct name	Latent construct	Indicators	Indicators/construct	Cronbach's α
<i>chhgrnd</i>	M1: Childhood grounding	48 Recommend teenagers to study abroad	2	0,804
		49 Appreciation of international experience		
<i>edulang</i>	M2: Education	50 Highest level of formal education	8	0,759
		53-60 Language skills		
<i>dmchar</i>	M3: Decision-maker characteristics	31 Cross-disciplinary collaborator	4	0,806
		32 Flexible/reflective		
		33 Locus of control		
		34 Networking team-player		
<i>workexp</i>	M4: Work experience	63 Sales-marketing experience	4	0,657
		64 Gen.management work experience		
		65 Daily international work experience		
		66 International travel experience		
<i>firmchar</i>	M5: Firm characteristics	17 Technologically advanced products/services	6	0,799
		18 R&D in-house		
		19 Access to resources for growth		
		20 Clients' needs constantly change		
		21 Market global in nature		
		22 Competitors internationalized		
<i>globalor</i>	M6: Global orientation	70 Internationalization to grow	7	0,905
		71 Owner/manager pro-internationalization		
		72 Management-time on int.planning		
		73 Vision of world as one marketplace		
		74 Holistic global vision (market/school)		
		75 Openness internationalal ideas/cultures		
		76 CEO's int. Career propensity		
<i>dmpenf</i>	M7: Domestic firm performance	77 Domestic performance satisfaction	2	0,551
		79 Domestic networking-activity		
<i>intiocon</i>	I1: Inward/outward international connections	86 Raw-material import	10	0,924
		87 Semi-manufacture import		
		88 Import finished products		
		89 International consultancy sourcing		
		90 Participation international exhibitions (inbound)		
		91 Raw-material export		
		92 Semi-manufacture export		
		93 Export finished products		
		94 International consultancy		
		95 Participation international exhibitions (outbound)		
<i>intnetwg</i>	I2: International networking	96 International networking for information	4	0,943
		97 International networking for resources		
		98 International networking for marketing (outbound)		
		99 International networking for supplies (inbound)		
<i>frmintp</i>	I3: International firm performance	81 Positive financial effects of internationalization	3	0,972
		82 Positive knowledge effects of internationalization		
		83 Positive image-effect of internationalization		

Table 6, The conceptual model (Model A) - latent constructs and measurement indicators

The conceptual model was specified in LISREL to estimate to which extent the correlation matrix implied by the theory-based conceptual model corresponds to the correlation matrix of the empirical data of the sample. The result of the LISREL-estimation is illustrated in the path-diagram shown in Figure 24. The model was run using the correlation matrix of the conceptual model's main constructs as input-data and with the measurement errors (Cronbach's alphas) inserted on the diagonal of the input correlation matrix. In this way

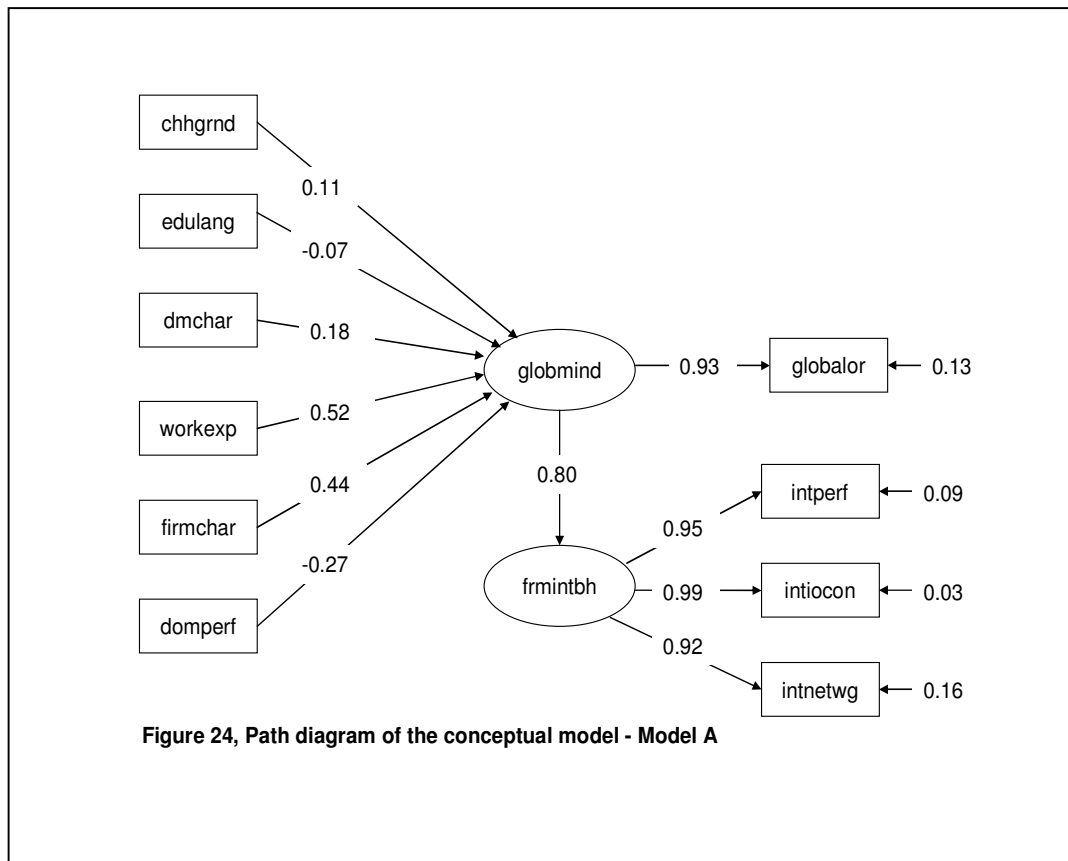


Figure 24, Path diagram of the conceptual model - Model A

the estimates of the effects are corrected for measurement error. The model estimation is based on maximum likelihood²¹ and in the path diagram of Figure 24 the standardized estimates of the loadings on each path are indicated.

Evaluating the model's fit, the standardized RMR (standardized root mean square residual), an average value measure of the size of the fitted residuals, is 0.0307.

²¹ Maximum likelihood estimation is a full information technique which makes estimates based on maximizing the probability (likelihood) that the observed covariances are drawn from a population assumed to be the same as that reflected in the coefficient estimates.

Standardized RMR is 0 when model fit is perfect and a value below 0.05 is considered indicative of an acceptable model fit (Diamantopolous & Sigauw, 2000). Comparatively, the GFI (goodness of fit index), a measure of absolute fit, is 0.946 while a value > 0.90 is usually taken as reflecting an acceptable fits. Further, the CFI (comparative fit index) is 0.977 and the NNFI (non-normed fit index) is 0.946, with values close to 1 representing a good fit. Nevertheless, reviewing the modification indices (indicated in bold in Appendix 6) and the expected change parameters in line with Saris and Satorra's recommendations (Saris & Satorra, 2006), the parameters do indicate that the model fit may improve by introducing new paths in the model.

6.6 Model development

Inspecting the modification indices and the expected parameter changes (EPC) in the LISREL-output (Appendix 6) of the conceptual model (Model A), it is noted that the introduction of a path between the decision maker characteristics (dmchar) and the firm internationalization behavior construct (frmintbh) will improve the model fit with a standardized expected change coefficient of -0.149. Similarly, a path is suggested between the work-experience (workexp) construct and the firm internationalization behavior construct (frmintbh) with a standardized expected change coefficient of 0.191. Being aware that the expected change coefficients must be rooted in substantive theory (Saris & Satorra, 2006), the suggested direct-effect-paths are considered to have support both in substantive theory and in empiric small-firm CEO behavior.

1. ***New path between the decision-maker characteristics construct (dmchar) and the firm internationalization behavior (frmintbh) construct:***

Much literature is devoted to describing the relationship between the decision-maker’s personality characteristics and firms’ internationalization (Simmonds & Smith, 1968; Leonidou et al, 1998; etc.), however with most attention granted to larger firms than what is considered herein. Thus Baird et al, 1994, appropriately make the maybe not so obvious observation that small firms are not small versions of big firms and that: “[...] smaller businesses deal with unique size-related issues as well, and they behave differently in their analysis of, and interaction with, their environment” (ibid, p. 49).

With reference to Table 7, a review of the correlation coefficients between the decision-maker characteristics indicators, the domestic and international performance and the internationalization behavior constructs, reveals a consistently higher correlation between the decision-maker characteristics

Constructs	Decision-maker characteristics indicators			
	Cross-disciplinary collaborator	Flexible/reflective	Locus of control	Networking team-player
Domestic firm-performance	0,329	0,303	0,268	0,408
International firm-performance	0,116	0,088	0,101	0,153
Inward/outward international connections	0,071	0,101	0,088	0,151
International networking	0,06	0,12	0,078	0,164

Table 7, Correlations between indicators of the decision-maker characteristics construct and the firm-behavior constructs (significant correlations at 0,01-level are highlighted)

indicators and the domestic firm performance construct. This observation tallies with the internationalization literatures’ traditional prominence given to the psychic distance factor (Dichtl et al, 1990; Holzmüller & Kasper, 1990; Reid, 1981, etc.). However, beyond a possible theoretical psychic distance interpretation, CEOs of resource-scarce small firms are likely - given the nature of such enterprises - to prioritize domestic operations and performance. As found by Calof (1994), debating the export propensity in Canadian small firms:

“Executives from these firms indicated that the dominant attitude prior to exporting was that the domestic market was more than large enough, so ‘why export?’”, (ibid, p.383).

Also, from a pragmatic hands-on small firm management-experience-perspective, this makes sense. A small firm will, depending on context and circumstances, usually prefer a continued normal, and perceived “safe” domestic operations unless circumstances changes dramatically (say, through a take-over, management buy-out, change of management strategy or because of a surprise order from abroad). In either case, the change cognitively goes “through the mind” and is provoked by change in the perception of the firm’s opportunities or threats. This argumentation contextualizes the negative causal effect parameter between the decision-maker characteristics construct and the *small* firm internationalization behavior construct both from a substantive and from an experience-based small firm management perspective.

2. ***New path between the work-experience- (workexp) and firm internationalization behavior construct (frmintbh)***: The positive relationship between professional work experience and internationalization propensity is well documented in the internationalization literature (Leonidou et al, 1998; Reid, 1983; Dichtl et al, 1990; Gupta and Govindarajan, 2002; Nummela et al, 2004, etc.). In general, the literature supports a positive causal relationship between work experience and internationalization propensity:

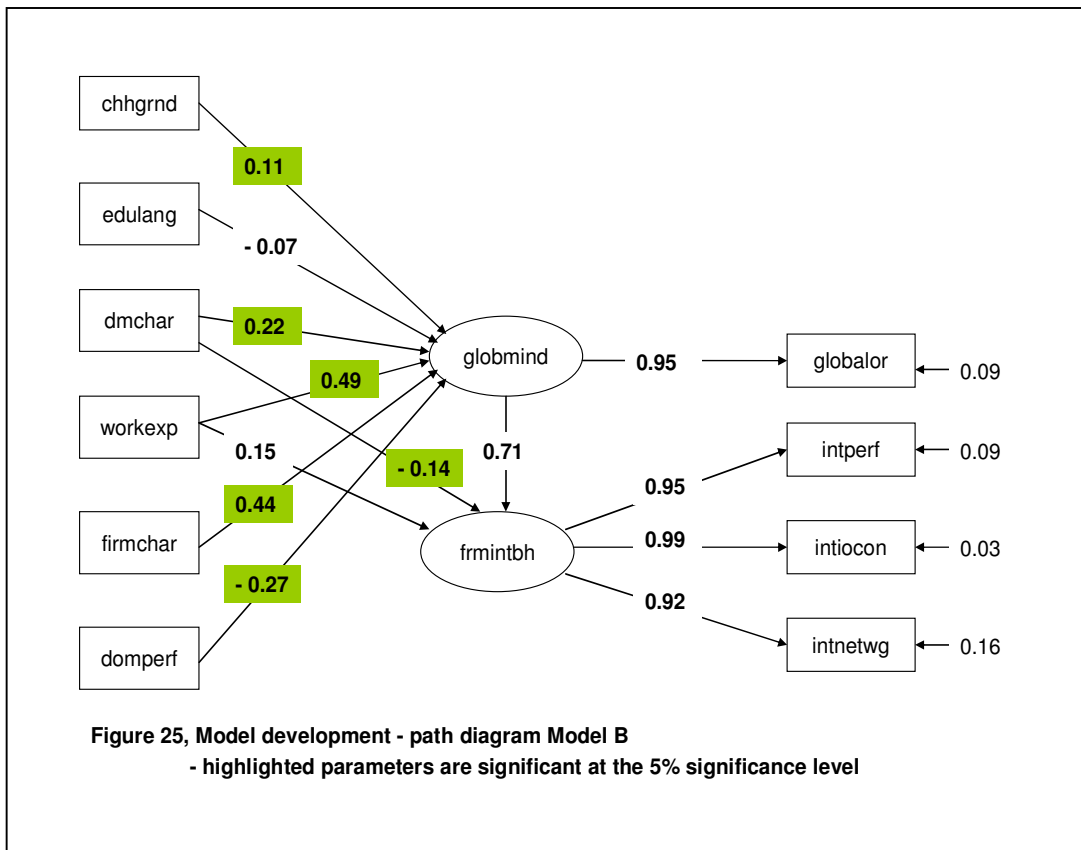
“The professional experience of the manager, in terms of previous occupations, technical expertise, or product knowledge, has also been associated with exporting. This is particularly true when professional experience was attained in an international setting [...]” (Leonidou et al, 1998, p. 88).

Inspecting the correlation coefficients between the indicators of the work-experience construct and the firm-internationalization behavior constructs in Table 8, it is found that both international work exposure and international travel experience correlates more strongly with the two firm internationalization behavior indicators international in/outward connections and international networking. The new direct path between the work-experience construct and the firm internationalization behavior-construct with a positive causal effect is added to the model based on substantive support and supported both by the empirical data and based on small firm management experience.

Constructs	Work-experience indicators			
	Sales/ marketing	General management	International work-exposure	International travel experience
International in/ outward connections	0,267	0,118	0,473	0,471
International networking	0,224	0,140	0,500	0,482

Table 8, Correlations between the work-experience indicators and the firm-internationalization constructs (significant correlations at 0,01-level are highlighted)

In line with the preceding discussion, both of the paths suggested by LISREL were introduced in the model (Model B). The result of the new LISREL-estimation is illustrated in Figure 25. Compared to the conceptual model (Model A) and with the comparable indices for Model A in brackets, the standardized RMR (standardized root mean square residual) for Model B is 0.0182 (0.0307), the GFI (goodness of fit index) is 0.955 (0.946),



the CFI (comparative fit index) is 0.982 (0.977) and the NNFI (non-normed fit index) is 0.952 (0.946). Reviewing the modification indices and the expected change parameters of Model B, it is confirmed that the effects of additional changes are very low. It is thus concluded that the fit of the model is acceptable on a statistical basis because the

standardized RMR is small and also the EPCs are small. On this basis, Model B is considered the final model in the model developing stage.

As pointed out in paragraph 6.4.1 an ideal fit index just does not exist, and the strength of the model's measurement and structural parts must also be assessed with focus on the substantive relationships. Inspecting the LISREL-results, Model B achieves a squared multiple correlation (R^2) for the structural equations of respectively 0.709 for the global mindset construct and 0.633 for the firm internationalization behavior construct. The R^2 s indicate the variance accounted for by each endogenous latent variable by the exogenous latent variables that are expected to impact upon it, the higher the R^2 the greater the joint explanatory power of the hypothesized causal relationship. Similarly, the R^2 s of the endogenous (reflective) variables (globalor, intperf, intiocon, intnetwg) also indicate an acceptable variance explained with values ranging between 0.843 (intnetwg) and 0.973 (intioncon) reflecting high reliability in the causal effects.

6.7 Validation of the proposed hypotheses

With reference to the hypotheses proposed in paragraph 4.2 and with the purpose of validating the hypotheses, the LISREL-output for the Model B was inspected for the effects²² from the exogenous constructs on the endogenous latent global mindset (globmind) construct and the firm internationalization behavior (frmintbh) construct²³.

With reference to Appendix 7, the interpretation of the unstandardized parameter estimates in LISREL is akin to that of regression coefficients, the magnitudes show *ceteris paribus* the resulting change in a dependent variable from a unit change in an independent variable, while t-values between -1.96 and +1.96 indicate that the corresponding parameter is not significantly different from 0 at the 5% significance level. Thus, rounded, t-values larger or smaller than +2 or -2 indicate a significant relationship. The significant causal parameters of Model B are highlighted in Figure 25.

Based on the results, the following are concluded with reference to the proposed hypotheses:

²² In LISREL: GAMMA – the causal relationship between KSI (ξ) the exogenous variables and the ETA (η), the endogenous latent variable(s)

²³ ETA on ETA – the causal relationship between the ETA (η) variables

H₁-Childhood groundings: *Exposure to diversity and appreciation of international experiences during childhood are positively related to having a managerial global mindset.* This hypothesis was supported.

H₂-Education: *Educational level and foreign language proficiency relate positively to having a managerial global mindset.* This hypothesis was not supported.

H₃-Decision-maker characteristics: *Cognitive flexibility, cross-disciplinary collaboration and networking relate positively to having a managerial global mindset.* This hypothesis was supported.

H₄-Work experience: *Work-experience and international work exposure relate positively to having a managerial global mindset.* This hypothesis was supported.

H₅-Firm characteristics: *Technologically advanced operation, research and development, resource access and operations in a dynamic international market relates positively with having a managerial global mindset.* This hypothesis was supported.

H₆-Global orientation: *Vision of the world as one marketplace, sensitivity for foreign ideas and cultures and emphasis on internationalization relate positively with having a managerial global mindset.* This hypothesis was not tested as the causal direction of the construct was reversed from formative to reflective in course of the research process.

H₇-Domestic firm performance: *Domestic firm performance and networking relate positively with having a managerial global mindset.* This hypothesis was not supported.

H₈-Firm internationalization behavior: *A CEO's global mindset reflects itself in the internationalization behavior of the firm.* This hypothesis was supported.

6.8 Discussion of the findings

With reference to Model B (Figure 25), the following two observations are emphasized as the findings may be interpreted as contrasting general conclusions in the firm internationalization literature:

1. Generally the firm internationalization literature implicitly assumes a positive causal relationship between firms' domestic performance and internationalization propensity. I.e. a firm's international orientation is usually contingent on a successful domestic operation and satisfactory domestic performance in form of growth or domestic market coverage (Andersen & Rynning, 1994; Wiedersheim-

Paul, 1978, etc.) and the availability of slack resources or capacity (Reid, 1981; Yang et al, 1992, etc.). According to the findings of Model B, there is, however, a negative causal effect parameter from the domestic performance construct to the global mindset (-0.27). The conceptual model, in line with the internationalization literature, hypothesized a positive relationship between domestic performance and the formation of a global mindset. From a small firm's perspective, the reasons for this negative relationship are likely to be related to firm size, resources and capacity and that small firms primarily are oriented to their local, regional or domestic market. Taking into account the small firm-sizes considered in this research (10-50 employees), human resource aspects such as limits on managerial capacity and administrative time will also play a role. Also scarce availability of other resources such as financial, internationalization skills, production bottlenecks, required incremental investments for internationalization, etc. will probably negatively impact the decision-maker's reasoning regarding internationalization.

2. The internationalization literature generally assumes a positive relationship between a CEO's higher education and international orientation (Andersen & Rynning, 1994; Leonidou et al, 1998, Reid, 1981; Dichtl et al, 1990; Nummela et al, 2004).

"[...] In addition to increased competence in general management, a high educational level particularly in Europe often indicates foreign language skills and travel experience. Such skills are believed to reduce the cost of collecting, transmitting and interpreting information from the environment in which foreign entry decisions are taken" (Andersen & Rynning, 1994, p.22).

With reference to Model B, there is, however, a small and insignificant negative causal effect parameter between the education and languages construct and the global mindset (-0.07). With reference to the descriptive statistics (Appendix 4), based on a closer scrutiny some observations can be made:

- a. 52% of the CEOs have an educational level consisting of high school plus some college while 48% were at university to advanced degree level.
- b. English proficiency is high with 83% of the CEOs scoring 5, 6 and 7 on a scale where 7 = fluent and 1 = no knowledge.
- c. 59% of the CEOs report daily international work-exposure.

- d. 57% of the CEOs report being pro-internationalization and 43% not being pro-internationalization.

With reference to Table 9, it can be seen that English-proficiency correlates significantly with the indicators pro-internationalization and openness to international ideas/cultures. It can also be seen that the indicator daily international work-experience correlates significantly with the indicators for pro-internationalization and openness to international ideas/cultures. These observations are in line with the internationalization literature. The observation that the international work-exposure indicator correlates significantly positive

Indicators	English proficiency
Daily international work/exposure	0,135
Owner/manager pro-internationalization	0,315
Openness to international ideas/cultures	0,376

Indicators	Daily international work-experience
Owner/manager pro-internationalization	0,381
Openness to international ideas/cultures	0,311

Indicators	Level of formal education	
	Lower levels (1)	Higher levels (2)
Daily international work/exposure	0,264	-0,121
Owner/manager pro-internationalization	0,154	0,016
Openness to international ideas/cultures	0,128	0,112

Notes:

- (1) Educational categories: high school or less + some college
- (2) University + advanced degree

Table 9, Education, languages and global mindset - correlation coefficients (correlation coefficients significant at the 0,01-level are highlighted)

for CEOs of relative lower level education, but correlates negatively for CEOs of higher education is, however, noteworthy. This observation, though surprising, is in line with Norwegian press reports of a presently booming job-

market for higher educated personnel²⁴ making international orientation and implicitly a global mindset relatively less attractive and relatively less required. The observation also tallies with reports of a low international orientation among Norwegian leaders of higher education²⁵. The minor negative causal effect parameter (- 0.07) between the education and languages construct and the global mindset may, however, be a temporary effect caused by the current strong Norwegian economy and thus may not be replicable in samples from other countries and cultures.

²⁴ Article in the Norwegian business newspaper "Dagens Næringsliv", 15.12.2005

²⁵ The Administrative Research Fund's (AFF) "Leadership Investigation 2002", the Norwegian School of Economics and Business Administration

PART 3 – CONCLUSIONS

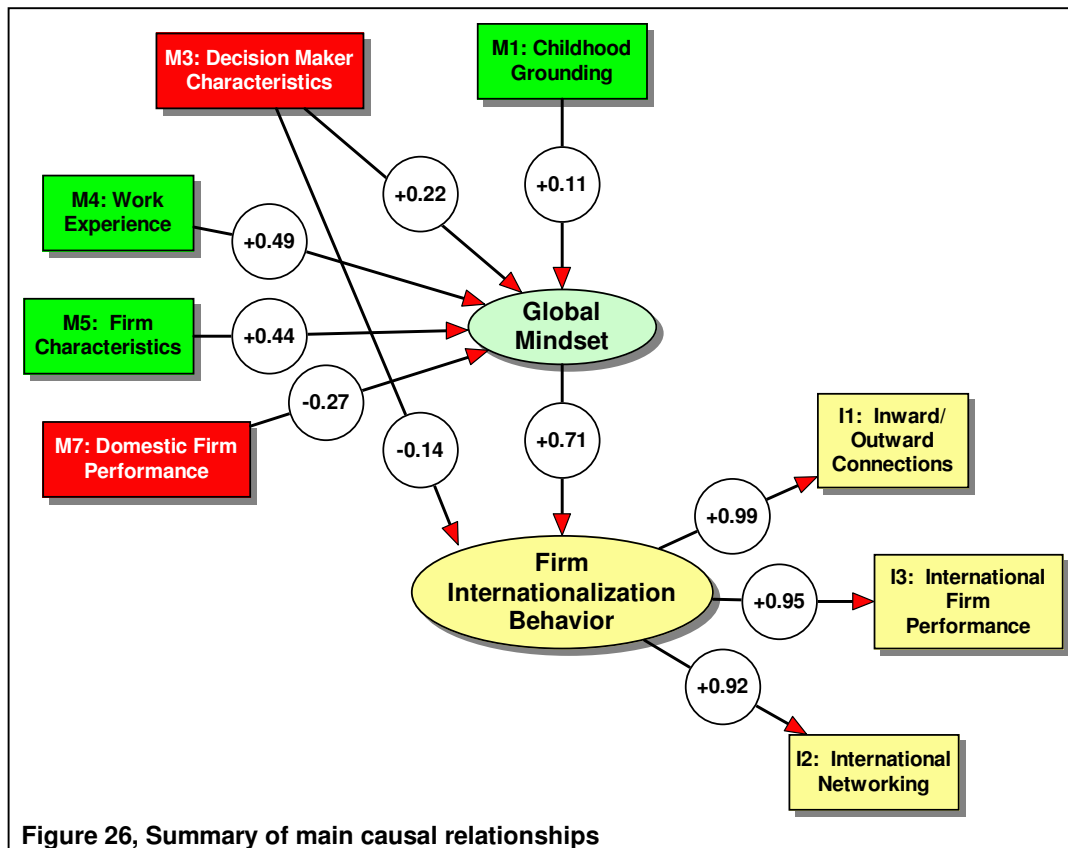
7. CONCEPTUAL THEORY AND EMPIRICAL FINDINGS – A COMPARISON

Based on the context of the present day Norwegian economy, this research started out with a broad discussion of managerial concepts which may have an influence on the way small firms' perceive international challenges and opportunities. The literature review included an outline of how cognitive phenomena, consciously or not, influence CEOs in their decision making process. In the review of the internationalization literature, the importance of resource-based challenges for small firms was emphasized and it was concluded that small firms are not small versions of big companies, but that they have their distinctive features and constraints. Repeatedly, it has been emphasized that part of the challenges of small firms may reside in the CEOs' particular reality perception and that the mindset impacts individual and collective behavior.

