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Survival Competencies in SMEs in Changing Business Environments





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Design and Layout: Aivo Blum
Lector Publishing Ltd
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ISBN 978-952-12-3295-4 (nid.)
ISBN 978-952-12-3296-1 (PDF)
Pallosalama Oy – Turku, Finland

ACKNOWLEDGEMENTS

To complete this dissertation has been a memorable and didactic path. Along the journey, I have met interesting people, visited many places, and discussed various issues. Like all paths, travelling along the path teaches you a lot.

There are many individuals I would like thank for their input along my dissertation path. First of all, I want to thank all the SMEs involved in this study and those people interviewed for the time they gave me and the possibility they gave me to introduce their reality in order to collect empirical data. People from Anjalankosken Yrittäjät ry, CTS Engtec, EMG Emerging Markets Group LLC, Keskilaakso (regional newspaper), KymAir Oy, Mass-pap Oy, and Silén Oy have additionally shown special interest in my work, and I thank you all for that.

Discussions with other scholars in academic world are valuable in order to refine your ideas and improve your work. Thus, I would like to thank my supervisors Professor Kim Wikström and Postdoctoral Researcher Maria Ivanova-Gongne for their valuable feedback and advice. Additionally, Adjunct Professor Hannele Lampela with her enlightening discussions, optimistic support, and co-working over the years deserves my special thanks. Moreover, my thanks go to all the multilingual and multicultural co-workers in Åbo Akademi in Turku for their encouragement and inspiring spirit. Furthermore, I am very grateful to Elizabeth Nyman, who proofread the text and helped to give it to its final, fluent form. I also want to thank Pia Heilmann and Kaisa Henttonen, for their valuable share/contribution in writing publications for this thesis.

On a path you also need also guidance. I have had the privilege to receive valuable feedback and guidance from Professor Lene Foss and Research Director Markku Virtanen as the reviewers of the thesis, both of whom helped me to improve the thesis content and manuscript. Furthermore, I would like to sincerely thank