7.1 Validation of the theory-based conceptual model

With reference to paragraphs 6.7 and 6.8 in the preceding chapter, it was found that the empirical data validate most of the conceptual model's main causal relationships. Based on Model B (Figure 25), Figure 26 recaps the *statistically significant* causal relationships between the formative exogenous constructs and the global mindset constructs and the relationships between the firm internationalization construct and its reflective endogenous variables.

The strongest causal link is between work experience (workexp) and the global mindset with a causal effect parameter of +0.49. With reference to the model development discussion, it is recalled that two of the indicators on the work experience construct are directly related to international work exposure. Thus international experience is a fundamental formative element which can be influenced by the firm. Access to international experience and exposure can for instance be arranged through traineeship-exchange-programs between firms at different levels of internationalization in a network. This topic is further commented on in paragraph 7.2.



The firm characteristics construct (firmchar) is the second strongest formative causal effect parameter with a value of + 0.44. It is recalled that this construct measures the dynamism, turbulence and degree of internationalization of the market in which the firm is embedded. It is thus more complicated to specifically impact this construct in that either the firm is embedded in a dynamic and internationalized industry, or it is not. However, even the firm characteristics variables can be impacted through conscious development caused by awareness of the construct's formative implications. If the firm is not embedded in a dynamic and internationalized market segment, it may be conversely implied that a firm may achieve a competitive advantage by developing the capabilities required for having a global mindset.

The domestic performance construct (domperf) is in absolute terms the third most important causal effect parameter, here negative, with a value of - 0.27. As previously discussed, this finding is in one sense surprising considering that the internationalization literature in general does assume that domestic performance satisfaction normally is a prelude for firm internationalization. There are though exceptions to this general rule in

cases where domestic market growth is limited and where access to the larger global market will impact overall performance, i.e. a case of expanding out of the domestic market. Recalling, however, that the internationalization literature is relatively biased toward bigger firms and that small firms may have a different *raison d'être* (due to more personalized objectives and performance criteria), the negative causal effect is logical from a resource perspective, particularly among the small firms which form the sample of this research. Satisfactory domestic performance causes the small firm to focus its attention on the home market rather than positively influencing the global mindset – i.e. what appears to be a case of “satisficing” and playing it safe rather than venturing towards relatively more risky business projects abroad.

The decision maker characteristics construct (*dmchar*) is the fourth important causal effect parameter positively influencing the global mindset (+ 0.22). Personality- characteristics in favor of collaboration, locus of control, reflection and flexibility favor the formation of a global mindset.

Finally, the positive causal effect between the global mindset (*globmind*) and firm internationalization behavior (*frmintbh*) is measured to + 0.71 while the subsequent reflection in actual international behaviors of the firm range above + 0.90.

The causal relationship between the global mindset and firm international behavior is successfully measured and thus satisfying the overall objective of this research and contributing to meeting the challenge raised by managerial cognition oriented scholars of reducing the gaps in research relating the interaction between individual-level understanding and organizational action (Lyles & Schwenk, 1992). The research has established a link between managerial cognition, the global mindset construct and the broader agenda of the internationalization of small firms. The research project responds to several scholars' call for evidence of theory-development through cross-fertilization between the managerial cognition and the internationalization literature (Huff, 1997; Hodgkinson & Sparrow, 2002) and takes advantage of the propagated benefits small firms offer as an ideal testing ground for managerial cognition processes (Porac et al, 1989).

It is believed that this research project gives insights to which extent managers' cognitive processes cause the formation of the global mindset and how these processes may encourage or impede small firms' internationalization. The research outcome indicates

that the global mindset play a significant causal role in influencing the internationalization behavior of these firms.

The research project hopefully contributes to give deserved credit to the cognitive management perspective and to the possibilities of a fruitful interdisciplinary combination of qualitative managerial perspectives and quantitative methodology while seeking to limit biases caused by the researcher's involvement in the data collection process.

The research design, by using the decision-maker as prime informant and the relationship between the independent formative constructs, the CEO's global mindset and international firm behavior as unit of analysis, has achieved the objective of responding to an overtly behavioral and collective-level focus in much of the firm internationalization literature.

Finally, it is hoped that the research project gives due prominence to small firms as research arenas and contribute to an appreciation of how small firms and their leaders deserve to form a natural part of academic supported research and development.

7.2 Implications and recommendations for future research

Based on review of the firm internationalization literature, this appears to be the first time that the global mindset has been rigorously quantitatively measured and the causal relationship to small firms' internationalization behavior tested on empirical data.

The most practical significant finding is the causal relationship between a decision-maker's international work-experience and the formation of a global mindset. This finding, though useful in an individual firm context, probably has more potential as a policy implication and as guidance for collective organizational efforts to stimulate firm internationalization. Granted that this research has focused on resource-scarce small firms, it is not likely that much can be achieved on an individual firm basis. However, a coordinated effort on a common interest organizational level based on collaboration between small firms through a network could be effective. An organized internationalization-traineeship-program including CEOs and/or their employees should not be too costly as the trainees would "work-as-they-learn" and might be administered as an exchange program of trainees between firms at different levels of sophistication in their

internationalization efforts. A Norwegian private initiative of this type has recently been launched with an exchange program including firms abroad²⁶. This recommendation also tallies with conclusion reached by Nummela et al, 2004, who link the utility of the global mindset construct to efforts by public-policy makers' and venture capitalists attempts to support the internationalization of small firms:

"From their perspective, the identification of managers with a global mindset might prove to be essential in directing scarce resources to this potential group of successful exporters" (ibid, p. 60).

The recommendation also corresponds with Dichtl et al (1990) who, when discussing various types of assistance to firms' internationalization on meta-firm level, state that:

"[...] Others include the promotion of international exchange (particularly of young people), and the delegation of management trainees to foreign countries" (ibid, p. 36).

The finding of this research, however, that domestic performance satisfaction to the contrary actually negatively impacts the formation of a global mindset in small firms is worth attention. However, as already discussed, this conclusion is not surprising from small firms' resource- and risk perspectives. It is found reasonable that small firm CEOs will prefer continued domestic business as usual to internationalization, particularly if the business as usual is a successful one. However, also this finding may be interpreted as potentially having implication for how public or private resources may be channeled towards strengthening the awareness of internationalization among small firm CEOs and towards more active facilitation of the internationalization process. Elaborating on the motivational and cognitive antecedents of information search in exporting, Yeoh (2005) concludes that:

"From a public policy standpoint, government-sponsored export programs/services are more likely to succeed if positive network externalities are provided to participating firms" (ibid, p. 190).

In the case of Norway, however, with experience of Norwegian small firm decision-makers' degree of individualism and apparently inherited skepticism to network collaboration and governmental bureaucracy, it is though considered unlikely that individual or voluntary network collaboration will succeed without some form of active governmental administrative support and funding.

²⁶ Trollfjord Consulting AS – March 2006 –
http://lasso.nordbye.no/weblicate/lasso/nft/resources/invitasjon_til_Reis_og_Ryk.pdf

Future research on this project will concentrate on gradually improving the formative elements of the measurement model, particularly the childhood grounding- and the domestic performance constructs. Also, as this research used a cross-sectional sample of small firms in four Norwegian counties and delimited the sample frame to four representative Norwegian industries (fishing, mining and quarrying, manufacturing and maritime shipping), attempts will be made to replicate the research and cross-validate the findings based on a cross sectional sample in another country and culture. As the sample for this cross-sectional study was too small to be able to create sub-samples by industry, future research will attempt verifying how the industrial setting may influence the creation a global mindset and evaluate how the findings develop over time based on a longitudinal research design. Attempts will also be considered of relaxing the firm-size restriction and go beyond firms with maximum 50 employees based on the thought that cognitive processes may be influenced by more extensive interdisciplinary collaboration and additional resources commonplace in larger companies. Finally, attempts will be made to contrast, enrich and validate the findings of this research with selective in-depth, in situ interviews of CEOs within the present sample to collect more contextual data and capture unseen, unspoken and tacit cognitive phenomena not accessed by the quantitative design of the research presented herein.

BIBLIOGRAPHY

1. Amabile, T. M. (1997) "Motivating Creativity in Organizations: On Doing What You Love and Loving What You Do", *California Management Review*, Vol. 40, No. 1
2. Andersen, O. (1993) "On the Internationalization Process of Firms: A Critical Analysis", *Journal of International Business Studies*, Second Quarter, 24, 2; ABI/INFORM Global, p. 209
3. Andersen, O. and M.-R. Rynning (1994) "Prediction of Export Intentions - Managing with Structural Characteristics?", *Scandinavian Journal of Management*, Vol. 10, No. 1, pp. 17-27
4. Andersen, P. H. and J. Strandskov (1998) "International Market Selection: A Cognitive Mapping Perspective", The Haworth Press, Inc. *Journal of Global Marketing*, Vol. 11 (3)
5. Andersson, S., J. Gabrielsson and I. Wictor (2004) "International Activities in Small Firms: Examining Factors Influencing the Internationalization and Export Growth of Small Firms", *Canadian Journal of Administrative Sciences*, 21 (1), pp. 22-34
6. Argyris, C. and D. A. Schön (1996) "Organizational Learning II, Theory, Method, and Practice", Addison-Wesley Publishing Company
7. Armstrong, S. and T. S. Overton (1977) "Estimating non-response in mailed surveys", *Journal of Marketing Research*, 14, pp. 396-402
8. Atkinson, R. L. et al. (2000) "Hilgard's Introduction to Psychology", Harcourt College Publishers
9. Augier, M. and K. Kreiner (2000) "Rationality, Imagination and Intelligence: Some Boundaries in Human Decision-making", *Industrial and Corporate Change*, Volume 9, Number 4
10. Bagozzi, R. P. (1994) "Structural Equation Models in Marketing Research: Basic Principles", *In Principles of Marketing Research*, R. Bagozzi, ed. Oxford: Blackwell, pp. 317-85
11. Bagozzi, R. P. and Y. Yi (1988) "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, 16: pp. 74-94
12. Baird, I. S., M. A. Lyles and J. B. Orris (1994) "The Choice of International Strategies by Small Businesses", *Journal of Small Business Management*
13. Barney, J. B. (1991) "Firm Resources and Sustained Competitive Advantage", Database: Business Source Elite *Journal of Management*, Vol. 17, Issue 1, p. 99
14. Bell, J. et al. (2003) "Toward an Integrative Model of Small Firm Internationalization", *Journal of International Entrepreneurship*, 1, pp. 339-362
15. Bennett, R. (1996) "International Business", Pitman Publishing
16. Bollen, K. A. (1989) "Structural Equations with Latent Variables", John Wiley & Sons
17. Boomsma, A. and J. J. Hoogland (2001) "The Robustness of LISREL Modeling Revisited", *Structural Equation Modeling: Present Future, 2001 - ppsw.rug.nl*, article located on the www spring 2006

18. Brown, S. and K. M. Eisenhardt (1997) "The art of continuous change: linking complexity theory and time-spaced evolution in relentlessly shifting organizations", *Administrative Science Quarterly*, 42: pp. 1-34
19. Bunderson, S. J. (1995) "Work History and Selective Perception: Fine Tuning What We Know", Conference Proceedings *Academy of Management Best Paper Proceedings*, pp. 459-463
20. Calof, J. L. (1994) "The Relationship between Firm Size and Export Behavior Revisited", *Journal of International Business Studies*, Second Quarter
21. Calof, J. and P. Beamish (1995) "Adapting to Foreign Markets: Explaining Internationalization", *International Business Review*, 4 (2), pp. 115-131
22. Chetty, S. and C. Campbell-Hunt (2003) "Paths to internationalization among small- to medium-sized firms - A global versus regional approach", *European Journal of Marketing*, Vol. 37, No. 5/6
23. Chiara, D. A. and A. Minguzzi (2002) "Success Factors in SMEs' Internationalization Processes: An Italian Investigation", *Journal of Small Business Management*, 40 (2), pp. 144-153
24. Conner, K. R. and C. K. Prahalad (1996) "A Resource-based Theory of the Firm: Knowledge Versus Opportunism", *Organization Science*, Vol.7, No. 5
25. Cowan, D. A. and D. R. A. Skidd (1991) "Digging for Cognitive Bedrock Through Management Terrain", *Academy of Management Proceedings*, p. 374
26. Cronbach, L. J. and P. C. Meehl (1955) "Construct validity in psychological tests", *Psychological Bulletin*, 52, pp. 281-302
27. Dana, L. P. (2001) "Introduction Networks, Internationalization & Policy", *Small Business Economics*, 16, pp. 57-62
28. Dhanaraj, C. and P. W. Beamish (2003) "A Resource-Based Approach to the Study of Export Performance", *Journal of Small Business Management*, 41 (3), pp. 242-261
29. Diamantopoulos, A. and J. A. Siguaw (2000) "Introducing LISREL A Guide for the Uninitiated", SAGE Publications Ltd.
30. Diamantopoulos, A. and J. A. Siguaw (2002) "Formative vs. Reflective Indicators in Measure Development: Does the Choice of Indicators Matter?", *Working Paper* - Cornell Hotel School
31. Diamantopoulos, A. and H. M. Winklhofer (2001) "Index Construction with Formative Indicators: An Alternative to Scale Development", *Journal of Marketing Research*, Vol. XXXVIII, pp. 269-277
32. Dichtl, E., H.-G. Koeglmaier and S. Mueller (1990) "International Orientation as a Precondition for Export Success", *Journal of International Business Studies*, First Quarter; 21, 1
33. Dillman, D. A. (2000) "Mail and Internet Surveys - The Tailored Design Method", John Wiley & Sons, Inc.

34. Dörrenbächer, C. (2000) "Measuring Corporate Internationalisation - A review of measurement concepts and their use", *Discussion Paper*, FS 100-101, Wissenschaftszentrum Berlin für Sozialforschung
35. Easterby-Smith, M., R. Thorpe and D. Holman (1996) "Using Repertory Grid in Management", *Journal of European Industrial Training*, 20/3, pp.3-30
36. Eden, C. and J. C. Spender (1998) "Managerial and Organizational Cognition, Theory, Methods and Research", Sage Publications Ltd.
37. Edwards, J. R. and R. P. Bagozzi (2000) "On the Nature and Direction of Relationships Between Constructs and Measures", American Psychology Association, Inc. *Psychological Methods*, Vol. 5, No. 2, pp. 155-174
38. Fishbein, M. and I. Ajzen (1975) "Belief, Attitude, Intention and Behaviour", Addison-Wesley
39. Fletcher, R. (2001) "A holistic approach to internationalisation", *International Business Review*, 10, pp. 25-49
40. Forest, J. and C. Mehier (2001) "John R. Commons and Herbert A. Simon on the Concept of Rationality", *Journal of Economic Issues*, Vol. XXXV, No. 3
41. Fornell, C. and F. L. Bookstein (1982) "A Comparative Analysis of Two Structural Equation Models: LISREL and PLS Applied to Market Data", Praeger in *A Second Generation of Multivariate Analysis*, Vol. 1, C.Fornell, ed., pp. 289-324
42. Foss, N. J. (2001) "The Problem With Bounded Rationality: On Behavioural Assumptions in the Theory of the Firm", Danish Research Unit for Industrial Dynamics (DRUID), *DRUIDS Working Paper*, No 01-15
43. Gardner, H. (2004) "Changing Minds - The Art and Science of Changing Our Own and Other People's Minds", Harvard Business School Press
44. Ghoshal, S. (2005) "Bad Management Theories Are Destroying Good Management Practices", *Academy of Management Learning & Education*, Vol. 4, No. 1, pp. 75-91
45. Gnyawali, D. R., A. C. Stewart and H. J. Grant (1997) "Creation and utilization of organizational knowledge: An empirical study of the roles of organizational learning on strategic decision making", *Academy of Management Proceedings*
46. Gosling, J. and H. Mintzberg (2003) "The Five Minds of a Manager", *Harvard Business Review*, November, pp. 54-63
47. Granovetter, M. (1983) "The Strength of Weak Ties: A Network Theory Revisited", *Sociological Theory*, Volume 1, pp. 201-233
48. Grant, R. M. (1996) "Toward a Knowledge-Based Theory of the Firm", *Strategic Management Journal*, Vol. 17 (Winter Special Issue), pp. 109-122
49. Gupta, A. K. and V. Govindarajan (2002) "Cultivating a global mindset", *Academy of Management Executive*, Vol. 16, No. 1
50. Gustavsen, B., H. Finne and B. Oscarsson (2001) "Creating Connectedness, The role of social research in innovation policy", John Benjamins Publishing Company, *Dialogues on Work and Innovation*, 13

51. Hair, J. F. et al. (2006) "Multivariate Data Analysis", Sixth Edition (forthcoming)
52. Hair, J. F. et al. (1998) "Multivariate Data Analysis", Prentice-Hall Inc.
53. Hauge, E. (2001) "The Dynamics of SME Development - Two Case Studies of the Internationalization Process", *RENT XV Conference*, Turku
54. Havnes, P.-A. (2001) "The dynamics of the internationalisation process - Interpretation of empirical evidence", http://www.igw.unisg.ch/rencontres/band2002/D_04_Havnes.pdf - 04.02.2004
55. Havnes, P.-A. and K. Senneseth (2001) "A Panel Study of Firm Growth among SMEs in Networks", *Small Business Economics*, 16: pp. 293-302
56. Hedlund Anders et al. (1990) "Competence, Networks and Regional Policy", Næringsøkonomisk Institutt, Bergen *NordREFO: Networks and Regional Development*, Nr. 1/90
57. Hodgkinson, G. P. (2002) "Comparing Managers' Mental Models of Competition: Why Self-report Measures of Belief Similarity Won't Do", *Organization Studies*, 23/1, pp. 63-72
58. Hodgkinson, G. P. and G. Johnson (1994) "Exploring the mental models of competitive strategies: The case for a processual approach", *Journal of Management Studies*, 31:4
59. Hodgkinson, G. P. and P. R. Sparrow (2002) "The Competent Organization - A Psychological Analysis of the Strategic Management Process", Open University Press *Managing Work and Organizations Series*
60. Holzmüller, H. H. and H. Kasper (1990) "The Decision-Maker and Export Activity: A Cross-National Comparison of the Foreign Orientation of Austrian Managers", *Management International Review*, vol. 30, 1990/3
61. Huff, A. S. "A Current and Future Agenda for Cognitive Research in Organizations", *Journal of Management Studies*, 34:6
62. Jeannet, J.-P. (2000) "Managing with a Global Mindset", Pearson Education Limited
63. Jenkins, M. and G. Johnson (1997) "Linking Managerial Cognition and Organizational Performance: A Preliminary Investigation using Causal Maps", *British Journal of Management*, Vol. 8
64. Johansen, J. and J.-E. Vahlne (1977) "The Internationalization Process of the Firm - A Model of Knowledge Development and Increasing Foreign Market Commitments", *Journal of International Business Studies*, No. 8 (Spring/Summer), pp. 23-32
65. Johansen, J. and J. E. Vahlne (1993) "Management of internationalization", Kluwer Academic Publishers *Perspectives on strategic change*, pp. 43-78
66. Johansen, J. and J.-E. Vahlne (2003) "Business Relationship Learning and Commitment in the Internationalization Process", *Journal of International Entrepreneurship*, 1, pp. 83-101
67. Johnson-Laird, P. N. (1989) "Mental Models", The MIT Press *Mental Models* - Chapter 12 in Michael I. Posner's (ed.): "Foundations of Cognitive Science"

68. Jokinen, T. (2005) "Global leadership competencies: a review and discussion", *Journal of European Industrial Training*, Vol. 29, No. 3, pp. 199-216
69. Jöreskog, K. and D. Sörbom (2005) "LISREL 8.72 ", Scientific Software International, Inc.
70. Kanter, M. R. (2003) "Leadership and the Psychology of Turnarounds", *Harvard Business Review*, June
71. Kegan, R. (1994) "In Over Our Heads - The Mental Demands of Modern Life -", Harvard University Press
72. Kelloway, K. (1998) "Using LISREL for Structural Equation Modeling A Researcher's Guide", Sage Publications, Inc.
73. Knight, G. A. (1997) "Cross-Cultural Reliability and Validity of a Scale to Measure Firm Entrepreneurial Orientation", Elsevier Science Inc. *Journal of Business Venturing*, Vol. 12, Issue 3, p. 213
74. Knight, G. A. (2000) "Entrepreneurship and Marketing Strategy: The SME under Globalization", *Journal of International Marketing*, Vol. 8, No. 2, pp. 12-32
75. Knight, G. A. (2001) "Entrepreneurship and strategy in the international SME", *Journal of International Management*, 7, pp. 155-171
76. Kotey, B. and G. G. Meredith (1997) "Relationships among Owner/Manager Personal Values, Business Strategies, and Enterprise Performance", *Journal of Small Business Management*
77. Kyvik, O. (2003) "Report on Research in Progress: Networking and Globalization of Norwegian Medium Sized and Small Enterprises (SMEs)", Working Paper, ESADE
78. Kyvik, O. (2005) Research Note: "The Mindset and Small Firms' Networking and Internationalization Capabilities", Article presented at the EIASM's "11th Workshop on Managerial and Organizational Cognition" - March 3-5
79. Kyvik, O. (2006) "The Internationalization of Small Firms: A Cognitive Perspective", Working Paper presented at the EURAM Conference 2006, Oslo
80. Leonidou, L. C., C. S. Katsikeas and N. F. Piercy (1998) "Identifying Managerial Influences on Exporting: Past Research and Future Directions", *Journal of International Marketing*, Vol. 6, No. 2, pp. 74-102
81. Liesch, P. W. and G. A. Knight (1999) "Information Internalization and Hurdle Rates in Small and Medium Sized Enterprise Internationalization", *Journal of International Business Studies*, 30, 1 (First Quarter), pp. 383-394
82. Lyles, M. A. and C. R. Schwenk (1992) "Top Management, Strategy and Organizational Knowledge Structures", *Journal of Management Studies*, 29:2
83. MacCallum, R. C. and M. W. Browne (1993) "The Use of Causal Indicators in Covariance Structure Models: Some Practical Issues", *Psychological Bulletin*, 114 (3), pp.533-541
84. Madsen, T. K. (1998) "Executive Insights: Managerial Judgement of Export Performance", *Journal of International Marketing*, Vol. 6, No. 3, pp. 82-93

85. Maignan, I. and B. A. Lukas (1997) "Entry Mode Decisions: The Role of Managers' Mental Models", *Journal of Global Marketing*, Vol. 10 (4)
86. Markóczy, L. (1997) "Measuring Beliefs: Accept no Substitutes", *Academy of Management Journal*, Vol. 40, No. 5, pp. 1228-1242
87. Maturana, H. R. and F. J. Valera (1987) "The Tree of Knowledge - The Biological Roots of Human Understanding", Shambhala Publications, Inc.
88. Maule, J. A. and G. P. Hodgkinson (2003) "Re-appraising Managers' Perceptual Errors: A Behavioural Decision-Making Perspective", *British Journal of Management*, Vol. 14, pp. 33-37
89. McDougall, P. P. and B. M. Oviatt (2000) "International Entrepreneurship: The Intersection of two Research Paths", *Academy of Management Journal*, Vol. 43, No. 5, pp. 902-906
90. Meindl, J. R., C. Stubbart and J. F. Porac (1994) "Cognition Within and Between Organizations: Five Key Questions", *Organization Science*, Vol. 5, No. 3
91. Miller, D. (1983) "The Correlates of Entrepreneurship in Three Types of Firms", *Management Science*, 29, pp. 770-791
92. Miller, D. and J. M. Toulouse (1986) "Chief Executive Personality and Corporate Strategy and Structure in Small Firms", *Management Science*, 29, pp. 221-235
93. Mintzberg, H. and J. Lampel (1999) "Reflecting on the Strategy Process", *Sloan Management Review*, spring
94. Mittelstaedt, J. D., G. N. Harben and W. A. Ward (2003) "How Small Is Too Small? Firm Size as a Barrier to Exporting from the United States", *Journal of Small Business Management*, 41 (1), pp. 68-84
95. Moen, O. and P. Servais (2002) "Born Global or Gradual Global? Examining the Export Behavior of Small and Medium-Sized Enterprises", *Journal of International Marketing*, Vol. 10, No.3, pp. 49-72
96. Moingeon, B. and A. Edmondson (1996) "Organizational Learning and Competitive Advantage", Sage Publications
97. Nelson, R. R. and G. S. Winter (1982) "An Evolutionary Theory of Economic Change", The Belknap Press of Harvard University Press
98. Nonaka, I. and H. Takeuchi (1995) "The knowledge-creating company", Oxford University Press
99. Nootboom, B. (2003) "Elements of a Cognitive Theory of the Firm", Discussion Paper, Tilburg University, No. 2005-46, Paper for symposium on cognition & economics, Great Barrington MA, USA, July 17-20
100. Nummela, N., S. Saarenketo and K. Puumalainen (2004) "A Global Mindset - A Prerequisite for Successful Internationalization?", *Canadian Journal of Administrative Sciences*, 21 (1), pp. 51-64
101. Nunnally, J. C. (1978) "Psychometric theory", 2nd ed, McGraw-Hill
102. Patton, Q. M. (2001) "Qualitative Research & Evaluation Methods", Sage Publications

103. Peng, M. W. (2001) "The resource-based view and international business", *Journal of Management*, 27, pp. 803-829
104. Peteraf, M. and M. Shanley (1997) "Getting to know you: a theory of strategic group identity", *Strategic Management Journal*, 18 (summer special issue), pp. 165-186
105. Philp, N. E. (1998) "The export propensity of the very small enterprise (VSE)", *International Small Business Journal*, July-Sept, Vol. 16, N 4
106. Porac, J. F., H. Thomas and C. Baden-Fuller (1989) "Competitive Groups as Cognitive Communities: The Case of Scottish Knitwear Manufacturers", *Journal of Management Studies*, 26:4
107. Reger, R. K. and A. S. Huff (1993) "Strategic Groups: A Cognitive Perspective", *Strategic Management Journal*, Vol. 14, pp. 103-124
108. Reid, S. D. (1981) "The Decision-Maker and Export Entry and Expansion", *Journal of International Business Studies (pre-1986)*, fall, 12, 2
109. Reid, S. D. (1983) "Firm Internationalization, Transaction Costs and Strategic Choice", *Journal of International Business Studies*, 2, pp. 44-56
110. Reve, T., K. Haanaes and M. Vikesland (2004) "NORWAY - from a northern star to a falling star?", Case presented at the Oslo Business Summit 2004
111. Reve, T. and E. W. Jakobsen (2001) "Et verdiskapende Norge", Universitetsforlaget
112. Ripsas, S. (1998) "Towards an Interdisciplinary Theory of Entrepreneurship", *Small Business Economics*, 10: pp. 103-115
113. Robinson, R. B. and J. A. Pearce (1983) "The Impact of Formalized Strategic Planning on Financial Performance in Small Organizations", *Strategic Management Journal*, 4 (July-September), pp. 197-207
114. Rokeach, M. (1973) "The Nature of Human Values", The Free Press & Macmillan Publishing Co, Inc.
115. Sadler-Smith, E. et al. (2003) "Managerial Behavior, Entrepreneurial Style, and Small Firm Performance", *Journal of Small Business Management*, 41 (1), pp. 47-67
116. Saris, W. E. and A. Satorra (2006) "Detection of misspecifications in Structural Equation Models?", (forthcoming)
117. Saris, W. E., A. Satorra and D. Sorbom (1987) "The detection and correction of specification errors in structural equation models", Jossey-Bass, In C. Clogg (Ed.), *Sociological methodology*, pp. 105-129
118. Saris, W. E. and H. L. Stronkhorst (1984) "Causal Modelling in Nonexperimental Research - An Introduction to the LISREL Approach", Sociometric Research Foundation
119. Satorra, A. (1992) "Asymptotic robust inferences in the analysis of mean and covariance structures", Blackwell, In P. V. Marsden (Ed.) *Sociological methodology*, pp. 249-278
120. Schutz, A. (1953) "Common-Sense and Scientific Interpretation of Human Action", *Philosophy and Phenomenological Research*, Vol. XIV, No. 1

121. Schwab, D. P. (1980) "Construct validity in organizational behavior", Greenwich, CT: JAI Press *In L.L. Cummings & B.M. Staw (Eds.), Research in organizational behavior*, Vol. 2, pp. 3-43
122. Senge, P. M. (1990) "The Fifth Discipline The Art & Practice of The Learning Organization", Random House Business Books
123. Shuman, J. C. and J. A. Seeger (1986) "The Theory and Practice of Strategic Management in Smaller Rapid Growth Firms", *American Journal of Small Business*, 11 (Summer), pp. 7-18
124. Simmonds, K. and H. Smith (1968) "The First Export Order: A Marketing Innovation", *European (British) Journal of Marketing*, 2
125. Simon, H. A. (1978) "Rational Decision Making in Business Organizations", *Lecture by Herbert A. Simon when receiving the Nobel Prize in Economic Science, December 8*
126. Simon, H. A. (1982) "Models of Bounded Rationality", MIT Press
127. Singleton, R. A. and B. C. Straits (1999) "Approaches to social research", Oxford University Press
128. Spender, J. C. (1996) "Organizational Knowledge, Learning and Memory: Three Concepts in Search of a Theory", *Journal of Organizational Change Management*, Vol. 9, No. 1, pp. 63-78
129. Stöttinger, B. and B. B. Schlegelmilch (2000) "Psychic distance: a concept past its due date?", *International Marketing Review*, Vol. 17, No. 2, pp. 169-173
130. Sutcliffe, K. M. and G. P. Huber (1998) "Firm and Industry as Determinants of Executive Perceptions of the Environment", *Strategic Management Journal*, 19: pp. 793-807
131. Swan, J. (1997) "Using Cognitive Mapping in Management Research: Decisions about Technical Innovation", *British Journal of Management*, Vol. 8, pp. 183-198
132. Taylor, S. J. and R. Bogdan (1984) "Introduction to Qualitative Research Methods: The Search for Meanings", John Wiley, 2nd Edition
133. Teece, D. J., G. Pisano and A. Shuen (1997) "Dynamic Capabilities and Strategic Management", *Strategic Management Journal*, Vol. 18:7, pp. 509-533
134. Townsend, P. and L. Cairns (2003) "Developing the Global Manager Using a Capability Framework", *Management Learning*, 34(3): pp. 313-327
135. Voogt, R. (2004) "'I'm not interested' - Non-response bias, response bias stimulus effects in election research", *Ph.d. dissertation*, University of Amsterdam
136. Weick, K. E. (1979) "The Social Psychology of Organizing", Addison-Wesley
137. Weick, K. E. (1984) "Managerial Thought in the Context of Action", In: S. Srivastava (ed.), *The Executive Mind*, pp. 221-242, Jossey-Bass
138. Weick, K. E. (1989) "Theory construction as disciplined imagination", *Academy of Management Review*, 14: pp. 516-531
139. Weick, K. E. (2001) "Making Sense of the Organization", Blackwell Publishing

140. Weick, K. E. (2002) "Puzzles in Organizational Learning: An Exercise in Disciplined Imagination", *British Journal of Management*, Vol. 13, pp. 7-15
141. Welch, L. S. and R. K. Luostarinen (1993) "Inward-Outward Connections in Internationalization", *Journal of International Marketing*, Vol. 1, Number 1
142. Wernerfelt, B. (1984) "A Resource-based View of the Firm", *Strategic Management Journal*, Vol. 5, pp. 171-180
143. Wiedersheim-Paul, F., H. C. Olson and L. S. Welch (1978) "Pre-Export Activity: The First Step in Internationalization", *Journal of International Business Studies*, Spring/Summer, pp. 47-58
144. Williams, E. E. (1983) "Entrepreneurship, innovation and economic growth", Elsevier Scientific Publishing Company
145. Wind, Y. J. and C. Crook (2005) "The Power of Impossible Thinking, Transform the Business of Your Life and the Life of Your Business", Pearson Education, Inc./Wharton School Publishing
146. Yang, Y. S., R. P. Leone and D. L. Alden (1992) "A Market Expansion Ability Approach to Identify Potential Exporters", *Journal of Marketing*, Vol. 56, January, pp.84-96
147. Yeoh, P.-L. (2005) "A conceptual framework of antecedents of information search in exporting - Importance of ability and motivation", *International Marketing Review*, Vol. 22, No. 2, pp. 165-198
148. Äyväri, A. and K. Möller (2004) "Entrepreneurial Networking and Marketing - Dealing with People", Published on the Internet 04.02.2004 *Work-in-progress paper, Helsinki School of Economics and Business Administration*

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LIST OF CONSTRUCT-ABBREVIATIONS

<i>chhgrnd</i>	childhood grounding
<i>edulang</i>	education and language skills
<i>dmchar</i>	decision-maker characteristics
<i>workexp</i>	work-experience
<i>firmchar</i>	firm-characteristics
<i>globalor</i>	global orientation
<i>domperf</i>	domestic firm performance
<i>globmind</i>	global mindset
<i>frmintbh</i>	firm-internationalization behavior
<i>intiocon</i>	international inward/outward connections
<i>intnetwg</i>	international networking
<i>intperf</i>	international firm performance

APPENDICES

Appendix 1: Sample list

Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
1	A OLUFSEN SKIPSSERVICE AS	HAUGE SUND	post@olufsen- skipsservice.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
2	A/S Nesseplast	BALES TRAND	nesseplast@nesseplast.no	25220 Prod. av plastemballasje
3	AAKRE MEKANISKE AS	HARAM SØY	andreas@aakremekaniske.no	28510 Overflatebehandling av metaller
4	AANESTAD ENGINEERING AS	STAVA NGER	kad@aanestad.no	29229 Prod. av løfte- og håndteringsutstyr ellers
5	AANNØ AS	LANGE VÅG	haavard@aanno.no	36140 Prod. av møbler ellers
6	AARSLAND MØBELFABRIKK AS	VIGRE STAD	sigrid.steinnes@aarsland.no	36120 Prod. av andre møbler for kontor og butikk
7	ÅDNE ESPELAND AS	ÅLGÅR D	kontoret@jaeder.no	15130 Prod. av kjøtt- og fjørfevarer
8	AGR SUBSEA AS	STRAU ME	so@agr.no	11200 Tjenester tilkn. olje- og gassutvinning
9	AKSEL L HANSSON AS	HJELM ELAND	lise@aksel.no	36110 Prod. av sittemøbler
10	ALFA NORDIC SERVICES AS	RANDA BERG	rhove@alfa-nordic.no	35115 Innrednings- og install.arbeid utført på borerigger og
11	ALFABET REKLAME AS	STAVA NGER	tone@alfabet.no	25210 Prod. av halvfabrikater av plast, 28750 Prod. av metal
12	ÅLGÅRD OFFSET AS	ÅLGÅR D	tbn@a-o.no	22220 Trykking ellers
13	ALUTEC AS	OS	knut-jarle@alutec.no	28110 Prod. av metallkonstruksjoner og deler
14	AMITEC AS	KOKST AD	glenn.heggernes@amitec.no	72220 Annen konsulentvirksomhet tilknyttet system- og progra
15	ANDREAS BJØRGE AS	ELLING SØY	erling.bjorge@andreas.no	51381 Engroshandel med fisk og skaldyr, 15201 Prod. av salt
16	ANZETT AS	STAVA NGER	mbo@anzett.com	29120 Prod. av pumper og kompressorer, 33200 Prod. av måle-/
17	ÅRDAL STÅLINDUSTRI AS	ØVRE ÅRDAL	stale@asi.no	28750 Prod. av metallvarer ellers
18	AS BOLAKS	EIKELA NDSOS EN	bjorg@bolaks.no	5021 Prod. av matfisk og skaldyr
19	AS BRÆNNE MINERALVATN	VOLDA	gav@prosesspartner.no	15980 Prod. av mineralvann og leskedrikker
20	AS Dagbladet Dagen	BERGE N	torleif.belt@dagen.no	22120 Forlegging av aviser

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
21	AS FELLESFROST	BERGE N	erling.kvale@kingoscar.no	61103 Innenriks godstransport, 15202 Frysing av fisk, fiskef
22	AS FIRDAPOSTEN	FLORØ	svend.arne.vee@firdaposten .no	22120 Forlegging av aviser
23	AS FISKAREN	BERGE N	nils.torsvik@fiskaren.nhst.no	22130 Forlegging av blader og tidsskrifter
24	AS FISKENETT	MANGE R	kontor@fiskenett.no	17520 Prod. av tauverk og nett
25	AS FISKEVEGN	FLATR AKET	hals@fiskevegn.no	17520 Prod. av tauverk og nett
26	AS Formvac	HELLE SYLT	post@formvac.no	25240 Prod. av plastprodukter ellers
27	AS J SKATEN	ONARH EIM	mail@rjs.no	61103 Innenriks sjøtransport
28	AS KAUPANGER TRE	KAUPA NGER	odd@kaupangertre.no	20302 Prod. av bygningsartikler
29	AS KONGSHAVN INDUSTRI	GODVI K	kare@kongshavn.no	29221 Prod. av løfte- og håndteringsutstyr for skip og båter
30	AS METALLTEKNIKK	BRYNE	post@metallteknikk.no	28750 Prod. av metallvarer ellers
31	AS MØRE CODFISH COMP	ÅLESU ND	nha@codfish.no	15201 Prod. av salt-, tørr- og klippfisk, 51381 Engroshandel
32	AS NORPOWER-Brødr Malo	KRISTI ANSUN D N	lars@norpower.no	35113 Bygging og reparasjon av båter under 100 br.tonn
33	AS SIGURD OPHEIM BLIKKENSLAGERFORRE	KOKST AD	trondopheim@broadpark.no	45221 Blikkenslagerarbeid, 28520 Bearbeiding av metaller
34	AS THEODOR OLSENS EFTF. HARALD AASE	BERGE N	post@toe.no	36220 Prod. av smykker og varer av edle met., edel- og halve
35	AS TREVAREN	LÆRDA L	atre@online.no	20302 Prod. av bygningsartikler
36	AS VADHEIM ELEKTROCHEMISKE FABRIKER	VADHEI M	lasse.olav.bell@vadheim.no	24139 Prod. av uorganiske kjemikalier ellers
37	ÅSNES SKI AS	STRAU MSNES	terje.eilertsen@asnes.no	36400 Prod. av sportsartikler
38	ASTOR LANDBRUK AS	BRYNE	ob@maskinering- sveiseservice.no	29320 Prod. av jordbruks- og skogbruksmaskiner og -utstyr el
39	ATTERÅS ORTOPEDITEKNIKK AS	BERGE N	kjetil@atteraas.no	33100 Prod. av medisinsk og kirurgisk utstyr og ortopediske
40	B Innvær AS	BREMN ES	post@innvar.no	20302 Prod. av bygningsartikler
41	B TELLE TREARBEID AS	FJELL	per.atle.tellnes@telle-tre.no	20301 Prod. av monteringsferdige hus
42	BACA PLASTINDUSTRI AS	NESTT UN	af@baca.no	25220 Prod. av plastemballasje, 25210 Prod. av halvfabrikate

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
43	BALMORAL NORGE AS	RANDA BERG	petter.nilsen@balmoral.no	29229 Prod. av løfte- og håndteringsutstyr ellers
44	BARAGRUPPEN AS	BERGE N	bara@bara.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
45	BARO MEK VERKSTED AS	EGGES BØNES	ove@baro.no	35116 Prod. av annet flytende materiell
46	BÅTUTRUSTNING BØMLO AS	RUBBE STADN ESET	niils@bu.bomlo.as	35113 Bygging og reparasjon av båter under 100 br.tonn
47	BERG LIPIDTECH AS	EIDSNE S	staale.berg@blt.no	15411 Prod. av fiskeoljer og fett
48	BERGE SAG OG TRELAST AS	ØLENS VÅG	thorow@bergesag.no	20301 Prod. av monteringsferdige hus, 51532 Engroshandel med
49	BERGEN MALINGFABRIKK AS	GODVI K	postmaster@bergen-malingfabrikk.no	24301 Prod. av maling og lakk
50	BERGEN TANKERS AS	STRAU ME	koh@bergen-tankers.no	61103 Innenriks sjøtransport
51	BERGEN TEKNISKE BELYSNING AS	NESTT UN	b.hauge@vestlys.no	31500 Prod. av belysningsutstyr og elektriske lamper
52	BERGENSAVISEN TRYKK AS	BERGE N	steinar.johannessen@ba.no	22210 Trykking av aviser
53	BETONOR AS	FØRDE	per.ole.bruket@betonor.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
54	BIOMEGA AS	STORE BØ	kjartan.sandnes@marinbio.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
55	BJARNE ESPE TREVAREFABRIKK AS	NORDF JORDEI D	post@espetrevare.no	36130 Prod. av andre kjøkkenmøbler
56	BLAALID AS	RAUDE BERG	silden@blaalid.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
57	BLADET SUNNHORDLAND AS	STORD	jens.hystad@sunnhordland.no	22120 Forlegging av aviser
58	BLOM FISKEOPPDRETT AS	RONG	martin.blom@blom-fiskeoppdrett.no	5021 Prod. av matfisk og skaldyr
59	BOLSETH GLASS AS	SANDA NE	jhb@bolseth.no	28120 Prod. av bygningsartikler av metall
60	BØMLO CONSTRUCTION AS	MOSTE RHAMN	post@bc.no	28110 Prod. av metallkonstruksjoner og deler
61	BORDING AS	INDRE ARNA	jhm@bordingmail.com	22220 Trykking ellers
62	BR LUNDAL AS	FØRRE SFJOR DEN	brlundal@c2i.net	15130 Prod. av kjøtt- og fjørfevarer
63	BRISK KOMPETANSESENTER AS	ÅLESU ND	frode.vestad@brisk.no	85334 Arbeidstrening for ordinært arbeidsmarked, 18210 Prod.

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
64	BRØDR HUKKELBERG AS	AUKRA	tormod@hukkelberg.no	35113 Bygging og reparasjon av båter under 100 br.tonn
65	BRØDR LANGSET AS	LYNGS TAD	jan-tore@langset.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
66	BRØDRENE AA AS	HYEN	tor@braa.no	35113 Bygging og reparasjon av båter under 100 br.tonn, 2524
67	BRØDRENE LARSEN AS	LAKSE	bjoern@brlarsen.no	31100 Prod. av elektromotorer, generatorer og transformatore
68	ELEKTRISK VERKST BRØDRENE SELVIK AS	VÅG SAUDA	rune.selvik@brselvik.no	29520 Prod. av maskiner og utstyr til bergverksdrift og bygg
69	BRYNE MEKANIKK SERIGSTAD STEEL AS	BRYNE	kbs@bmsas.no	27520 Støping av stål
70	BRYNE OFFSET AS	BRYNE	rune@bryneoffset.no	22220 Trykking ellers
71	BULANDET FISKEINDUSTRI AS	BULAN DET	bufi@online.no	15202 Frysing av fisk, fiskefileter, skaldyr og bløtdyr
72	BYBERG AS	KLEPP E	magnar@byberg.no	28110 Prod. av metallkonstruksjoner og deler
73	BYGG OG VENTILASJON AS	MJØLK ERÅEN	post@bov.no	45221 Blikkenslagerarbeid, 28510 Overflatebehandling av meta
74	CLAMPON AS	LAKSE VÅG	mail@clampon.no	33200 Prod. av måle-/kontrollinstr./-utstyr, unntatt ind. pr
75	COD CULTURE NORWAY AS	RONG	olafur.halldorsson@marineh arvest.com	5022 Prod. av yngel og settefisk
76	CONOCOPHILLIPS INVESTMENTS NORGE AS	TANAN GER	trond- erik.johansen@conocophillip s.com	11100 Utvinning av råolje og naturgass, 61101 Utenriks sjøfa
77	CONTINENTAL SHIP CREWING AS	KARMS UND	ertslan@continentalship.com	61101 Utenriks sjøfart
78	CONTRACT MØBLER AS	STORD AL	harry.tosse@contract.no	36140 Prod. av møbler ellers
79				
80	DALANE TIDENDE OG EGERSUNDS AVIS AS	EGERS UND	geirjan@dalane-tidende.no	22130 Forlegging av blader og tidsskrifter
81	DALE SKO AS	DALE I SUNNF JORD	dale-sko@senswave.no	19300 Prod. av skotøy
82	DALSEIDE SHIPPING SERVICES AS	BEKKJ ARVIK	td@rustibus.no	29560 Prod. av spesialmaskiner ellers, 35115 Innrednings- og
83	DATATRYKK AS	STAVA NGER	lars@datatrykk.no	22220 Trykking ellers
84	DESIGNTRYKKERIET AS	BERGE N	firma@designtrykkeriet.no	22220 Trykking ellers, 85334 Arbeidstrening for ordinært arb
85	DEVOLD OF NORWAY AS	LANGE VÅG	kms@devold.no	17720 Prod. av gensere, jakker og vester av trikotasje

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
86	DHR REKLAMEBYRÅ AS	KARMS UND	harald@dhr.no	74400 Annonse- og reklamevirksomhet, 22220 Trykking ellers
87	DREGGEN CRANE AS	BERGE N	tg@dreggen.no	29229 Prod. av løfte- og håndteringsutstyr ellers
88	DREVELIN AS	BERGE N	rolf@drevelin.no	33100 Prod. av medisinsk og kirurgisk utstyr og ortopediske
89	DRIVA TRYKK AS	SUNND ALSØR A	ole.magne.ansnes@driva.no	22120 Forlegging av aviser
90	DYRKORN AS	ÅLESU ND	kurt.pettersen@dyrkorn.no	17520 Prod. av tauverk og nett
91	E CHRISTOPHERSEN AS	SANDN ES	post@christophersen.no	36220 Prod. av smykker og varer av edle met., edel- og halve
92	E NATVIK PRENTEVERK AS	FLORØ	odd.erik.natvik@natvik.no	22220 Trykking ellers
93	EGERSUND NET AS	EGERS UND	bh@egersund-traal.no	17520 Prod. av tauverk og nett
94	EGERSUND SILDOLJEFABRIKK AS	EGERS UND	emh@egersund-fisk.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
95	EIDE MASKIN AS	EIDE	egil.slemmen@eidemaskin.no	51820 Engroshandel med maskiner og utstyr til bygge- og anle
96	ELECON AS	STORD	jn@elecon.no	45310 Elektrisk installasjonsarbeid, 35112 Innrednings- og i
97	ENGESSETDAL AS	SKODJ E	magne@engesetdal.no	20101 Saging og høvling av tre
98	ERIK FOSS & SØNNER AS	ÅLESU ND	erfoss@online.no	17520 Prod. av tauverk og nett
99	FAGBOKFORLAGET VIGMOSTAD & BJØRKE A	BERGE N	ab@fagbokforlaget.no	22110 Forlegging av bøker
100	FARSTAD GLASS & ALUMINIUM DRIFT AS	SANDN ES	inge.magnor@farstad-ga.no	28120 Prod. av bygningsartikler av metall
101	FEDJE MEKANISKE INDUSTRIER AS	FEDJE	svein@fedjemek.no	29229 Prod. av løfte- og håndteringsutstyr ellers
102	FIGGJO VENTILASJON AS	SANDN ES	figgjo@frisurf.no	28120 Prod. av bygningsartikler av metall
103	FINNØY GEAR & PROPELLER AS	HARØY	nfinnoy@online.no	28750 Prod. av metallvarer ellers
104	FINNY SIREVAAG AS	SIREVÅ G	ingvald.fardal@f-s.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
105	Firda Canning Co. A/S	MÅLØY	firdacan@online.no	15203 Prod. av fiskehermetikk
106	FIRMENICH BJØRGE BIOMARIN AS	ELLING SØY	oddvar.bjorge@firmenich.com	15201 Prod. av salt-, tørr- og klippfisk
107	FJELDES MEK VERKSTED AS	JØRPE LAND	fmv@frisurf.no	28520 Bearbeiding av metaller

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
108	FJELL BLIKK AS	ÅGOTN ES	tom.petter.eriksen@fb-gruppen.com	28510 Overflatebehandling av metaller, 45221 Blikkenslagerar
109	FJORDENES TIDENDE AS	MÅLØY	ew@fjt.no	22120 Forlegging av aviser
110	FJORDINGEN AS	STRYN	adm@fjordingen.no	22120 Forlegging av aviser
111	FLATSETSUND MØBEL OG TREVAREFABRIKK	FREI	arne.lillevik@flatsetsund.no	36120 Prod. av andre møbler for kontor og butikk
112	FLEKSIBO AS	BALES TRAND	svein@fleksibo.no	36140 Prod. av møbler ellers, 36130 Prod. av andre kjøkkenmø
113	FLORØ STÅL AS	FLORØ	rsvardal@start.no	28520 Bearbeiding av metaller
114	FORLAGET STRILEN AS	ISDALS TØ	jon.halstein@strilen.no	22120 Forlegging av aviser
115	FØRRE TREVAREFABRIKK AS	FØRRE SFJOR DEN	post@forretrevare.no	20302 Prod. av bygningsartikler
116	FORSAND SANDKOMPANI AS	FORSA ND	post@forsand-sandkompani.no	14210 Utvinning fra grus- og sandtak
117	FORUS ELEKTRO AUTOMATIKK AS	STAVA NGER	knut@forus-elektro.no	31200 Prod. av elektriske fordelings- og kontrolltavler og p
118	FOSSAN EIENDOM AS	STAVA NGER	lars@kran-elektro.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
119	FOSS-EIK MEK VERKSTED AS	SANDN ES	einarb@foss-eik.no	34200 Prod. av karosserier og tilhengere
120	FREKHAUG TRAPPEFABRIKK AS	FOTLA NDSVÅ G	lhopsdal@frisurf.no	20302 Prod. av bygningsartikler
121	FRISTADS NORGE AS	GURSK ØY	post@fristads.no	18210 Prod. av arbeidstøy
122	Fusa Mekaniske Industri AS	EIKELA NDSOS EN	post@fusamek.no	28520 Bearbeiding av metaller
123	FYLLINGEN SLIPP AS	LANGE VÅG	gunnar@fyllingenslipp.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
124	GABBAS AS	STAVA NGER	jostein@gabbas.no	15130 Prod. av kjøtt- og fjørfevarer
125	GAPO AS	ÅLGÅR D	frank@gapo.no	20302 Prod. av bygningsartikler
126	GC RIEBER OILS AS	KRISTI ANSUN D N	arne.alnaes@gcrieber.no	15411 Prod. av fiskeoljer og fett
127	GEFRO OILFIELD SERVICES ASA	TANAN GER	frode.thoresen@gefro.no	35114 Bygging og reparasjon av oljeplattformer og moduler
128	GJERSDAL TREINDUSTRI AS	VOLDA	roar@gjersdal.no	36140 Prod. av møbler ellers, 36110 Prod. av sittemøbler
129	GLASSMESTER GJESDAL AS	NESTT UN	tor@glassmester-gjesdal.no	26120 Bearbeiding av planglass

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
130	GRAFISK TEAM BERGEN AS	KOKSTAD	asbjorn@grafiskteam.no	22220 Trykking ellers, 22240 Ferdiggjøring før trykking, 222
131	GRAFO TRYKKERI AS	STAVANGER	per@grafo.no	22220 Trykking ellers
132	GRANBERG GARVERI AS	ØLENSVÅG	post@granberggarveri.no	18300 Beredning og farging av pelskinn. Prod. av pelsvarer
133	GRANNAR AS	ETNE	liv-kari.bodtker@grannar.no	22120 Forlegging av aviser
134	GRANVIN BRUK AS	GRANVIN	jan-gunnar.strand@granvinbruk.no	20101 Saging og høvling av tre
135	GRAVØR HØINES AS	STAVANGER	op@id-produkter.no	22250 Annen grafisk produksjon
136	GRAVØR REIDAR PETERSEN AS	BERGEN	post@gravorpettersen.no	36630 Industriproduksjon ikke nevnt annet sted
137	GRIEG BILLABONG AS	BERGEN	abirkeland@grieg.no	61101 Utenriks sjøfart
138	GRIEG MEDIA AS	BERGEN	bjarne@viover60.no	22130 Forlegging av blader og tidsskrifter
139	GRIEG SEAFOOD ROGALAND AS	BERGEN	tmoss@grieg.no	5021 Prod. av matfisk og skaldyr
140	GRØVIK VERK AS	ØRSTA	kaare@grovik.no	28750 Prod. av metallvarer ellers
141	GRYTNES BETONG AS	SUNNDAL	tine.grytnes@grytnes.as	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
142	GURSKØY SVEISEINDUSTRI AS	GURSKØY	kjell@gurskoy.no	28110 Prod. av metallkonstruksjoner og deler
143	HAFRSFJORD TRE AS	STAVANGER	arne@hafrsfjordtre.no	20302 Prod. av bygningsartikler
144	HALAAS OG MOHN AS	KRISTIANSDAL	per.halaas@halaas.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
145	HALSVIK AGGREGATES AS	DALSØYRA	lars@wergeland-halsvik.no	14210 Utvinning fra grus- og sandtak
146	HAMRE AS	ETNE	aasmund.hamre@hamreas.no	28750 Prod. av metallvarer ellers
147	HARDANGER FISKEFOREDLING AS	STRANDEBARM	ove.aarra@hafisk.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
148	HÅRR BETONGPRODUKTER AS	VIGRESTAD	kjell.inge.hope@harrbetong.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
149	HATLEHOLS AS	BRATTVÅG	bjorn.hatlehol@hatlehols.no	22220 Trykking ellers
150	HAUGESUND BOK & OFFSET AS	HAUGESUND	orjan.risanger@hbo.no	22220 Trykking ellers

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
151	HBH MØBLER AS	FOTLA NDSVÅ G	stein.olsen@hbh.no	36140 Prod. av møbler ellers
152	HEGGEN MØBELFABRIKK AS	NORDF JORDEI D	jarle@heggen-mobel.no	36140 Prod. av møbler ellers
153	HEGGLAND HEILTRE AS	OS	roald@heggland-heiltre.no	36120 Prod. av andre møbler for kontor og butikk
154	HEINSA MEK VERKSTED AS	KRISTI ANSUN D N	johan.furseth@heinsa.no	29560 Prod. av spesialmaskiner ellers, 35115 Innrednings- og
155	HELDAL MEKANISKE AS	NESTT UN	elling@heldalmekaniske.no	28110 Prod. av metallkonstruksjoner og deler
156	HELLAND ELEKTRO AS	LINDÅS	trond.helland@helland-elektro.no	45310 Elektrisk installasjonsarbeid, 31200 Prod. av elektris
157	HELLESØY VERFT AS	LØFALL STRAN D	oystein.hellesoy@hv.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
158	HILLESVÅG ULLVAREFABRIKK AS	HJELM ÅS	oyvind@ull.no	17120 Bearbeiding og spinning av fiber av kardegarnstype
159	HITEC PRODUCTS AS	SANDN ES	knut.stormyr@hitecproducts.no	35114 Bygging og reparasjon av oljeplattformer og moduler
160	HJØRUNGAVÅG STÅL AS	ULSTEI NVIK	hstaal@online.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
161	HOLE GLASS AS	NESTT UN	endre.hole@online.no	26110 Prod. av planglass
162	HOLEN AS	LANGE VÅG	lars.gunnar@holenas.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
163	HOLMEFJORD FRYSERI AS	EIKELA NDSOS EN	hfryser@online.no	15201 Prod. av salt-, tørr- og klippfisk
164	HORDAFOR AS	BEKKJ ARVIK	tor@provisi.no	15411 Prod. av fiskeoljer og fett, 15710 Prod. av fôr til hu
165	HORDALAND BLADDRIFT AS	VOSS	akg@avisa-hordaland.no	22130 Forlegging av blader og tidsskrifter
166	HOVDEN MØBEL AS	ØRSTA	joneiken@online.no	36110 Prod. av sittemøbler
167	HOVE MØBLER AS	STORD AL	eldar.eilertsen@hjelegjerde.no	36110 Prod. av sittemøbler
168	HS MASKIN AS	SAUDA SJØEN	asbjorn@hs-maskin.no	28520 Bearbeiding av metaller
169	HUSNES MEK OG RØR HYDEQ AS	ØVRE ÅRDAL	anders.seim.jr@hmr.no	29560 Prod. av spesialmaskiner ellers
170	HUSNES MEK OG RØR VOSS AS	VOSS	knut.flatlandsmo@hmr.no	29229 Prod. av løfte- og håndteringsutstyr ellers

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
171	HUSØY STÅL AS	AVALD SNES	post@huoystal.no	28110 Prod. av metallkonstruksjoner og deler
172	HUSTADKALK AS	ELNES VÅGEN	andor.wicken@hustakalk.no	14120 Bryting av kalkstein, gips og kritt
173	HYDAL AS	HÅVIK	stale.karlsen@hydal.com	27422 Prod. av halvfabrikater av aluminium
174	HYDRAKRAFT A/S	ULSTEI NVIK	gsm@hydrakraft.no	29229 Prod. av løfte- og håndteringsutstyr ellers
175	HYDROTECH GRUPPEN AS	KRISTI ANSUN D N	geir.molvik@hydrotech.no	5021 Prod. av matfisk og skaldyr
176	I O S TUBULAR MANAGEMENT AS	TANAN GER	per.ravnestad@itm.no	27220 Prod. av andre rør og rørdeler av jern og stål
177	IKM GJERSETH ELEKTRO AS	STAVA NGER	arne.vervik@ikm.no	31100 Prod. av elektromotorer, generatorer og transformatorer
178	IKM LABORATORIUM AS	TANAN GER	stale.kyllingstad@ikm.no	71340 Utleie av maskiner og utstyr ellers, 74300 Teknisk prø
179	INDRE HARDANGER INDUSTRI AS	ODDA	ihiodda@start.no	85334 Arbeidstrening for ordinært arbeidsmarked, 28520 Bearb
180	INTERCONTROL AS	OS	ic@intercontrol.no	33300 Prod. av industrielle prosessstyringsanlegg
181	INTERIØR-SNEKKERIET AS	BERGE N	bjorn@isnekkeriet.no	20302 Prod. av bygningsartikler, 36140 Prod. av møbler eller
182	ISBJØRN IS AS	FOLLE SE	bjarte@isbjorn-is.no	15520 Prod. av iskrem
183	J L BRUVIK AS	NYBOR G	jbruvik@bruvik.no	29230 Prod. av kjøle- og ventilasjonsanl., unnt. til hushold
184	JÆRBETONG AS	NÆRB Ø	marin.malmin@jaerbetong.no	26630 Prod. av ferdigblandet betong
185	JÆRBLADET AS	BRYNE	ir@jbl.no	22130 Forlegging av blader og tidsskrifter
186	JÆREN LANDBRUKSSENTER AS	VARHA UG	jarle@jls.no	28520 Bearbeiding av metaller, 29320 Prod. av jordbruks- og
187	JÆREN TRETEKNIKK AS	KVERN ALAND	svein.myklebust@jaeren-treteknikk.no	20302 Prod. av bygningsartikler
188	JAKOB HATTELAND ASSEMBLY AS	NEDRE VATS	svein.age.hjorteland@hattel and.com	31620 Prod. av elektrisk utstyr ellers
189	JETS VACUUM AS	HAREI D	jan-tore.leikanger@jets.no	26220 Prod. av sanitærutstyr av keramisk materiale
190	JOHAN GISKEØDEGÅRD AS	VALDE RØY	johan@giskeodegaard.no	15201 Prod. av salt-, tørr- og klippfisk
191	JOHANNES ØSTENSJØ & CO AS	HAUGE SUND	torstein.ostensjo@ostensjo.c om	25220 Prod. av plastemballasje
192	JOHN GRIEG GRAFISK AS	BERGE N	arnstein.bjorke@fagbokforla get.no	22220 Trykking ellers

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
193	JOHS LUNDAL & SØNNER AS	ETNE	johslunde@sensewave.com	15130 Prod. av kjøtt- og fjørfevarer
194	JONDAL STÅL AS	JONDA L	haakon@jondalstaal.no	28110 Prod. av metallkonstruksjoner og deler
195	K SÆTRE & SØNNER AS	AUSTR HEIM	frode@ksaetre.no	61101 Utenriks sjøfart
196	K Strømmen Lakseoppdrett AS	RUGSU ND	kontor@k.strommen.lakseop pdrett.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
197	KARL KJOSAVIK AS	SANDN ES	kjell.kjosavik@norengros.co m	21210 Prod. av bølgepapp og emballasje av papir og papp, 361
198	KARLSEN & SØNN AS	STRAU ME	firmapost@karlsen-sonn.no	28110 Prod. av metallkonstruksjoner og deler
199	KARMØY PRODUKSJON AS	VEDAV ÅGEN	ah-john@online.no	20400 Prod. av treemballasje, 85335 Varig vernet arbeid
200	KARSTEN MOHOLT OFFSHORE AS	BERGE N	karsten.aleksander@karsten -moholt.no	29111 Prod. av skipsmotorer
201	KIS VEST AS	LAKSE VÅG	sigmund.borge.raa@kis.as	29240 Prod. av maskiner og utstyr til generell bruk ellers
202	KJØKKEN-GARDEROBE-BAD AS	AVALD SNES	kgb@kgb.no	36130 Prod. av andre kjøkkenmøbler
203	KLAUSEN INDUSTRIER SVELGEN AS	SVELG EN	firmapost@klausen.no	28110 Prod. av metallkonstruksjoner og deler
204	KLAUSEN MEK VERKSTED AS	HOLME DAL	arne@klausen.no	28110 Prod. av metallkonstruksjoner og deler
205	KLEPP MEK AS	KLEPP E	magne.oma@kleppmek.no	29520 Prod. av maskiner og utstyr til bergverksdrift og bygg
206	KOBBELTVEDT EMBALLASJE AS	BERGE N	jonrune@kobbeltvedt.no	21210 Prod. av bølgepapp og emballasje av papir og papp
207	KOMPASS NORGE AS	STAVA NGER	ps@kompass.no	22110 Forlegging av bøker, 72400 Drift av databaser
208	KRISTEN MEDIAALLIANSE DRIFT AS	STRAU ME	bjarte@idag.no	22120 Forlegging av aviser
209	KURT HAMRE AS	FANA	kurhamre@broadpark.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
210	KVALSVIK TREINDUSTRI AS	HAREI D	odd@kvalsvik.no	36130 Prod. av andre kjøkkenmøbler
211	KVERNELAND ASA	KVERN ALAND	knut.oversjoen@kverneland group.no	29320 Prod. av jordbruks- og skogbruksmaskiner og -utstyr el
212	KVINNHERINGEN AS	HUSNE S	redaksjon@kvinnheringen.n o	22120 Forlegging av aviser
213	KYMA AS	ULSET	mail@kyma.no	33200 Prod. av måle-/kontrollinstr./-utstyr, unntatt ind. pr
214	L K HJELLE MØBELFABRIKK AS	SYKKY LVEN	dag@hjelle.no	36110 Prod. av sittemøbler

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
215	LAADER BERG AS	ÅLESU ND	malvin.berg@laaderberg.co m	29560 Prod. av spesialmaskiner ellers
216	LANNE ELEKTRISKE VERKSTED AS	STAVA NGER	egil.lanne@lanne.no	31100 Prod. av elektromotorer, generatorer og transformatorer
217	LARS P RIKSHEIM TREINDUSTRI AS	STRAU MGJER DE	asbjorn@lpriksheim.no	36110 Prod. av sittemøbler
218	LÅSGRUPPEN WILHELM NIELSEN AS	BERGE N	svein.hjornevik@lasgruppen. no	28630 Prod. av låser og beslag
219	LEINE RØR AS	LEINØY	ivar@leineindustri.no	35112 Innrednings- og install.arbeid utført på skip over 100
220	LUSTER MEKANISKE INDUSTRI AS	GAUPN E	geir.oren@lmi-as.no	28110 Prod. av metallkonstruksjoner og deler
221	MAALØY SEAFOOD AS	MÅLØY	roger.skavoypoll@globalfish. no	15202 Frysing av fisk, fiskefileter, skalldyr og bløtdyr
222	MALM ORSTAD AS	VOLL	tjo@malmorstad.no	29229 Prod. av løfte- og håndteringsutstyr ellers
223	MÅLØY SILDOLJEFABRIKK AS	DEKNE POLLE N	arnt- ove.hoddevik@welcom.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
224	MÅLØY VERFT AS	DEKNE POLLE N	firmapost@maloy-verft.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
225	MÅNDALEN TREVARE AS	MÅNDA LEN	sigbjorn@m-trevare.no	36110 Prod. av sittemøbler
226	Marine HVAC AS	STAVA NGER	eea@gmc.no	35115 Innrednings- og install.arbeid utført på borerigger og
227	MARITIM ELEKTRO AS	OMAST RAND	igk@maritimelektro.no	35112 Innrednings- og install.arbeid utført på skip over 100
228	MARITIM SERVICE AS	SUNDE I SUNNH ORDLA ND	svein.langeland@maritmserv ice.no	28520 Bearbeiding av metaller, 27210 Prod. av rør og rørdele
229	MARITIME MONTERING AS	BYGST AD	odd.birkeland@maritimemon tering.no	35112 Innrednings- og install.arbeid utført på skip over 100
230	MARITIME SYSTEMS AS	STAVA NGER	jokv@marsys.no	35114 Bygging og reparasjon av oljeplattformer og moduler
231	MARTHAS DELIKATESSER AS	STRAU ME	ole@marthas.no	15890 Prod. av næringsmidler ellers
232	MASKINSENTERET AS	SOGND AL	post@maskinsenteret.as	51880 Engroshandel med maskiner og utstyr til jordbruk og sk

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
233	MATRE INSTRUMENTS AS	RUBBE STADN ESET	johannes.vikanes@matreinst ruments.com	33200 Prod. av måle-/kontrollinstr./- utstyr, unntatt ind. pr
234	MATRE MASKIN AS	RUBBE STADN ESET	t.fylkesnes@matre.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
235	MEDIATRYKK AS	KOKST AD	ottar@mediatrykk.no	22220 Trykking ellers, 74820 Pakkevirkosomhet
236	MEGACON AS	BØNES	megacon@megacon.no	33200 Prod. av måle-/kontrollinstr./- utstyr, unntatt ind. pr
237	MELBY SNEKKERVERKSTED AS	EIDE	post@melby.no	20302 Prod. av bygningsartikler
238	MELINGS AS	STAVA NGER	olav@melings.no	22220 Trykking ellers
239	Midsund Bruk A/S	MIDSU ND	einar.oien@akeryards.com	28110 Prod. av metallkonstruksjoner og deler
240	MJØS METALLVAREFABRIKK AS	LONEV ÅG	eimund@mjoesmetall.no	27520 Støping av stål, 27210 Prod. av rør og rørdeler av stø
241	MMC TENDOS AS	EGGES BØNES	lrg@mmc.no	29530 Prod. av maskiner og utstyr til nærings- og nytelsesmi
242	MØGEDAL MEKANISKE VERKSTAD AS	SAND	geir@mogedal.no	29240 Prod. av maskiner og utstyr til generell bruk ellers,
243	MOGUSTA AS	STAVA NGER	morten@gunnarshaug.no	22220 Trykking ellers
244	MØRE-NYTT AS	ØRSTA	avis@morenytt.no	22220 Trykking ellers, 22130 Forlegging av blader og tidsskr
245	MULTISERV NORWAY AS	TORVA STAD	gosthus@multiserv.com	37100 Gjenvinning av metallholdig avfall og skrap
246	MUNDAL BÅT AS	SÆBØ VÅGEN	atle@mundal.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
247	MYHRE MARITIME AS	STAVA NGER	jib@myhre-maritime.no	29229 Prod. av løfte- og håndteringsutstyr ellers
248	NERGÅRD STENINDUSTRI AS	EIDE	nergsten@online.no	26700 Hogging og bearbeiding av monument- og bygningsstein
249	NERLANDS GRANITINDUSTRI AS	EIDE	h.nerland@granitt.no	26700 Hogging og bearbeiding av monument- og bygningsstein
250	NESJE AS	SKÅLA	n@nesje.no	36140 Prod. av møbler ellers, 36120 Prod. av andre møbler fo
251	NILS SPERRE AS	ELLING SØY	palmar@nsperre.as	15202 Frysing av fisk, fiskefileter, skalldyr og bløtdyr
252	NOBI NORSK BETONGINDUSTRI AS	HERDL A	mail@nobi.no	26610 Prod. av betongvarer for bygge- og anleggsvirkosomhet
253	NOGVA MOTORFABRIKK AS	SØVIK	kjell.norvoll@nogva.no	29111 Prod. av skipsmotorer

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
254	NOOMAS AS	KRISTI ANSUN D N	jensen@noomas.com	5023 Tjenester tilknyttet fiskeoppdrett
255	NOOMAS OFFSHORE AS	KRISTI ANSUN D N	kjetil.bang-olsen@ikm.no	11200 Tjenester tilkn. olje- og gassutvinning
256	NORCO AS	STRAN DA	halvor.utgard@norco.no	36120 Prod. av andre møbler for kontor og butikk
257	NORDVEST SVEIS AS	SKÅLA	odd.nordv@c2i.net	35111 Bygging og reparasjon av skip og skrog over 100 br.tøn
258	NORDVESTVINDUET BYGG OG INNBU AS	ALMEN NINGE N	jonny@nordvestvinduet.no	20302 Prod. av bygningsartikler
259	NORHEIMSUND INDUSTRIER AS	NORHE IMSUN D	niils.valland@norhand.no	18100 Prod. av klær av lær, 85334 Arbeidstrening for ordinær
260	NORMEK INDUSTRISERVICE AS	SANDN ES	husa@normek.no	29520 Prod. av maskiner og utstyr til bergverksdrift og bygg
261	NORSE OILFIELD SERVICES AS	TANAN GER	tor-ole@norse-os.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
262	NORSK STÅLPRESS AS	BERGE N	kari.bell@norstaal.no	28610 Prod. av kjøkkenredskaper og skjære- og klipperedsaper
263	NORSKE VENTILER AS	ÅGOTN ES	yvonne@norskeventiler.no	29130 Prod. av kraner og ventiler
264	NORSKILT TRAFFIC SAFETY AS	STAVA NGER	harald.gjellestad@veiprodukter.no	28750 Prod. av metallvarer ellers
265	NORSOL AS	TINGV OLL	oyvind@norsol.no	17409 Prod. av andre tekstilvarer, unntatt klær
266	NORTH SEA INNOVATION SVEIN HATVIK A	BERGE N	ahe@nsias.no	35112 Innrednings- og install.arbeid utført på skip over 100
267	NORWEGIAN TALC AS	KNARR EVIK	pergunnar.leversen@omya.com	26820 Prod. av ikke-metallholdige mineralprodukter ellers
268	NORWEGIAN UNIVERSAL TECHNOLOGY AS	HAUGE SUND	sev@nut.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
269	NYE SULEVÆR AS	HELGØ YSUND	severin@rederi-regnskap.no	61103 Innenriks sjøtransport
270	O M RAKVÅG AS	MOLDE	roy@rakvaag.no	26120 Bearbeiding av planglass, 45442 Glassarbeid
271	O SKARSBØ AS	BUD	oskarsbo@online.no	74820 Pakkevirkosomhet, 15201 Prod. av salt-, tørr- og klippf
272	O TORJUSSEN & SØNNER AS	STAVA NGER	randi@torjussen.no	45211 Oppføring av bygninger, 20200 Prod. av finér/spon-/fib
273	ODDA MEKANISKE VERKSTED AS	ODDA	vidar@omv.as	28110 Prod. av metallkonstruksjoner og deler
274	ODDA PLAST AS	ODDA	gisle@odda-plast.no	25230 Prod. av byggevarer av plast

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
275	ØDEGAARD BERGING AS	ÅLESU ND	vetle.sverdrup@bube.no	61106 Slepebåter og forsyningskip på norskekysten
276	OFFSHORE & TRAWL SUPPLY AS	VALDE RØY	rolf@otsas.no	17520 Prod. av tauverk og nett
277	OLJESERVICE AS	OLSVIK	viktor@oljeservice.no	29120 Prod. av pumper og kompressorer
278	ØLVE INDUSTRIER AS	ØLVE	an-oelve@oelve.no	29530 Prod. av maskiner og utstyr til nærings- og nytelsesmi
279	OMA BAATBYGGERI AS	STORD	gustav.oma@oma.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
280	OMA SLIPP & MEKANISKE VERKSTED AS	STORD	oma.slipp@c2i.net	35113 Bygging og reparasjon av båter under 100 br.tonn
281	ØMI PRODUKTER AS	SOLA	bjorn.ihle@omi-as.no	34300 Prod. av deler og utstyr til motorvogner og motorer
282	ORKLA TRYKK NORDVEST AS	ÅLESU ND	roar.larsen@orklatrykk.no	22210 Trykking av aviser
283	ORNES BÅTBYGGERI AS	ORNES	ornebaat@online.no	35113 Bygging og reparasjon av båter under 100 br.tonn, 3512
284	OS RØR & STÅLINDUSTRI AS	OS	ors-as@online.no	27220 Prod. av andre rør og rørdeler av jern og stål
285	OSS-NOR AS	KRISTI ANSUN D N	firmapost@ossnor.no	35114 Bygging og reparasjon av oljeplattformer og moduler
286	ØSTERBØ MASKIN AS	BJORD AL	arne@osterbo.no	31100 Prod. av elektromotorer, generatorer og transformatore
287	Østraadt Rør A/S	SANDN ES	johan.wigestrاند@ostraadtr or.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
288	PARTNER MASKINERING AS	STRAU ME	einar@partner-maskinering.no	29430 Produksjon av maskinverktøy ikke nevnt annet sted
289	PARTNER PLAST AS	ÅNDAL SNES	tom@partnerplast.com	25230 Prod. av byggevarer av plast
290	PEDER B SØRVIK AS	AVERØ Y	pbsorvik@frisurf.no	15201 Prod. av salt-, tørr- og klippfisk
291	PER OLAV TORBJØRN OG HARALDS SERVIC	TANAN GER	torbjorn@pth.no	11200 Tjenester tilkn. olje- og gassutvinning
292	PER SKARVELAND AS	SUNDE I SUNNH ORDLA ND	tore.t@skarveland.no	29210 Prod. av industri- og laboratorieovner
293	PER STAVE AS	STADL ANDET	rune@stave.as	15201 Prod. av salt-, tørr- og klippfisk
294	PETER STETTE AS	SKODJ E	office@stette.no	29530 Prod. av maskiner og utstyr til nærings- og nytelsesmi

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
295	PLA-MEK AS	STRAN DA	kai@pla-mek.no	29430 Produksjon av maskinverktøy ikke nevnt annet sted
296	PLASTO AS	ÅNDAL SNES	lars@plasto.no	25240 Prod. av plastprodukter ellers
297	POLY HAR AS	VARTD AL	jan@vartdalplast.no	25240 Prod. av plastprodukter ellers
298	POLYCREST AS	TANAN GER	rolf.ytreland@polycrest.com	11200 Tjenester tilkn. olje- og gassutvinning
299	PREPLAST INDUSTRIER AS	ELNES VÅGEN	erling@preplast.com	35116 Prod. av annet flytende materieell
300	PROFIL EMBALLASJE AS	VAKSD AL	firmapost@profilemb.no	21210 Prod. av bølgepapp og emballasje av papir og papp
301	PROMAC AS	TANAN GER	bjorn@promac.no	29410 Produksjon av bærbart, motordrevet håndverktøy
302	PROMAS AS	ÅGOTN ES	roald@promas-as.no	28520 Bearbeiding av metaller
303	PROTECTOR SKILT AS	NESTT UN	trond.waage@protector- skilt.no	28750 Prod. av metallvarer ellers
304	PROTECH AS	SUNND ALSØR A	protas@online.no	28750 Prod. av metallvarer ellers
305	Prototech AS	BERGE N	asle.lygre@prtotech.no	33200 Prod. av måle-/kontrollinstr./- utstyr, unntatt ind. pr
306	PYRO AS	SØVIK	helge.hansen@pyro.no	28220 Prod. av radiatorer og kjeler til sentralvarmeanlegg
307	RAMCO NORWAY AS	TANAN GER	arild.moe@ramco.no	11200 Tjenester tilkn. olje- og gassutvinning
308	RANCOAT AS	RANDA BERG	johnny@rancoat.no	28510 Overflatebehandling av metaller
309	RANDBERG TRYKK AS	RANDA BERG	rolfn@randabergtrykk.no	22220 Trykking ellers
310	RAUMA ULLVAREFABRIKK AS	VEBLU NGSNE S	arnstein.digernes@raumaul. no	17120 Bearbeiding og spinning av fibrer av kardegarnstyp
311	REANCO TEAM AS	HAUGE SUND	jay@reanco.no	35115 Innrednings- og install.arbeid utført på borerigger og
312	REIME PROTECH AS	NÆRB Ø	odd.jan.dybing@reime.no	28110 Prod. av metallkonstruksjoner og deler
313	REINS MASKINERING AS	HUSNE S	helge@reins.no	28510 Overflatebehandling av metaller, 28740 Prod. av bolter
314	RESLINK AS	ÅLGÅR D	ole.kvernstuen@reslink.com	29240 Prod. av maskiner og utstyr til generell bruk ellers
315	RESSURS SORTERING OG GJENVINNING AS	STAVA NGER	aage@westco.no	37200 Gjenvinning av ikke- metallholdig avfall og skrap

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
316	REXSTAR SEAFOOD AS	BEKKJ ARVIK	rex.star@sjotroll.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
317				
318	RØDNE TRAFIKK AS	SJERN ARØY	lars@rodne.no	61104 Innenlandske kyststruter
319	ROFI INDUSTRIER AS	MOLDE	berner.olsen@rofi.com	17409 Prod. av andre tekstilvarer, unntatt klær
320	ROGALAND INDUSTRI AUTOMASJON AS	STAVA NGER	agu@ria.no	31200 Prod. av elektriske fordelings- og kontrolltavler og p
321	ROGALAND MASKINSERVICE AS	BRYNE	svein@rogaland.mask.no	29520 Prod. av maskiner og utstyr til bergverksdrift og bygg
322	RØR- OG STÅLMONTERING AS	BLOMS TERDA LEN	torejorn@rosm.no	27220 Prod. av andre rør og rørdeler av jern og stål
323	ROXAR AS	STAVA NGER	aadne.groedem@roxar.com	33200 Prod. av måle-/kontrollinstr./-utstyr, unntatt ind. pr
324	RUBB MOTOR AS	RUBBE STADN ESET	rubbmoto@online.no	28110 Prod. av metallkonstruksjoner og deler
325	RUFA TRADING AS	HAFRS FJORD	rune@rufa-trading.no	45442 Glassarbeid, 26110 Prod. av planglass
326	RUSH MASKINERINGSENTER AS	JØRPE LAND	kenneth@rush.no	28510 Overflatebehandling av metaller
327	Sabb Motor A/S	BERGE N	arne.alrek@sabb.no	29111 Prod. av skipsmotorer
328	SÆTHRE STENINDUSTRI AS	BERGE N	firma@saethre-sten.no	26700 Hogging og bearbeiding av monument- og bygningsstein
329	SAGA BOATS AS	SELJE	adr@sagaboats.no	35120 Bygging og reparasjon av fritidsbåter
330	SALMON STAR AS	TORAN GSVÅG	sveinmartin@enter.vg	61103 Innenriks sjøtransport
331	SALMOPET AS	SKIFTU N	jarle@salmopet.no	15411 Prod. av fiskeoljer og fett
332	SALTHAMMER TRESFJORD AS	TRESF JORD	arne@xi.no	28110 Prod. av metallkonstruksjoner og deler
333	SANCO SHIPPING AS	GJERD SVIKA	ivar@sanco.no	61101 Utenriks sjøfart
334	SANDEID CEMENT AS	SANDEI D	sigmund@sandeid-cement.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
335	SANDVIK AS	STAVA NGER	kjl@norfolier.no	22110 Forlegging av bøker
336	SANDVIK PRODUKSJON AS	NESTT UN	olav.solberg@s-p.no	25220 Prod. av plastemballasje
337	SAUDA MONTERINGSLAG AS	SAUDA SJØEN	dpj@sauda-monteringslag.no	28110 Prod. av metallkonstruksjoner og deler

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
338	SCANDINAVIA METALL AS	STORD	geide@scanmet.no	37100 Gjenvinning av metallholdig avfall og skrap
339	SEA EAGLE AS	HERDL A	endre@seaeagle.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
340	SEILMAKER IVERSEN AS	FREKH AUG	tore@seilmakeren.no	17409 Prod. av andre tekstilvarer, unntatt klær
341	SELJE INDUSTRI PARTNER AS	SELJE	audun@sotra.net	28110 Prod. av metallkonstruksjoner og deler
342	SENTERTRYKK AS	BERGE N	vegard@sentertrykk.no	22220 Trykking ellers
343	SERVOGEAR AS	RUBBE STADN ESET	magne.moklebust@servogear.no	28750 Prod. av metallvarer ellers
344	SHIPMAN AS	TORAN GSVÅG	per-vidar@shipman.no	61101 Utenriks sjøfart
345	SIGURD FOLLAND AS	AVERØ Y	sigfoll@online.no	15201 Prod. av salt-, tørr- og klippfisk
346	SIGURD HOMSTVEDT AS	BERGE N	kav@panoramagruppen.no	36220 Prod. av smykker og varer av edle met., edel- og halve
347	SIGURD JOHANSSON AS	NESTT UN	sigurd@sijo.no	28110 Prod. av metallkonstruksjoner og deler
348	SILFAS MOLDTUSTRANDA AS	BERGE N	sildelaget@sildelaget.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
349	SIMEX BERGEN AS	LAKSE VÅG	pj@simexbergen.no	29230 Prod. av kjøle- og ventilasjonsanl., unnt. til hushold
350	SIMRAD MARINE AS	LAKSE VÅG	jan-hugo.schnelle@simrad.com	33200 Prod. av måle-/kontrollinstr./-utstyr, unntatt ind. pr
351	SINUS ELEKTRO AS	ÅLGÅR D	firmapost@sinus-elektro.no	45310 Elektrisk installasjonsarbeid, 31200 Prod. av elektris
352	SIR FISH AS	SIREVÅ G	rbl@sirfish.no	15202 Frysing av fisk, fiskefileter, skalldyr og bløtdyr
353	SKARBØVIK MEKANISKE AS	ÅLESU ND	post@skarmek.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
354	SKIPS AS ALEXANDRA	AVERØ Y	ocras@online.no	61101 Utenriks sjøfart
355	SKJELBOSTAD SVEIS AS	MÅNDA LEN	geir@skjelbostad.no	28520 Bearbeiding av metaller
356	SKJØNDALS SLIP & MEK VERKSTED AS	LAKSE VÅG	vestgard@ssmv.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
357	SKUDE FRYSERI AS	SKUDE NESHA VN	post@skudefryseri.no	15202 Frysing av fisk, fiskefileter, skalldyr og bløtdyr
358	SLÅKE MØBELFABRIKK AS	HJELM ELAND	post@slaake.no	36110 Prod. av sittemøbler

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
359	SLETTA BÅTBYGGERI AS	MJOSU NDET	post@slettaverft.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
360	SNORRE SEAFOOD AS	RAUDE BERG	steven@snorreseafood.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
361	SOLBERG DEKK AS	MJØLK ERÅEN	oystein@solbergdekk.no	25120 Regummiering og vulkanisering av gummidekk, 50302 Deta
362	SOLHJELL AS	MOLDE	inger.siri.strand@solhjel.no	18210 Prod. av arbeidstøy
363	SOLVANG ASA	STAVA NGER	magne.morken@solvangshi p.no	61101 Utenriks sjøfart
364	SONSUB AS	RANDA BERG	oyvind.lund@sonsub.saipem .eni.it	11200 Tjenester tilkn. olje- og gassutvinning
365	SOTRA CONTRACTING AS	ÅGOTN ES	jarle@sotra.net	28110 Prod. av metallkonstruksjoner og deler
366	SOTRANOT AS	KNARR EVIK	mail@sotranot.no	17520 Prod. av tauverk og nett
367	SPECIALISED PETROLEUM SERVICES INTE	TANAN GER	t.herigstad@spsinternational .com	11200 Tjenester tilkn. olje- og gassutvinning
368	SPERRE SVEIS AS	SØVIK	brynje.vethe@sperre.no	28110 Prod. av metallkonstruksjoner og deler
369	STAVA MEKANISKE VERKSTED AS	VEDAV ÅGEN	arne@stavamek.no	35113 Bygging og reparasjon av båter under 100 br.tonn
370	STEINSVIK AS	FØRRE SFJOR DEN	bjorn.apeland@steinsvik.no	28520 Bearbeiding av metaller
371	STERLING AS	FØRRE SFJOR DEN	ijo@assterling.no	36120 Prod. av andre møbler for kontor og butikk
372	STJERNEMADRASSEN AS	STRAU MGJER DE	olebastianemdal@stjernema drassen.no	36140 Prod. av møbler ellers, 36150 Prod. av madrasser
373	STORD MASKIN INDUSTRI AS	STORD	svanberg@stordoffshore.no	28520 Bearbeiding av metaller
374	STORD RØR & SVEIS AS	SAGVÅ G	post@stordrs.no	28520 Bearbeiding av metaller, 74502 Utleie av arbeidskraft
375	STORESUND MARINE SERVICES AS	TORVA STAD	post@smarine.no	35112 Innrednings- og install.arbeid utført på skip over 100
376	STØRKSEN RUSTFRI INDUSTRI AS	GODVI K	jakob@storksen.no	28110 Prod. av metallkonstruksjoner og deler
377	STRA-KO-FA AS	STRAN DA	froystein@takofa.no	18210 Prod. av arbeidstøy
378	STRANDA MOTORVERKSTED AS	AVERØ Y	klaus@stranda.net	29240 Prod. av maskiner og utstyr til generell bruk ellers

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
379	STRØMME MEK AS	STRAU ME	hka@stromme-mek.no	28110 Prod. av metallkonstruksjoner og deler
380	STRYN BETONGELEMENT AS	LOEN	post@strynbetongelement.no	26610 Prod. av betongvarer for bygge- og anleggsvirksomhet
381	SULDAL TREVARE AS	SAND	brynjar@suldal-trevare.no	20302 Prod. av bygningsartikler
382	SULZER PUMPS NORWAY AS	SANDN ES	helge.hovland@sulzer.com	29120 Prod. av pumper og kompressorer
383	SUNNFJORD BETONG AS	FØRDE	sunnfjord.betong@c2i.net	51539 Engroshandel med byggevarer ikke nevnt annet sted, 266
384	Sunnhordland Industri A/S	STORD	birte.nilsen@sunnind.no	85334 Arbeidstrening for ordinært arbeidsmarked, 28110 Prod.
385	SUNNHORDLAND SANDBLÅSING AS	STORD	kjell@sunnsand.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
386	SYLTEOSEN BETONGVAREFABRIKK AS	ELNES VÅGEN	ottar@enerbygg.no	26630 Prod. av ferdigblandet betong
387	T SNØRTELAND AS	SKUDE NESHA VN	tsnorteland@start.no	15110 Slakting, produksjon og konservering av kjøtt
388	TALISMAN PRODUCTION NORGE AS	STAVA NGER	espen.klizing@pgs.no	11100 Utvinning av råolje og naturgass
389	TAU MEK VERKSTED AS	TAU	egil@taumek.no	28110 Prod. av metallkonstruksjoner og deler
390	TB AUTOMASJON AS	SANDN ES	geir@tbautomasjon.no	35115 Innrednings- og install.arbeid utført på borerigger og
391	TEC CON AS	RANDA BERG	rune@teccon.no	31300 Prod. av isolert ledning og kabel
392	TECO MASKINERING AS	ÅLGÅR D	dagvidar@teco-maskinering.no	28520 Bearbeiding av metaller
393	THERMO BYGGVARME AS	BERGE N	folkestadaas@thermo-varme.no	31200 Prod. av elektriske fordelings- og kontrolltavler og p
394	TIDENS KRAV AS	KRISTI ANSUN D N	jan-erik.larsen@tidenskrav.no	22120 Forlegging av aviser
395	TONNING MØBELFABRIKK AS	STRYN	per@tonning.no	36140 Prod. av møbler ellers
396	TORKILDSEN THUNES & OLSEN TANNTEKNI	BERGE N	tannteknikk.lab@c2i.net	33100 Prod. av medisinsk og kirurgisk utstyr og ortopediske
397	TRALLNOR AS	BRYNE	odd.saerheim@trallnor.no	35500 Prod. av transportmidler ellers
398	TRANBERG AS	STAVA NGER	dag.kjosavik@tranberg.no	31200 Prod. av elektriske fordelings- og kontrolltavler og p
399	TRAPPEFABRIKKEN HELVIG & SKAARA AS	HELLVI K	svein@helvig-skaara.no	20302 Prod. av bygningsartikler
400	TRAPPETEKNIKK AS	STAVA NGER	rs@trappeteknikk.no	28120 Prod. av bygningsartikler av metall

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Firm number	Company name	Postal district	CEO/Managers e-mail address	Type of business
401	TRELASTEN AS	SANDV OLL	stein-olav@trelasten.no	20101 Saging og høvling av tre
402	TRITON BERGEN AS	LEPSØ Y	ole-triton@netcom.no	15209 Bearbeiding og konservering av fisk og fiskevarer elle
403	TYSSE MEK VERKSTED AS	TYSSE BOTNE N	bysheim@tysse.no	34200 Prod. av karosserier og tilhengere
404	UMOE KARMSUND AS	AVALD SNES	diane.ihle@umoe.no	28110 Prod. av metallkonstruksjoner og deler
405	UNIGRAFISK BLANKETT AS	FREKH AUG	kjetil.rossevold@unigrafisk.no	22220 Trykking ellers
406	VAAGLAND BÅTBYGGERI AS	VÅGLA ND	peder@vaagland.no	35111 Bygging og reparasjon av skip og skrog over 100 br.ton
407	VASSNES ELEKTRO SERVICE AS	ØLENS VÅG	helge.vassnes@vassnes.no	35115 Innrednings- og install.arbeid utført på borerigger og
408	VEIDHOLMEN FISK AS	SMØLA	veidfisk@online.no	15201 Prod. av salt-, tørr- og klippfisk
409	VELLO NORDIC AS	SKODJ E	knut@vello.com	26140 Prod. av glassfibrer
410	VEST METALLRETUR AS	TORVA STAD	janegil@vmras.no	37100 Gjenvinning av metallholdig avfall og skrap
411	VESTPAK AS	SANDN ES	bb@vestpak.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
412	VETCO GRAY AS	STAVA NGER	grethe.wanvik@vetco.com	11200 Tjenester tilkn. olje- og gassutvinning
413	VEXTRA AS	HAUGE SUND	vextra.as@sensewave.no	61103 Innenriks sjøtransport
414	VIGOR TJELDBERGODDEN AS	KJØRS VIKBU GEN	io@vigor.no	29240 Prod. av maskiner og utstyr til generell bruk ellers
415	VIK INDUSTRIER AS	VIK I SOGN	oih@vikindustrier.no	28110 Prod. av metallkonstruksjoner og deler
416	VOSS KJØTTINDUSTRI AS	VOSSE STRAN D	bjarte@voss-kjottindustri.no	15130 Prod. av kjøtt- og fjørfevarer
417	WEMA SYSTEM AS	LAKSE VÅG	oeg@wema.no	33200 Prod. av måle-/kontrollinstr./-utstyr, unntatt ind. pr
418	WEST MEKAN PRODUKSJON AS	NORDF JORDEI D	konrad@west-mekan.no	28750 Prod. av metallvarer ellers
419	WEST-LAMELL AS	SAND	lars@west-lamell.no	20302 Prod. av bygningsartikler
420	WOOD GROUP PRODUCTION TECHNOLOGY AS	STAVA NGER	petter.birkeland@jpknorge.com	11200 Tjenester tilkn. olje- og gassutvinning
421	ZENITH ELEKTRO AS	LANGE VÅG	stig.ola@zenithelektro.no	35112 Innrednings- og install.arbeid utført på skip over 100

Appendix 2: Survey participation invitation and reminder e-mails

Invitation mail sent out on Monday 16.01.2006:

Kjære beslutningstaker,

For noen uker siden sa du deg villig til å delta i et forskningsprosjekt om norske småbedrifter og internasjonalisering. Forskningen vil gi informasjon om bedriftenes internasjonale orientering og mulighetene internasjonalt og utføres i samarbeid med ESADE Business School i Barcelona og Innovasjon Norge.

Hver deltaker i prosjektet vil på forespørsel motta en rapport om forskningsresultatene og bli tilbudt muligheten til å motta en individualisert rapport om hvordan bedriften står i forhold til andre bedrifter.

Din deltakelse vil bidra med viktig informasjon til forskningsprosjektet. Å svare på spørreundersøkelsen tar ca. 10 minutter, og du vil komme til undersøkelsen ved å trykke på lenken nedenfor. Vennligst merk at spørreskjemaet finnes både på norsk og engelsk, og at språk velges på første side.

Alle svar er konfidensielle.

Som takk for samarbeidet kan du delta i et lotteri av en weekendtur for to til Barcelona.

Vi takker deg på forhånd for samarbeidet. Dersom du skulle ha spørsmål om undersøkelsen, vennligst kontakt meg på e-post oyvin.kyvik@esade.edu.

Vennlig hilsen,

Øyvin Kyvik

Forsker

ESADE Business School

<http://www.esade.es>

Forskningsprosjektet sponses av Kompass Norge AS

Translation to English:

Dear CEO/Manager;

Some weeks ago you accepted by telephone the invitation to participate in a research project concerning Norwegian Small Firms and Internationalization. The research should provide information about the international orientation and possibilities of Norwegian small firms and is done in collaboration between ESADE Business School in Barcelona and Innovation Norway.

Each participant in the research project will on request receive a report of the research results and be offered the possibility of receiving an individualized benchmarking-report.

Your participation will add valuable information to our research. Responding to the survey will take about 10 minutes and you'll get to the survey by clicking on the link below.

All responses are confidential.

As an appreciation of your cooperation you may participate in a lottery with a weekend trip for two to Barcelona as a prize.

We thank you in advance for your collaboration. If you have any questions please contact me by e-mail oyvin.kyvik@esade.edu.

Respectfully,

Øyvin Kyvik

Researcher

ESADE Business School

<http://www.esade.es>

The research project is sponsored by Kompass Norge AS

Reminder 1 and 2 (sent out Tuesday 24.01 and Tuesday 31.01.2006):

For noen dager siden mottok du en invitasjon til å delta i et forskningsprosjekt om norske småbedrifter og internasjonalisering.

Vi vil sette stor pris på å motta ditt svar på den utsendte spørreundersøkelsen.

Vi minner igjen om muligheten til å vinne en weekendtur for to til Barcelona.

Vi takker for ditt bidrag til forskningsprosjektet!

Med vennlig hilsen,

Øyvin Kyvik
Forsker
ESADE Business School
oyvin.kyvik@esade.edu
<http://www.esade.es>

Translation to English:

Some days ago you received an invitation to participate in a research project on Norwegian Small Firms and Internationalization.

We very much would appreciate your response to the questionnaire.

Again, we remind you about the possibility of winning a weekend trip for two to Barcelona.

We thank you for your contribution to the research project.

Respectfully,

Øyvin Kyvik
Researcher
ESADE Business School
<http://www.esade.es>

Reminder 3 (note change of wording) – sent out Monday 06.02.2006

For en tid siden mottok du en e-post med en påminnelse om å svare på et spørreskjema om internasjonalisering av norske småbedrifter.

Vi vet at du har en travel arbeidsdag, men minner om at å svare på spørreundersøkelsen kun tar 10 minutter. Vi setter stor pris på om du finner tid til å sende oss dine svar. Husk at vi er like interessert i ditt svar enten bedriften din konkurrerer internasjonalt eller ikke. Det er dine holdninger som beslutningstaker vi er interessert i. Din deltakelse vil bidra med viktig informasjon til forskningsprosjektet.

Du kommer til spørreskjemaet ved å trykke på lenken nedenfor. Vennligst merk at spørreskjemaet finnes både på norsk og engelsk, og at språk velges på første side.

Som takk for samarbeidet kan du delta i et lotteri av en weekendtur for to til Barcelona.

Med vennlig hilsen,

Øyvin Kyvik

Forsker

ESADE Business School

oyvin.kyvik@esade.edu

<http://www.esade.es>

Translation to English:

A while ago, you received an e-mail reminding you to respond to a questionnaire concerning Norwegian small firms and Internationalization.

We realize that you have a busy schedule, but remind you that responding to the questionnaire only takes 10 minutes. We certainly would appreciate very much if you should find time to send us your response. Keep in mind that we are just as interested in your response whether your firm are competing internationally or not. It is your attitudes as a decision-maker we are interested in. Your participation will contribute with important information to the research project.

You'll reach the questionnaire by using the link below. Please note that the questionnaire comes in both Norwegian and English and that you choose the language on the first page.

As an appreciation of your collaboration, we invite you to participate in lottery with a weekend trip for two to Barcelona as a prize.

Respectfully,

Øyvind Kyvik
Researcher
ESADE Business School
<http://www.esade.es>

Reminder 4 – final reminder - sent out Tuesday 14.02.2006

Dette er en siste appell om å fylle ut spørreskjemaet om norske småbedrifter og internasjonalisering. Din deltakelse er viktig fordi den bidrar med viktig informasjon til forskningsprosjektet.

Å svare på spørreundersøkelsen tar kun 10 minutter og du kommer til spørreskjemaet ved å trykke på lenken under.

Vi minner om siste mulighet til å vinne weekendturer for to til Barcelona og takker for ditt bidrag til forskningsprosjektet!

Med vennlig hilsen,

Øyvin Kyvik
Forsker
ESADE Business School
oyvin.kyvik@esade.edu
<http://www.esade.es>

Translation to English:

This is a final appeal to you to fill out a questionnaire concerning Norwegian small firms and internationalisation. Your response is important, as it will contribute with important information to the research project.

Responding to the questionnaire takes only 10 minutes and you'll reach the questionnaire by using the link below.

We remind you about this last opportunity of winning a weekend trip for two to Barcelona and thank you for your contribution to the research project!

Respectfully,

Øyvin Kyvik
Researcher
ESADE Business School
<http://www.esade.es>

Appendix 3: Questionnaire

The questionnaire in English and Norwegian versions:

Note: For technical reasons the questionnaire cannot be included as integral part of the document in the digital version of the thesis. However, if your personal computer is connected to the internet, the questionnaire can be accessed by using the following link (Control + Click)

<https://www.questionback.com/isa/qbv.dll/ShowQuest?Preview=True&QuestID=244302&sid=WbnQ0KI9uW>

Appendix 4: Descriptive statistics' graphics

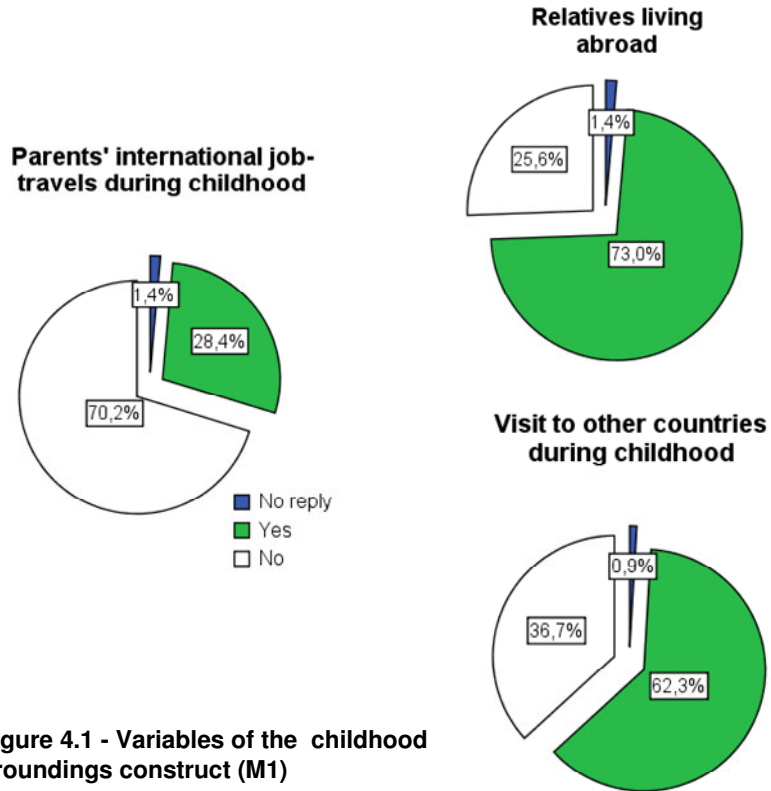


Figure 4.1 - Variables of the childhood groundings construct (M1)

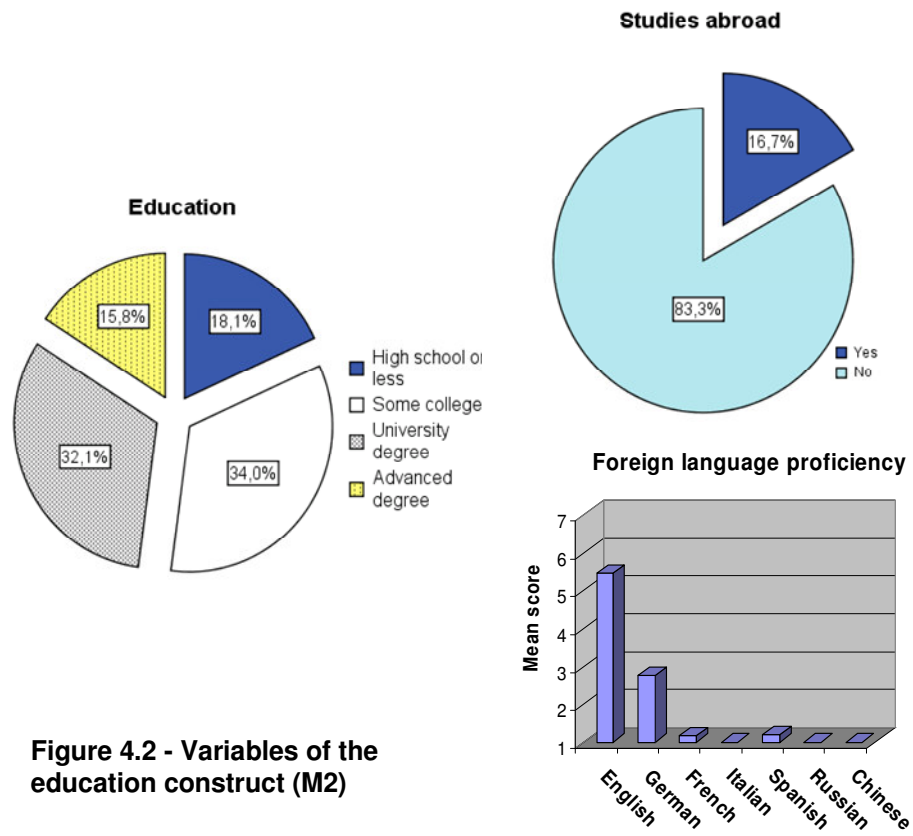


Figure 4.2 - Variables of the education construct (M2)

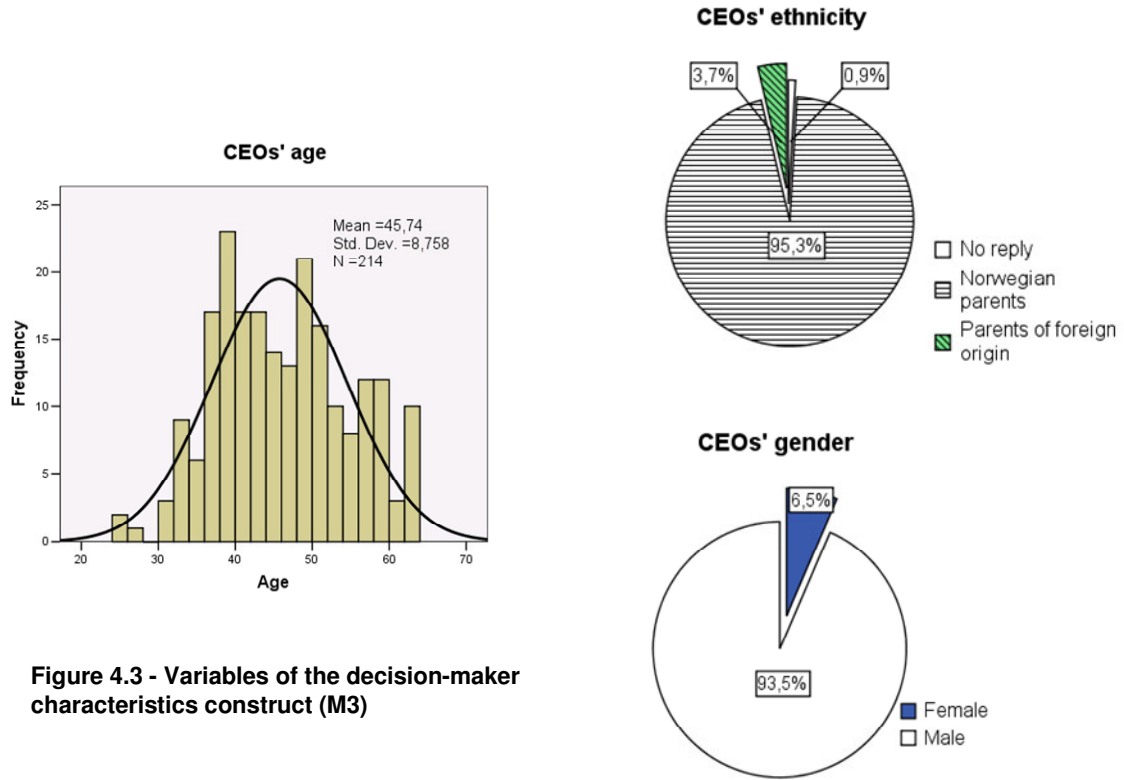


Figure 4.3 - Variables of the decision-maker characteristics construct (M3)

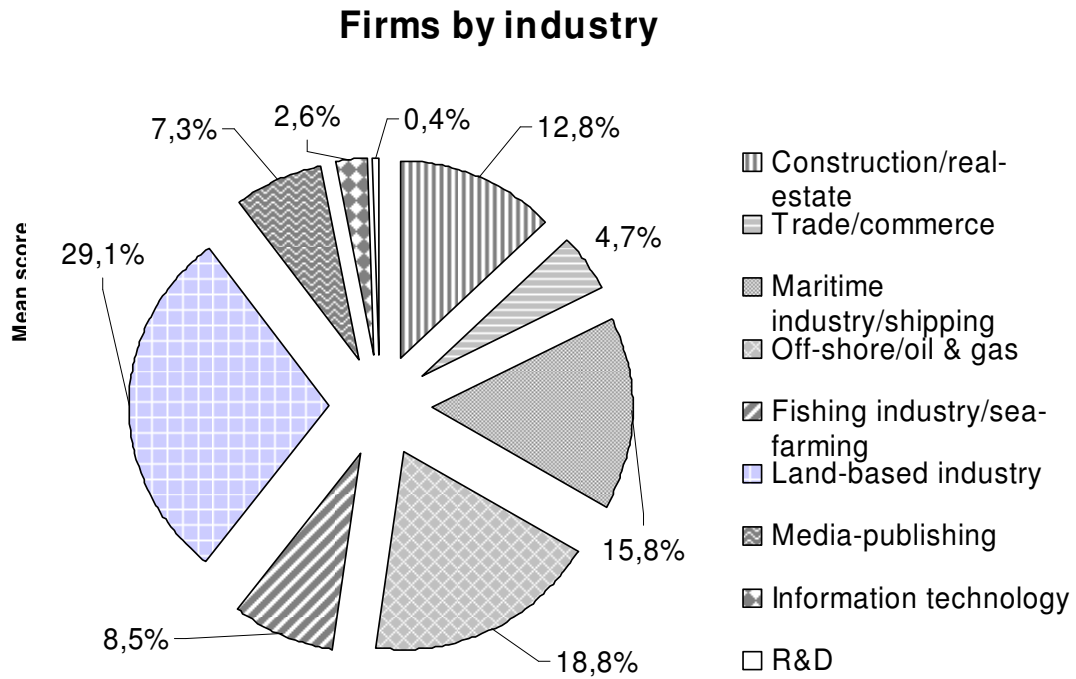


Figure 4.5-A, Variables of the firm- characteristics construct (M5)

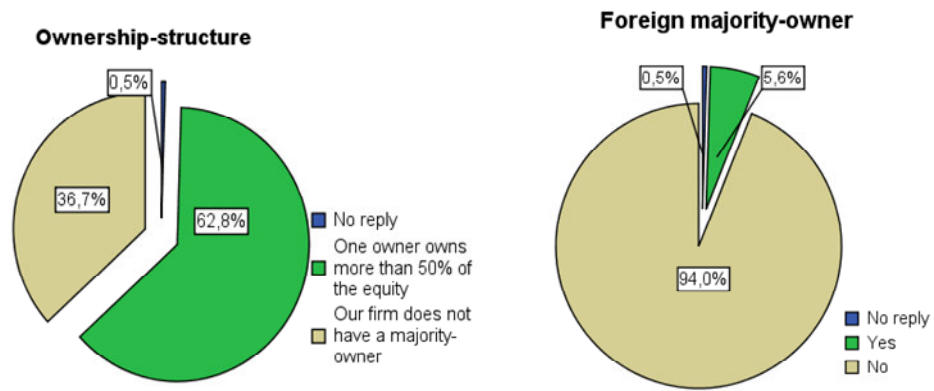


Figure 4.5-B, Variables of the firm- characteristics construct (M5)

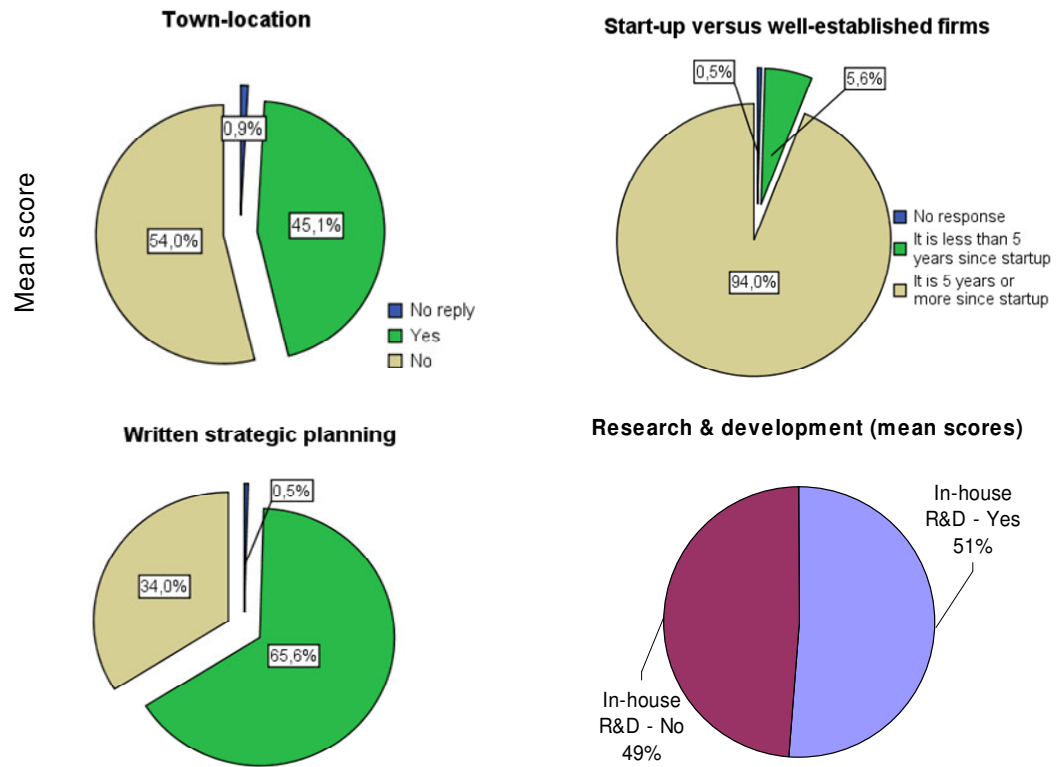


Figure 4.5-C, Variables of the firm- characteristics construct (M5)



Figure 4.7, Internationally active firms

Firm-effects of internationalization

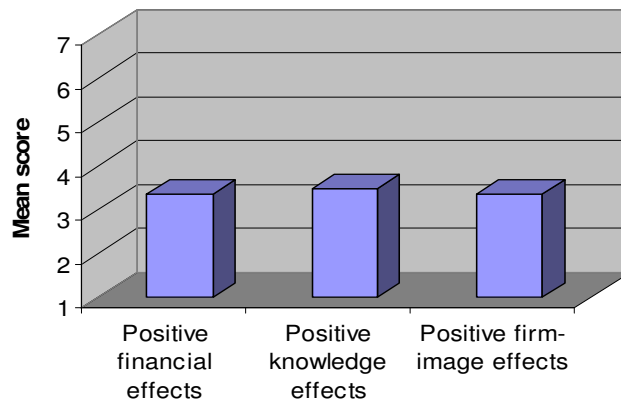


Figure 4.8, Variables indicating effects of firm-internationalization

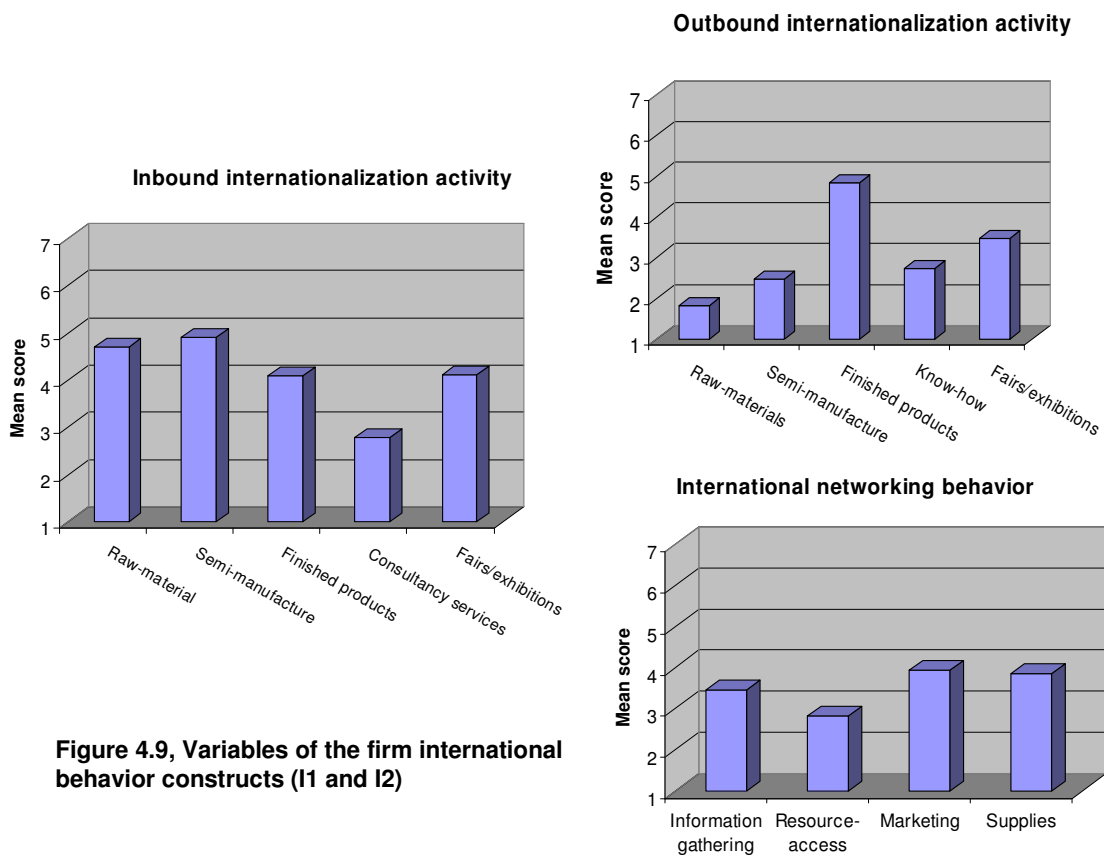
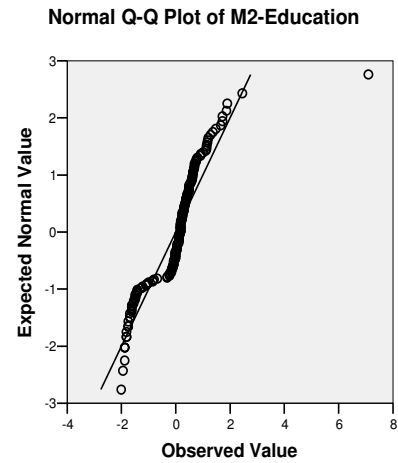
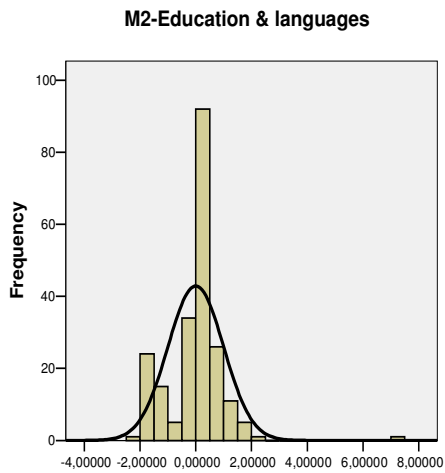
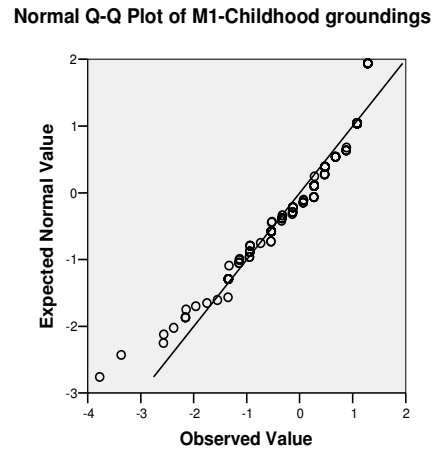
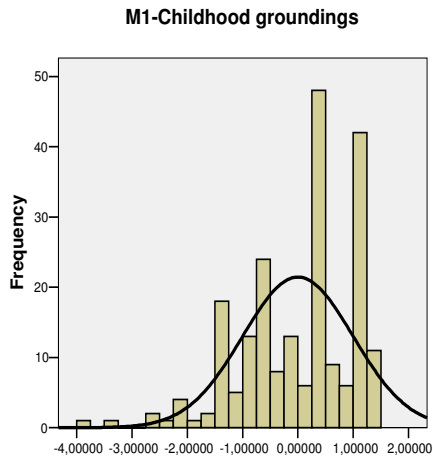


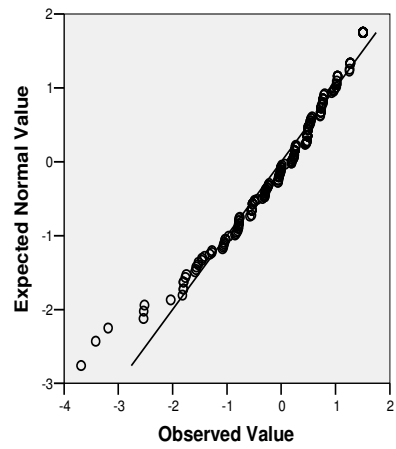
Figure 4.9, Variables of the firm international behavior constructs (I1 and I2)

Appendix 5: Data characteristics²⁷

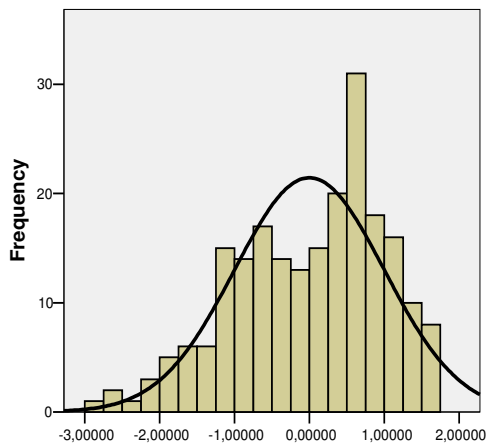


²⁷ Data are main constructs' (standardized) factor scores with a mean of 0 and a Standard deviation of 1.

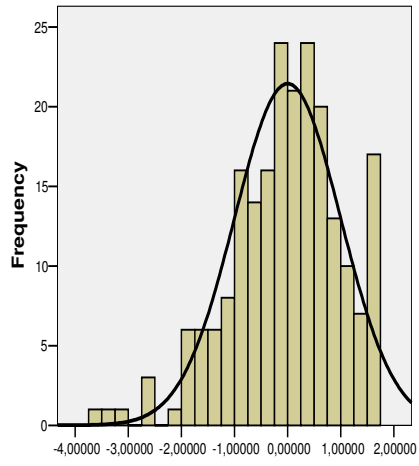
Normal Q-Q Plot of M3-Decision-maker characteristics



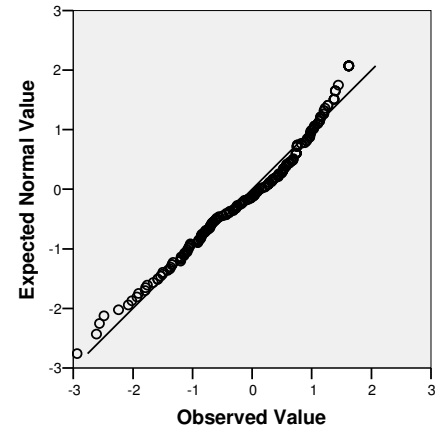
M4-Work experience



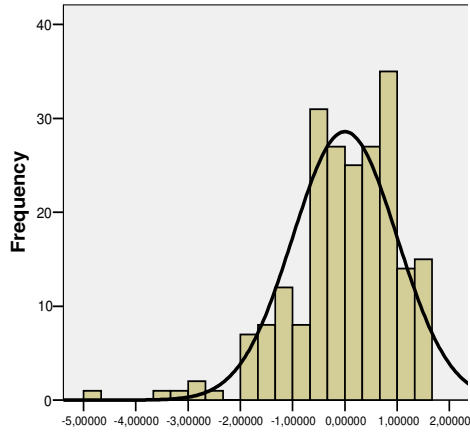
M3-Decision-maker characteristics



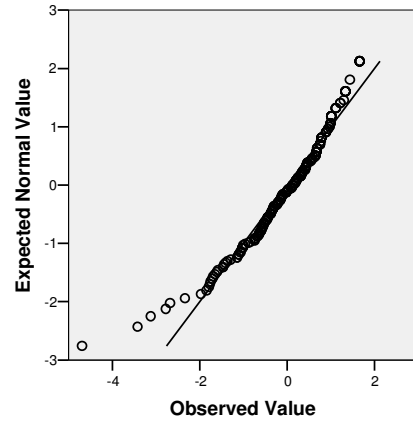
Normal Q-Q Plot of M4-Work experience



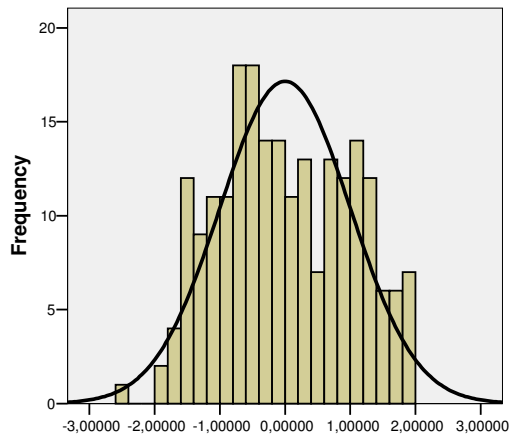
M7-A Domestic firm performance



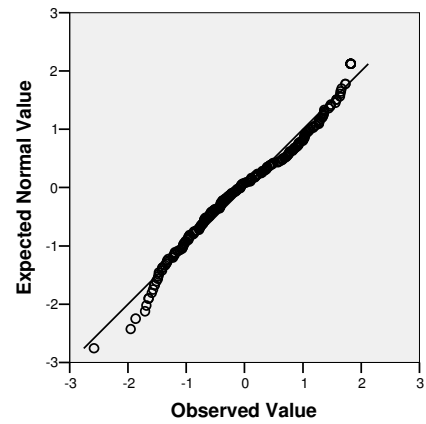
Normal Q-Q Plot of M7-A Domestic firm performance



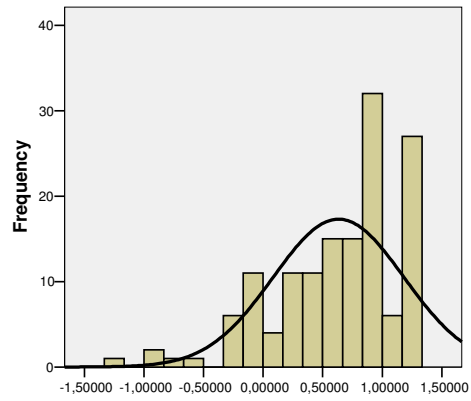
M6-Global orientation



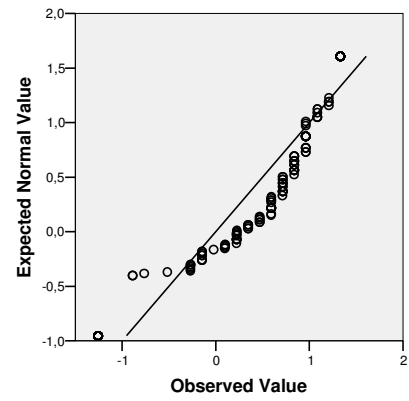
Normal Q-Q Plot of M6-Global orientation



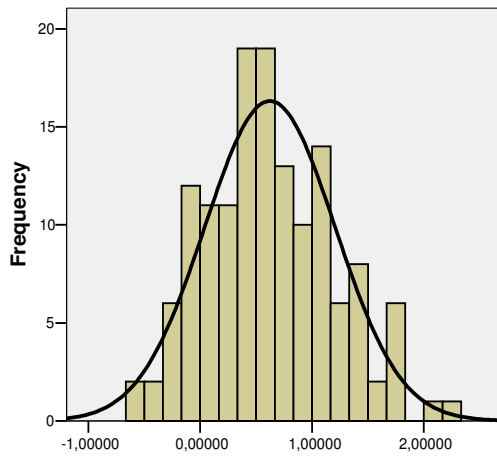
M7-B International firm-performance



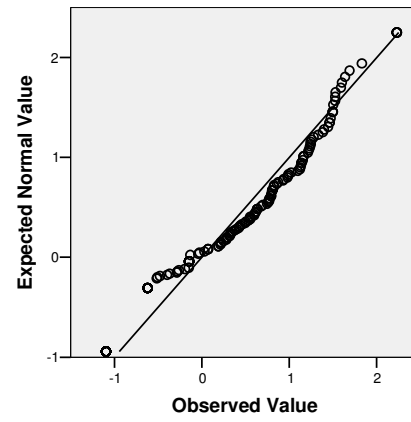
M7-B International firm performance



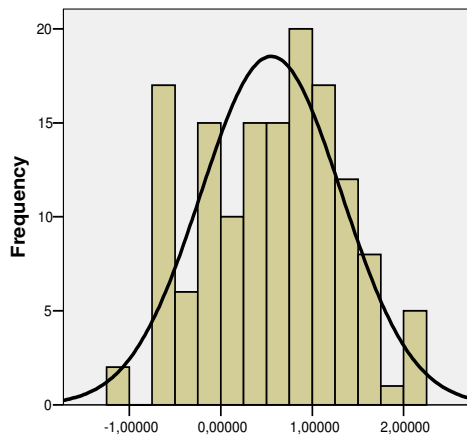
I1-Inward/outward international connections



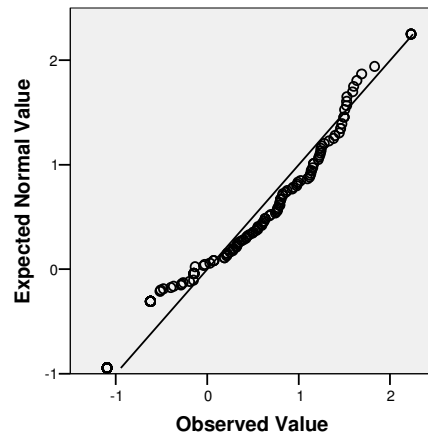
Normal Q-Q Plot of I2-International networking



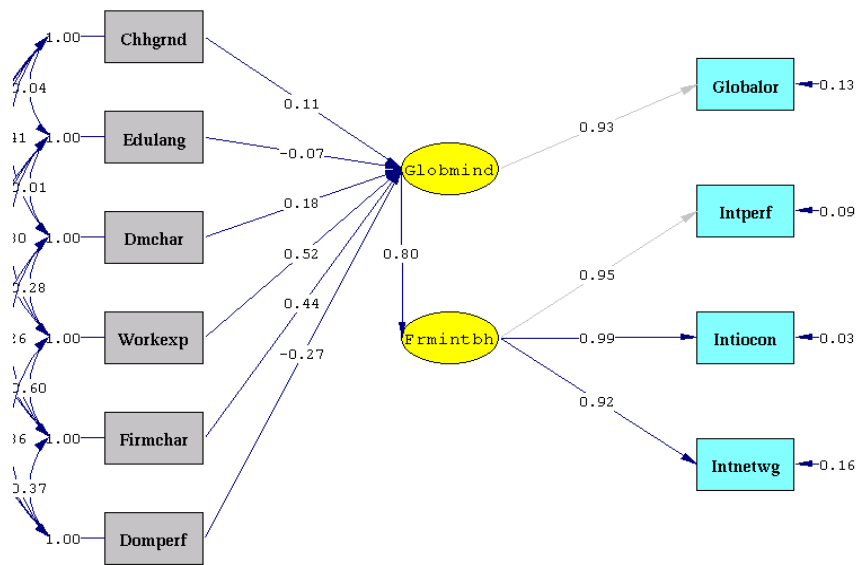
I2-International networking



Normal Q-Q Plot of I2-International networking



Appendix 6: LISREL-result of the conceptual Model A



Chi-Square=60.59, df=19, P-value=0.00000, RMSEA=0.101

DATE: 6/ 5/2006

TIME: 19:31

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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The following lines were read from file C:\Exceldata\ESADEExcel\Model A conceptual model.spj:

```
!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL
!MODEL A: Global Mindset and Firm Internationalization Behavior
!Simplis project file: Model A conceptual model.spj
!Note: The scale of measurement of the two latent variables automatically standardized by LISREL
!Input-data specified in form of correlation-matrix and Cronbach's alpha introduced in
!the diagonal of the matrix to correct for measurement errors
Observed Variables: Chhgrnd Edulang Dmchar Workexp Firmchar Globalor Domperf Intperf
Intiocon Intnetwg
Correlation Matrix
0.804
0.035 0.759
0.332 0.008 0.806
0.294 0.209 0.206 0.657
0.124 0.149 0.206 0.432 0.799
0.298 0.135 0.283 0.545 0.561 0.905
0.239 -0.027 0.409 0.217 0.243 0.162 0.551
0.225 0.149 0.143 0.490 0.445 0.693 0.114 0.972
0.242 0.174 0.128 0.490 0.474 0.657 0.106 0.893 0.924
0.190 0.125 0.132 0.493 0.516 0.662 0.134 0.827 0.847 0.943
Sample Size: 215
Latent Variables: Globmind Frmintbh
Relationships:
Globmind = Chhgrnd
Globmind = Edulang
Globmind = Dmchar
Globmind = Workexp
Globmind = Firmchar
Globmind = Domperf
Globalor = Globmind
Intperf = Frmintbh
Frmintbh = Globmind
Intnetwg = Frmintbh
Intiocon = Frmintbh
Options: ND = 3, RS, WP
```

LISREL Output: RS MI SS SC EF
 Path Diagram
 End of Problem

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Covariance Matrix

	Globalor	Intperf	Intiocon	Intnetwg	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.905									
Intperf	0.693	0.972								
Intiocon	0.657	0.893	0.924							
Intnetwg	0.662	0.827	0.847	0.943						
Chhgrnd	0.298	0.225	0.242	0.190	0.804					
EduLang	0.135	0.149	0.174	0.125	0.035	0.759				
Dmchar	0.283	0.143	0.128	0.132	0.332	0.008	0.806			
Workexp	0.545	0.490	0.490	0.493	0.294	0.209	0.206	0.657		
Firmchar	0.561	0.445	0.474	0.516	0.124	0.149	0.206	0.432	0.799	
Domperf	0.162	0.114	0.106	0.134	0.239	-0.027	0.409	0.217	0.243	0.551

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Parameter Specifications

LAMBDA-Y

	Globmind	Frmintbh
Globalor	0	0
Intperf	0	0
Intiocon	0	1
Intnetwg	0	2

BETA

	Globmind	Frmintbh
Globalor	0	0
Frmintbh	3	0

GAMMA

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globalor	4	5	6	7	8	9
Frmintbh	0	0	0	0	0	0

PHI

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Chhgrnd	10					
EduLang	11	12				

Dmchar	13	14	15			
Workexp	16	17	18	19		
Firmchar	20	21	22	23	24	
Domperf	25	26	27	28	29	30

PSI

Globmind	Frmintbh
-----	-----
31	32

THETA-EPS

Globalor	Intperf	Intiocon	Intnetwg
-----	-----	-----	-----
33	34	35	36

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Number of Iterations = 12

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	Globmind	Frmintbh
	-----	-----
Globalor	0.886	--
Intperf	--	0.940
Intiocon	--	0.948
		(0.025)
		38.516
Intnetwg	--	0.892
		(0.033)
		27.045

BETA

	Globmind	Frmintbh
	-----	-----
Globmind	--	--
Frmintbh	0.797	--
	(0.057)	
	13.869	

GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.127 (0.056)	-0.078 (0.052)	0.201 (0.062)	0.647 (0.074)	0.495 (0.062)	-0.362 (0.077)
	2.274	-1.512	3.243	8.765	8.042	-4.711
Frmintbh	--	--	--	--	--	--

Covariance Matrix of ETA and KSI

	Globmind	Frmintbh	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	1.000							
Frmintbh	0.797	1.000						
Chhgrnd	0.331	0.264	0.804					
Edulang	0.166	0.132	0.035	0.759				
Dmchar	0.290	0.231	0.332	0.008	0.806			
Workexp	0.623	0.496	0.294	0.209	0.206	0.657		
Firmchar	0.632	0.504	0.124	0.149	0.206	0.432	0.799	
Domperf	0.176	0.140	0.239	-0.027	0.409	0.217	0.243	0.551

PHI

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Chhgrnd	0.804 (0.078) 10.344					
Edulang	0.035 (0.053) 0.655	0.759 (0.073) 10.344				
Dmchar	0.332 (0.060) 5.577	0.008 (0.053) 0.150	0.806 (0.078) 10.344			
Workexp	0.294 (0.054) 5.486	0.209 (0.050) 4.152	0.206 (0.052) 3.985	0.657 (0.064) 10.344		
Firmchar	0.124 (0.055) 2.237	0.149 (0.054) 2.749	0.206 (0.057) 3.637	0.432 (0.058) 7.492	0.799 (0.077) 10.344	
Domperf	0.239 (0.048) 4.944	-0.027 (0.044) -0.610	0.409 (0.053) 7.652	0.217 (0.044) 4.963	0.243 (0.048) 5.031	0.551 (0.053) 10.344

PSI

Note: This matrix is diagonal.

Globmind Frmintbh

-----	-----
0.260	0.365
(0.048)	(0.048)
5.421	7.680

Squared Multiple Correlations for Structural Equations

-----	-----
Globmind	Frmintbh
-----	-----
0.740	0.635

Squared Multiple Correlations for Reduced Form

-----	-----
Globmind	Frmintbh
-----	-----
0.740	0.470

Reduced Form

	Chhgnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
-----	-----	-----	-----	-----	-----	-----
Globmind	0.127	-0.078	0.201	0.647	0.495	-0.362
	(0.056)	(0.052)	(0.062)	(0.074)	(0.062)	(0.077)
	2.274	-1.512	3.243	8.765	8.042	-4.711
Frmintbh	0.101	-0.062	0.160	0.515	0.394	-0.288
	(0.045)	(0.041)	(0.050)	(0.066)	(0.054)	(0.063)
	2.255	-1.506	3.188	7.832	7.304	-4.548

THETA-EPS

-----	-----	-----	-----
Globalor	Intperf	Intiocon	Intnetwg
-----	-----	-----	-----
0.119	0.088	0.024	0.148
(0.034)	(0.012)	(0.009)	(0.017)
3.488	7.178	2.691	8.964

Squared Multiple Correlations for Y - Variables

-----	-----	-----	-----
Globalor	Intperf	Intiocon	Intnetwg
-----	-----	-----	-----
0.868	0.910	0.974	0.843

Goodness of Fit Statistics

Degrees of Freedom = 19
Minimum Fit Function Chi-Square = 64.363 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 60.587 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 41.587
90 Percent Confidence Interval for NCP = (21.775 ; 69.009)

Minimum Fit Function Value = 0.301
Population Discrepancy Function Value (F0) = 0.194
90 Percent Confidence Interval for F0 = (0.102 ; 0.322)
Root Mean Square Error of Approximation (RMSEA) = 0.101
90 Percent Confidence Interval for RMSEA = (0.0732 ; 0.130)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00207

Expected Cross-Validation Index (ECVI) = 0.620
90 Percent Confidence Interval for ECVI = (0.527 ; 0.748)
ECVI for Saturated Model = 0.514
ECVI for Independence Model = 9.644

Chi-Square for Independence Model with 45 Degrees of Freedom = 2043.840
Independence AIC = 2063.840
Model AIC = 132.587
Saturated AIC = 110.000
Independence CAIC = 2107.546
Model CAIC = 289.930
Saturated CAIC = 350.385

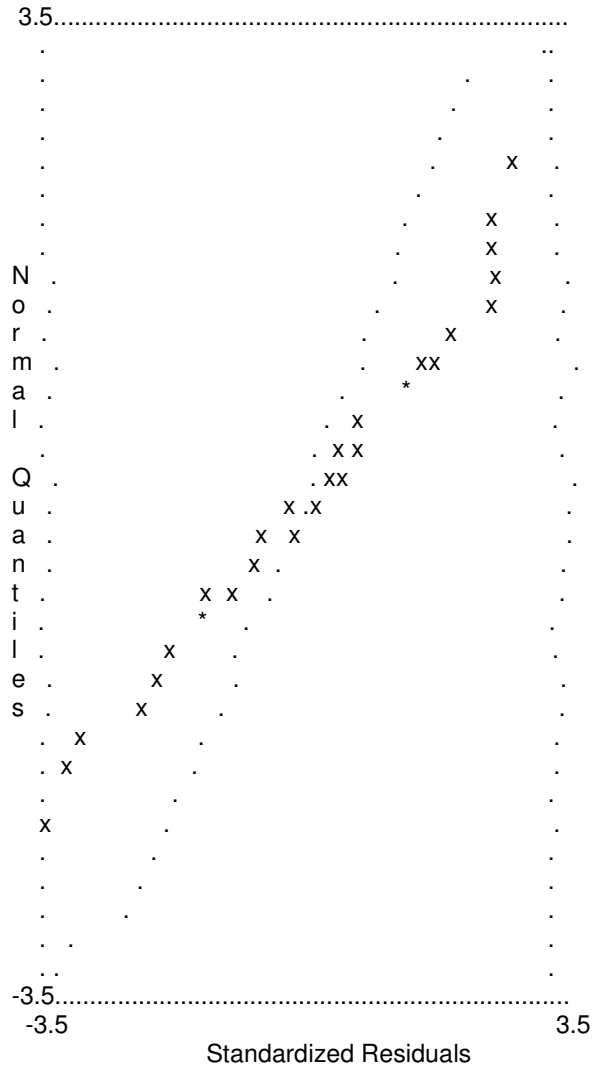
Normed Fit Index (NFI) = 0.969
Non-Normed Fit Index (NNFI) = 0.946
Parsimony Normed Fit Index (PNFI) = 0.409
Comparative Fit Index (CFI) = 0.977
Incremental Fit Index (IFI) = 0.978
Relative Fit Index (RFI) = 0.925

Critical N (CN) = 121.331

Root Mean Square Residual (RMR) = 0.0263
Standardized RMR = 0.0307
Goodness of Fit Index (GFI) = 0.946
Adjusted Goodness of Fit Index (AGFI) = 0.845
Parsimony Goodness of Fit Index (PGFI) = 0.327

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Qplot of Standardized Residuals



!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Modification Indices and Expected Change

Modification Indices for LAMBDA-Y

	Globmind	Frmintbh
Globalor	--	--
Intperf	2.345	--
Intiocon	10.621	--
Intnetwg	6.578	--

Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.071	-0.138	0.139	--

Standardized Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.071	-0.138	0.139	--

Completely Standardized Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.072	-0.143	0.143	--

No Non-Zero Modification Indices for BETA

Modification Indices for GAMMA

	Chhgnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalmind	--	--	--	--	--	--
Frmintbh	0.274	1.722	8.477	3.296	0.004	0.689

Expected Change for GAMMA

	Chhgnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalmind	--	--	--	--	--	--
Frmintbh	-0.031	0.073	-0.166	0.236	-0.006	-0.055

Standardized Expected Change for GAMMA

	Chhgnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalmind	--	--	--	--	--	--
Frmintbh	-0.027	0.064	-0.149	0.191	-0.005	-0.041

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for PSI

Modification Indices for THETA-EPS

Globalor	Intperf	Intiocon	Intnetwg
----------	---------	----------	----------

	-----	-----	-----	-----
Globalor	--			
Intperf	16.365	--		
Intiocon	15.448	6.578	--	
Intnetwg	0.315	10.621	2.345	--

Expected Change for THETA-EPS

	-----	-----	-----	-----
Globalor	--			
Intperf	0.048	--		
Intiocon	-0.041	0.064	--	
Intnetwg	0.008	-0.056	0.029	--

Completely Standardized Expected Change for THETA-EPS

	-----	-----	-----	-----
Globalor	--			
Intperf	0.051	--		
Intiocon	-0.045	0.067	--	
Intnetwg	0.009	-0.058	0.031	--

Modification Indices for THETA-DELTA-EPS

	-----	-----	-----	-----
Globalor	--			
Intperf	0.051	--		
Intiocon	-0.045	0.067	--	
Intnetwg	0.009	-0.058	0.031	--
Chhgrnd	0.007	3.187	7.264	3.391
EduLang	0.978	0.189	4.043	3.774
Dmchar	8.342	0.000	0.933	0.098
Workexp	1.300	0.099	0.001	1.066
Firmchar	0.249	14.202	2.211	5.499
Domperf	0.845	1.700	1.316	0.420

Expected Change for THETA-DELTA-EPS

	-----	-----	-----	-----
Globalor	--			
Intperf	0.051	--		
Intiocon	-0.045	0.067	--	
Intnetwg	0.009	-0.058	0.031	--
Chhgrnd	-0.003	-0.030	0.038	-0.038
EduLang	-0.043	-0.008	0.031	-0.044
Dmchar	0.105	0.000	-0.012	-0.006
Workexp	-0.038	-0.003	0.000	0.014
Firmchar	0.020	-0.051	0.017	0.039
Domperf	-0.027	0.015	-0.011	0.009

Completely Standardized Expected Change for THETA-DELTA-EPS

	-----	-----	-----	-----
Globalor	--			
Intperf	0.051	--		
Intiocon	-0.045	0.067	--	
Intnetwg	0.009	-0.058	0.031	--
Chhgrnd	-0.004	-0.034	0.044	-0.044
EduLang	-0.052	-0.009	0.037	-0.052
Dmchar	0.123	0.000	-0.014	-0.007
Workexp	-0.050	-0.004	0.000	0.018
Firmchar	0.023	-0.058	0.020	0.045
Domperf	-0.039	0.021	-0.016	0.013

Maximum Modification Index is 16.37 for Element (2, 1) of THETA-EPS

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Standardized Solution

LAMBDA-Y

	Globmind	Frmintbh
Globalor	0.886	--
Intperf	--	0.940
Intiocon	--	0.948
Intnetwg	--	0.892

BETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.797	--

GAMMA

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.114	-0.068	0.180	0.524	0.442	-0.269
Frmintbh	--	--	--	--	--	--

Correlation Matrix of ETA and KSI

	Globmind	Frmintbh	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globmind	1.000							
Frmintbh	0.797	1.000						
Chhgrnd	0.369	0.294	1.000					
EduLang	0.190	0.151	0.045	1.000				
Dmchar	0.323	0.258	0.412	0.010	1.000			
Workexp	0.768	0.612	0.405	0.296	0.283	1.000		
Firmchar	0.708	0.564	0.155	0.191	0.257	0.596	1.000	
Domperf	0.237	0.189	0.359	-0.042	0.614	0.361	0.366	1.000

PSI

Note: This matrix is diagonal.

	Globmind	Frmintbh
	0.260	0.365

Regression Matrix ETA on X (Standardized)

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.114	-0.068	0.180	0.524	0.442	-0.269
Frmintbh	0.091	-0.054	0.143	0.418	0.353	-0.214

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Completely Standardized Solution

LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg
Globalor	0.932	--		
Intperf	--	0.954		
Intiocon	--		0.987	
Intnetwg	--			0.918

BETA

	Globalor	Intperf	Intiocon	Intnetwg
Globalor	--	--		
Intperf		--		
Intiocon			--	
Intnetwg				--

GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.114	-0.068	0.180	0.524	0.442	-0.269
Intperf	--	--	--	--	--	--
Intiocon	--	--	--	--	--	--
Intnetwg	--	--	--	--	--	--

Correlation Matrix of ETA and KSI

	Globalor	Intperf	Intiocon	Intnetwg	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	1.000									
Intperf	0.797	1.000								
Intiocon	0.369	0.294	1.000							
Intnetwg	0.190	0.151	0.045	1.000						
Chhgrnd	0.323	0.258	0.412	0.010	1.000					
Edulang	0.768	0.612	0.405	0.296	0.283	1.000				
Dmchar	0.708	0.564	0.155	0.191	0.257	0.596	1.000			
Workexp	0.237	0.189	0.359	-0.042	0.614	0.361	0.366	1.000		
Firmchar									1.000	
Domperf										1.000

PSI

Note: This matrix is diagonal.

	Globalor	Intperf	Intiocon	Intnetwg
Globalor	0.260			
Intperf		0.365		
Intiocon			1.000	
Intnetwg				1.000

THETA-EPS

	Globalor	Intperf	Intiocon	Intnetwg
Globalor	0.132	0.090	0.026	0.157
Intperf				
Intiocon				
Intnetwg				

Regression Matrix ETA on X (Standardized)

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.114	-0.068	0.180	0.524	0.442	-0.269
Intperf	--	--	--	--	--	--
Intiocon	--	--	--	--	--	--
Intnetwg	--	--	--	--	--	--

Frmintbh 0.091 -0.054 0.143 0.418 0.353 -0.214

IGLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Total and Indirect Effects

Total Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.127 (0.056) 2.274	-0.078 (0.052) -1.512	0.201 (0.062) 3.243	0.647 (0.074) 8.765	0.495 (0.062) 8.042	-0.362 (0.077) -4.711
Frmintbh	0.101 (0.045) 2.255	-0.062 (0.041) -1.506	0.160 (0.050) 3.188	0.515 (0.066) 7.832	0.394 (0.054) 7.304	-0.288 (0.063) -4.548

Indirect Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	--	--	--	--	--	--
Frmintbh	0.101 (0.045) 2.255	-0.062 (0.041) -1.506	0.160 (0.050) 3.188	0.515 (0.066) 7.832	0.394 (0.054) 7.304	-0.288 (0.063) -4.548

Total Effects of ETA on ETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.797 (0.057) 13.869	--

Largest Eigenvalue of B*B' (Stability Index) is 0.635

Total Effects of ETA on Y

	Globmind	Frmintbh
Globalor	0.886	--
Intperf	0.749 (0.054) 13.869	0.940
Intiocon	0.756 (0.052) 14.396	0.948 (0.025) 38.516

Intnetwg 0.710 0.892
 (0.053) (0.033)
 13.356 27.045

Indirect Effects of ETA on Y

	Globmind	Frmintbh
	-----	-----
Globalor	--	--
Intperf	0.749	--
	(0.054)	
	13.869	
Intiocon	0.756	--
	(0.052)	
	14.396	
Intnetwg	0.710	--
	(0.053)	
	13.356	

Total Effects of X on Y

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globalor	0.113	-0.069	0.178	0.573	0.439	-0.321
	(0.050)	(0.046)	(0.055)	(0.065)	(0.055)	(0.068)
	2.274	-1.512	3.243	8.765	8.042	-4.711
Intperf	0.095	-0.058	0.150	0.485	0.371	-0.271
	(0.042)	(0.039)	(0.047)	(0.062)	(0.051)	(0.060)
	2.255	-1.506	3.188	7.832	7.304	-4.548
Intiocon	0.096	-0.059	0.152	0.489	0.374	-0.274
	(0.043)	(0.039)	(0.047)	(0.062)	(0.051)	(0.060)
	2.257	-1.507	3.194	7.924	7.378	-4.566
Intnetwg	0.090	-0.055	0.142	0.460	0.352	-0.257
	(0.040)	(0.037)	(0.045)	(0.059)	(0.049)	(0.057)
	2.253	-1.506	3.181	7.736	7.226	-4.529

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Standardized Total and Indirect Effects

Standardized Total Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globmind	0.114	-0.068	0.180	0.524	0.442	-0.269
Frmintbh	0.091	-0.054	0.143	0.418	0.353	-0.214

Standardized Indirect Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	--	--	--	--	--	--
Frmintbh	0.091	-0.054	0.143	0.418	0.353	-0.214

Standardized Total Effects of ETA on ETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.797	--

Standardized Total Effects of ETA on Y

	Globmind	Frmintbh
Globalor	0.886	--
Intperf	0.749	0.940
Intiocon	0.756	0.948
Intnetwg	0.710	0.892

Completely Standardized Total Effects of ETA on Y

	Globmind	Frmintbh
Globalor	0.932	--
Intperf	0.760	0.954
Intiocon	0.786	0.987
Intnetwg	0.732	0.918

Standardized Indirect Effects of ETA on Y

	Globmind	Frmintbh
Globalor	--	--
Intperf	0.749	--
Intiocon	0.756	--
Intnetwg	0.710	--

Completely Standardized Indirect Effects of ETA on Y

	Globmind	Frmintbh
Globalor	--	--
Intperf	0.760	--
Intiocon	0.786	--
Intnetwg	0.732	--

Standardized Total Effects of X on Y

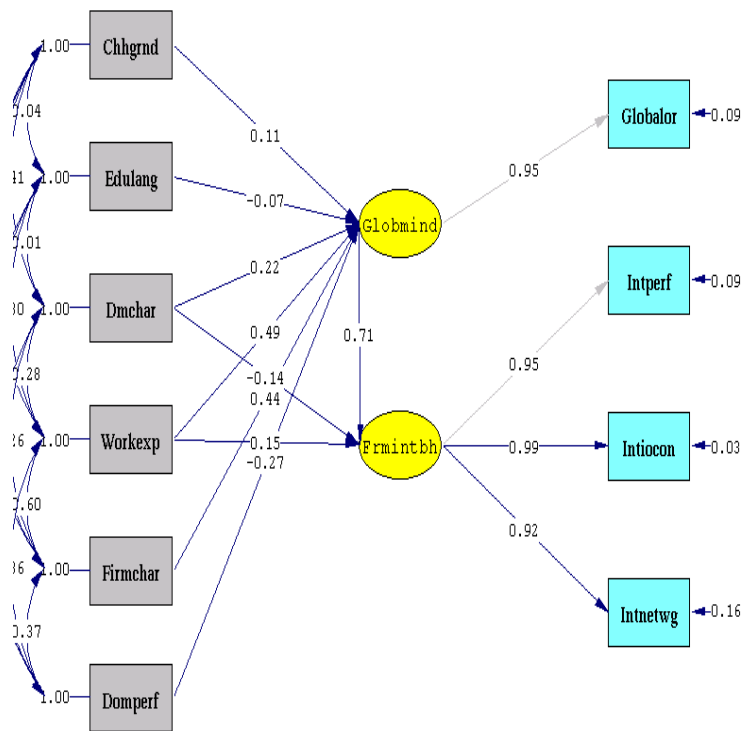
	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.101	-0.060	0.160	0.465	0.392	-0.238
Intperf	0.085	-0.051	0.135	0.393	0.332	-0.201
Intiocon	0.086	-0.051	0.136	0.396	0.334	-0.203
Intnetwg	0.081	-0.048	0.128	0.373	0.314	-0.191

Completely Standardized Total Effects of X on Y

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.106	-0.063	0.168	0.489	0.412	-0.250
Intperf	0.087	-0.052	0.137	0.399	0.336	-0.204
Intiocon	0.090	-0.053	0.142	0.412	0.348	-0.211
Intnetwg	0.083	-0.050	0.132	0.384	0.324	-0.197

Time used: 0.210 Seconds

Appendix 7: LISREL-result of the final Model B



Chi-Square=50.19, df=17, P-value=0.00004, RMSEA=0.096

DATE: 5/12/2006
TIME: 12:51

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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The following lines were read from file C:\Exceldata\ESADEExcel\Model C - Final Model.spj:

```
!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL
!MODEL C: FINAL MODEL: Global Mindset and Firm Internationalization Behavior
!Simplis project file: Model C-Final Model.spj
!Note: The scale of measurement of the two latent variables automatically standardized by
LISREL
!Input-data specified in form of correlation-matrix and Cronbach's alpha introduced in
!the diagonal of the matrix to correct for measurement errors
Observed Variables: Chhgrnd Edulang Dmchar Workexp Firmchar Globalor Domperf Intperf
Intiocon Intnetwg
Correlation Matrix
0.804
0.035 0.759
0.332 0.008 0.806
0.294 0.209 0.206 0.657
0.124 0.149 0.206 0.432 0.799
0.298 0.135 0.283 0.545 0.561 0.905
0.239 -0.027 0.409 0.217 0.243 0.162 0.551
0.225 0.149 0.143 0.490 0.445 0.693 0.114 0.972
0.242 0.174 0.128 0.490 0.474 0.657 0.106 0.893 0.924
0.190 0.125 0.132 0.493 0.516 0.662 0.134 0.827 0.847 0.943
Sample Size: 215
Latent Variables: Globmind Frmintbh
Relationships:
Globmind = Chhgrnd
Globmind = Edulang
Globmind = Dmchar
Globmind = Workexp
Globmind = Firmchar
Globmind = Domperf
Globalor = Globmind
Intperf = Frmintbh
Frmintbh = Globmind
Intnetwg = Frmintbh
Intiocon = Frmintbh
Frmintbh = Dmchar
Frmintbh = Workexp
```

Options: ND = 3, RS, WP
 LISREL Output: RS MI SS SC EF
 Path Diagram
 End of Problem

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Covariance Matrix

	Globalor	Intperf	Intiocon	Intnetwg	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	0.905									
Intperf	0.693	0.972								
Intiocon	0.657	0.893	0.924							
Intnetwg	0.662	0.827	0.847	0.943						
Chhgrnd	0.298	0.225	0.242	0.190	0.804					
Edulang	0.135	0.149	0.174	0.125	0.035	0.759				
Dmchar	0.283	0.143	0.128	0.132	0.332	0.008	0.806			
Workexp	0.545	0.490	0.490	0.493	0.294	0.209	0.206	0.657		
Firmchar	0.561	0.445	0.474	0.516	0.124	0.149	0.206	0.432	0.799	
Domperf	0.162	0.114	0.106	0.134	0.239	-0.027	0.409	0.217	0.243	0.551

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Parameter Specifications

LAMBDA-Y

	Globmind	Frmintbh
Globalor	0	0
Intperf	0	0
Intiocon	0	1
Intnetwg	0	2

BETA

	Globmind	Frmintbh
Globmind	0	0
Frmintbh	3	0

GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	4	5	6	7	8	9
Frmintbh	0	0	10	11	0	0

PHI

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Chhgrnd	12					
Edulang	13	14				
Dmchar	15	16	17			
Workexp	18	19	20	21		
Firmchar	22	23	24	25	26	
Domperf	27	28	29	30	31	32

PSI

Globmind	Frmintbh
33	34

THETA-EPS

Globalor	Intperf	Intiocon	Intnetwg
35	36	37	38

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Number of Iterations = 37

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	Globmind	Frmintbh
Globalor	0.907	--
Intperf	--	0.941
Intiocon	--	0.948 (0.025) 38.549
Intnetwg	--	0.892 (0.033) 27.089

BETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.714 (0.123) 5.823	--

GAMMA

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.126 (0.056) 2.254	-0.082 (0.052) -1.600	0.241 (0.062) 3.869	0.605 (0.074) 8.180	0.495 (0.062) 7.995	-0.366 (0.077) -4.764
Frmintbh	--	-- (0.056) -2.679	-0.151 (0.120) 1.565	0.188	--	--

Covariance Matrix of ETA and KSI

	Globmind	Frmintbh	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globmind	1.000							
Frmintbh	0.780	1.000						
Chhgrnd	0.330	0.241	0.804					
EduLang	0.154	0.148	0.035	0.759				
Dmchar	0.312	0.140	0.332	0.008	0.806			
Workexp	0.601	0.521	0.294	0.209	0.206	0.657		
Firmchar	0.621	0.493	0.124	0.149	0.206	0.432	0.799	
Domperf	0.181	0.108	0.239	-0.027	0.409	0.217	0.243	0.551

PHI

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Chhgrnd	0.804 (0.078) 10.344					
EduLang	0.035 (0.053) 0.655	0.759 (0.073) 10.344				
Dmchar	0.332 (0.060) 5.577	0.008 (0.053) 0.150	0.806 (0.078) 10.344			
Workexp	0.294 (0.054) 5.486	0.209 (0.050) 4.152	0.206 (0.052) 3.985	0.657 (0.064) 10.344		

Firmchar	0.124	0.149	0.206	0.432	0.799	
	(0.055)	(0.054)	(0.057)	(0.058)	(0.077)	
	2.237	2.749	3.637	7.492	10.344	
Domperf	0.239	-0.027	0.409	0.217	0.243	0.551
	(0.048)	(0.044)	(0.053)	(0.044)	(0.048)	(0.053)
	4.944	-0.610	7.652	4.963	5.031	10.344

PSI

Note: This matrix is diagonal.

Globmind	Frminth
-----	-----
0.291	0.367
(0.069)	(0.051)
4.210	7.143

Squared Multiple Correlations for Structural Equations

Globmind	Frminth
-----	-----
0.709	0.633

Squared Multiple Correlations for Reduced Form

Globmind	Frminth
-----	-----
0.709	0.485

Reduced Form

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globmind	0.126	-0.082	0.241	0.605	0.495	-0.366
	(0.056)	(0.052)	(0.062)	(0.074)	(0.062)	(0.077)
	2.254	-1.600	3.869	8.180	7.995	-4.764
Frminth	0.090	-0.059	0.021	0.620	0.353	-0.262
	(0.042)	(0.038)	(0.064)	(0.079)	(0.069)	(0.068)
	2.134	-1.556	0.326	7.817	5.109	-3.871

THETA-EPS

Globalor	Intperf	Intiocon	Intnetwg
-----	-----	-----	-----
0.083	0.087	0.025	0.148
(0.053)	(0.012)	(0.009)	(0.016)
1.578	7.184	2.772	8.965

Squared Multiple Correlations for Y - Variables

Globalor	Intperf	Intiocon	Intnetwg
0.908	0.910	0.973	0.843

Goodness of Fit Statistics

Degrees of Freedom = 17
Minimum Fit Function Chi-Square = 53.476 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 50.192 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 33.192
90 Percent Confidence Interval for NCP = (15.651 ; 58.361)

Minimum Fit Function Value = 0.250
Population Discrepancy Function Value (F0) = 0.155
90 Percent Confidence Interval for F0 = (0.0731 ; 0.273)
Root Mean Square Error of Approximation (RMSEA) = 0.0955
90 Percent Confidence Interval for RMSEA = (0.0656 ; 0.127)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00803

Expected Cross-Validation Index (ECVI) = 0.590
90 Percent Confidence Interval for ECVI = (0.508 ; 0.707)
ECVI for Saturated Model = 0.514
ECVI for Independence Model = 9.644

Chi-Square for Independence Model with 45 Degrees of Freedom = 2043.840
Independence AIC = 2063.840
Model AIC = 126.192
Saturated AIC = 110.000
Independence CAIC = 2107.546
Model CAIC = 292.276
Saturated CAIC = 350.385

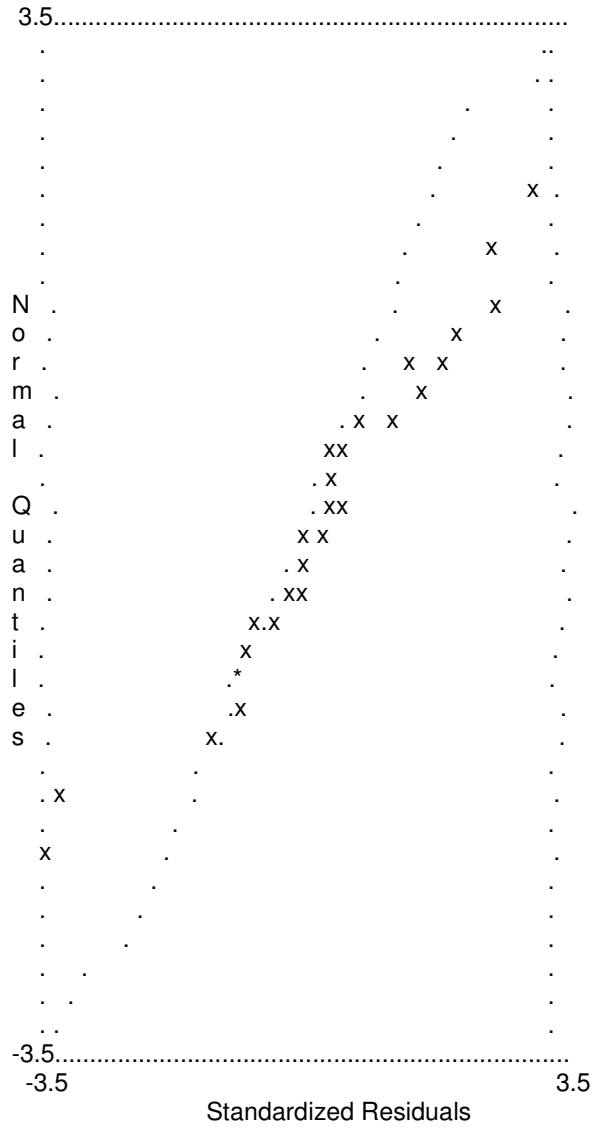
Normed Fit Index (NFI) = 0.974
Non-Normed Fit Index (NNFI) = 0.952
Parsimony Normed Fit Index (PNFI) = 0.368
Comparative Fit Index (CFI) = 0.982
Incremental Fit Index (IFI) = 0.982
Relative Fit Index (RFI) = 0.931

Critical N (CN) = 134.705

Root Mean Square Residual (RMR) = 0.0154
Standardized RMR = 0.0182
Goodness of Fit Index (GFI) = 0.955
Adjusted Goodness of Fit Index (AGFI) = 0.855
Parsimony Goodness of Fit Index (PGFI) = 0.295

GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Qplot of Standardized Residuals



GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Modification Indices and Expected Change

Modification Indices for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	3.713	11.984	5.616	--

Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.083	-0.135	0.120	--

Standardized Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.083	-0.135	0.120	--

Completely Standardized Expected Change for LAMBDA-Y

	Globalor	Intperf	Intiocon	Intnetwg	Frmintbh
	--	0.084	-0.141	0.123	--

No Non-Zero Modification Indices for BETA

Modification Indices for GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	--	--	--	--	--	--
Frmintbh	0.052	0.631	--	--	0.344	0.216

Expected Change for GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globalor	--	--	--	--	--	--
Frmintbh	0.013	0.043	--	--	0.063	0.040

Standardized Expected Change for GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globmind	--	--	--	--	--	--
Frmintbh	0.012	0.038	--	--	0.056	0.029

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for PSI

Modification Indices for THETA-EPS

	Globalor	Intperf	Intiocon	Intnetwg
	-----	-----	-----	-----
Globalor	--	--	--	--
Intperf	16.213	--	--	--
Intiocon	15.615	6.606	--	--
Intnetwg	0.354	10.816	2.350	--

Expected Change for THETA-EPS

	Globalor	Intperf	Intiocon	Intnetwg
	-----	-----	-----	-----
Globalor	--	--	--	--
Intperf	0.047	--	--	--
Intiocon	-0.041	0.061	--	--
Intnetwg	0.008	-0.055	0.028	--

Completely Standardized Expected Change for THETA-EPS

	Globalor	Intperf	Intiocon	Intnetwg
	-----	-----	-----	-----
Globalor	--	--	--	--
Intperf	0.050	--	--	--
Intiocon	-0.045	0.065	--	--
Intnetwg	0.009	-0.057	0.030	--

Modification Indices for THETA-DELTA-EPS

	Globalor	Intperf	Intiocon	Intnetwg
	-----	-----	-----	-----
Chhgrnd	0.090	3.157	7.759	3.406
Edulang	0.769	0.155	3.741	3.724
Dmchar	0.307	0.016	0.067	0.201
Workexp	0.946	0.072	0.502	1.222
Firmchar	0.502	14.442	3.418	5.395
Domperf	0.325	1.773	1.826	0.444

Expected Change for THETA-DELTA-EPS

	Globalor	Intperf	Intiocon	Intnetwg	
Chhgrnd	-0.013	-0.030	0.039	-0.038	
EduLang	-0.042	-0.007	0.030	-0.043	
Dmchar	0.037	-0.002	0.003	-0.008	
Workexp	0.060	-0.003	-0.007	0.015	
Firmchar	-0.071	-0.052	0.022	0.039	
Domperf	-0.021	0.016	-0.013	0.010	

Completely Standardized Expected Change for THETA-DELTA-EPS

	Globalor	Intperf	Intiocon	Intnetwg	
Chhgrnd	-0.016	-0.034	0.045	-0.044	
EduLang	-0.051	-0.008	0.035	-0.051	
Dmchar	0.043	-0.002	0.004	-0.009	
Workexp	0.077	-0.004	-0.009	0.019	
Firmchar	-0.084	-0.059	0.025	0.045	
Domperf	-0.030	0.021	-0.019	0.013	

Maximum Modification Index is 16.21 for Element (2, 1) of THETA-EPS

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Standardized Solution

LAMBDA-Y

	Globalmind	Frmintbh
Globalor	0.907	--
Intperf	--	0.941
Intiocon	--	0.948
Intnetwg	--	0.892

BETA

	Globalmind	Frmintbh
Globalmind	--	--
Frmintbh	0.714	--

GAMMA

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
Globalmind	0.113	-0.072	0.216	0.490	0.442	-0.272
Frmintbh	--	--	-0.136	0.152	--	--

Correlation Matrix of ETA and KSI

	Globmind	Frmintbh	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	1.000							
Frmintbh	0.780	1.000						
Chhgrnd	0.368	0.268	1.000					
Edulang	0.177	0.170	0.045	1.000				
Dmchar	0.348	0.156	0.412	0.010	1.000			
Workexp	0.742	0.643	0.405	0.296	0.283	1.000		
Firmchar	0.694	0.552	0.155	0.191	0.257	0.596	1.000	
Domperf	0.243	0.145	0.359	-0.042	0.614	0.361	0.366	1.000

PSI

Note: This matrix is diagonal.

Globmind	Frmintbh
0.291	0.367

Regression Matrix ETA on X (Standardized)

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.113	-0.072	0.216	0.490	0.442	-0.272
Frmintbh	0.081	-0.051	0.019	0.502	0.316	-0.194

!GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Completely Standardized Solution

LAMBDA-Y

	Globmind	Frmintbh
Globalor	0.953	--
Intperf	--	0.954
Intiocon	--	0.986
Intnetwg	--	0.918

BETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.714	--

GAMMA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.113	-0.072	0.216	0.490	0.442	-0.272
Frmintbh	--	--	-0.136	0.152	--	--

Correlation Matrix of ETA and KSI

	Globmind	Frmintbh	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	1.000							
Frmintbh	0.780	1.000						
Chhgrnd	0.368	0.268	1.000					
Edulang	0.177	0.170	0.045	1.000				
Dmchar	0.348	0.156	0.412	0.010	1.000			
Workexp	0.742	0.643	0.405	0.296	0.283	1.000		
Firmchar	0.694	0.552	0.155	0.191	0.257	0.596	1.000	
Domperf	0.243	0.145	0.359	-0.042	0.614	0.361	0.366	1.000

PSI

Note: This matrix is diagonal.

Globmind	Frmintbh
0.291	0.367

THETA-EPS

Globalor	Intperf	Intiocon	Intnetwg
0.092	0.090	0.027	0.157

Regression Matrix ETA on X (Standardized)

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.113	-0.072	0.216	0.490	0.442	-0.272
Frmintbh	0.081	-0.051	0.019	0.502	0.316	-0.194

GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Total and Indirect Effects

Total Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.126	-0.082	0.241	0.605	0.495	-0.366
	(0.056)	(0.052)	(0.062)	(0.074)	(0.062)	(0.077)
	2.254	-1.600	3.869	8.180	7.995	-4.764
Frmintbh	0.090	-0.059	0.021	0.620	0.353	-0.262
	(0.042)	(0.038)	(0.064)	(0.079)	(0.069)	(0.068)
	2.134	-1.556	0.326	7.817	5.109	-3.871

Indirect Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globmind	--	--	--	--	--	--
Frmintbh	0.090	-0.059	0.172	0.432	0.353	-0.262
	(0.042)	(0.038)	(0.053)	(0.094)	(0.069)	(0.068)
	2.134	-1.556	3.258	4.596	5.109	-3.871

Total Effects of ETA on ETA

	Globmind	Frmintbh
	-----	-----
Globmind	--	--
Frmintbh	0.714	--
	(0.123)	
	5.823	

Largest Eigenvalue of B*B' (Stability Index) is 0.509

Total Effects of ETA on Y

	Globmind	Frmintbh
	-----	-----
Globalor	0.907	--
Intperf	0.671	0.941
	(0.115)	
	5.823	
Intiocon	0.677	0.948
	(0.115)	(0.025)
	5.859	38.549
Intnetwg	0.636	0.892
	(0.110)	(0.033)
	5.783	27.089

Indirect Effects of ETA on Y

	Globmind	Frmintbh
	-----	-----
Globalor	--	--
Intperf	0.671	--
	(0.115)	
	5.823	
Intiocon	0.677	--
	(0.115)	
	5.859	
Intnetwg	0.636	--
	(0.110)	
	5.783	

Total Effects of X on Y

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
	-----	-----	-----	-----	-----	-----
Globalor	0.114	-0.075	0.219	0.548	0.449	-0.332
	(0.051)	(0.047)	(0.057)	(0.067)	(0.056)	(0.070)
	2.254	-1.600	3.869	8.180	7.995	-4.764
Intperf	0.085	-0.055	0.020	0.583	0.332	-0.246
	(0.040)	(0.036)	(0.061)	(0.075)	(0.065)	(0.064)
	2.134	-1.556	0.326	7.817	5.109	-3.871
Intiocon	0.085	-0.056	0.020	0.588	0.335	-0.248
	(0.040)	(0.036)	(0.061)	(0.074)	(0.065)	(0.064)
	2.136	-1.556	0.326	7.906	5.134	-3.882
Intnetwg	0.080	-0.052	0.019	0.553	0.315	-0.233
	(0.038)	(0.034)	(0.057)	(0.072)	(0.062)	(0.060)
	2.132	-1.555	0.326	7.721	5.082	-3.859

GLOBAL MINDSET AND FIRM INTERNATIONALIZATION BEHAVIOR MODEL

Standardized Total and Indirect Effects

Standardized Total Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	0.113	-0.072	0.216	0.490	0.442	-0.272
Frmintbh	0.081	-0.051	0.019	0.502	0.316	-0.194

Standardized Indirect Effects of X on ETA

	Chhgrnd	Edulang	Dmchar	Workexp	Firmchar	Domperf
Globmind	--	--	--	--	--	--
Frmintbh	0.081	-0.051	0.154	0.350	0.316	-0.194

Standardized Total Effects of ETA on ETA

	Globmind	Frmintbh
Globmind	--	--
Frmintbh	0.714	--

Standardized Total Effects of ETA on Y

	Globmind	Frmintbh
Globalor	0.907	--
Intperf	0.671	0.941
Intiocon	0.677	0.948
Intnetwg	0.636	0.892

Completely Standardized Total Effects of ETA on Y

	Globmind	Frmintbh
Globalor	0.953	--
Intperf	0.681	0.954
Intiocon	0.704	0.986
Intnetwg	0.655	0.918

Standardized Indirect Effects of ETA on Y

	Globmind	Frmintbh
Globalor	--	--
Intperf	0.671	--
Intiocon	0.677	--
Intnetwg	0.636	--

Completely Standardized Indirect Effects of ETA on Y

	Globalor	Intperf	Intiocon	Intnetwg
-----	-----	-----	-----	-----
Globalor	--	--		
Intperf	0.681	--		
Intiocon	0.704	--		
Intnetwg	0.655	--		

Standardized Total Effects of X on Y

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
-----	-----	-----	-----	-----	-----	-----
Globalor	0.102	-0.065	0.196	0.445	0.401	-0.247
Intperf	0.076	-0.048	0.018	0.473	0.297	-0.183
Intiocon	0.076	-0.049	0.018	0.476	0.299	-0.184
Intnetwg	0.072	-0.046	0.017	0.448	0.281	-0.173

Completely Standardized Total Effects of X on Y

	Chhgrnd	EduLang	Dmchar	Workexp	Firmchar	Domperf
-----	-----	-----	-----	-----	-----	-----
Globalor	0.108	-0.068	0.206	0.467	0.421	-0.259
Intperf	0.077	-0.049	0.018	0.479	0.301	-0.185
Intiocon	0.079	-0.051	0.019	0.495	0.311	-0.191
Intnetwg	0.074	-0.047	0.017	0.461	0.290	-0.178

Time used: 0.210 Seconds



Universitat Ramon Llull
Fundació

ESCOLA SUPERIOR D'ADMINISTRACIÓ I DIRECCIONES-ESADE _____ curs 2006-2007
Nom i cognoms: OYVIN KYVIK amb passaport núm. 199, MASTER OF SCIENCE IN ECONOMICS AND BUSINESS ADMINISTRATION per la NORWEGIAN SCHMICS AND BUSINESS ADMINISTRATION en data 3 DE JUNY DE 1984. Ha obtingut la suficiència investiga 25 DE NOVEMBRE DEL 2004 en el programa de Doctorat MANAGEMENT SCIENCES en el bienni: 20rtit pel departament de ECONOMIA, CIÈNCIES SOCIALS I MÈTODES en la ESCOLA SUPERIOR D'ADMINISTRACIÓ D'EMPRESSES ESADE de la UNIVERSITAT RAMON LLULL

Barcelona, a 11 de desembre del 2006

El/la Secretari/ària,

El/la Cap de Secretaria,

Signat: Sr. Josep E. Milà

Signat: Sra. Dolors Orús

**ACTA DEL
GRAU DE DOCTOR**

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En aquesta data es reuneix el Tribunal nomenat el dia 16 D'OCTUBRE DEL 2006 per jutjar la tesi doctoral per a l'obtenció del títol de DOCTOR PER LA UNIVERSITAT RAMON LLULL que presenta el SR. OYVIN KYVIK el títol de la qual és THE INTERNATIONALIZATION OF SMALL FIRMS: A COGNITIVE PERSPECTIVE. AN EMPIRICAL ASSESSMENT OF THE RELATIONSHIP BETWEEN DECISION MAKERS' GLOBAL MINDSET AND NORWEGIAN SMALL FIRMS' INTERNATIONALIZATION BEHAVIOUR. Exposada i mantinguda la tesi, és qualificada amb

Excel·lent Cum Laude

Barcelona, a 11 de desembre del 2006

El/la President/a,

El/la Secretari/ària,

FACULTAT/ESCOLA SUP.

Signat: Dr. Alfons Sauquet Rovira

Signat: Dr. Joan Manel Batista Foguet

El/la Vocal,

El/la Vocal,

El/la Vocal,

Signat: Dr. Johan Olaisen Signat: Dr. Carsten Syvertsen Signat: Dra. Silviya Svejenova

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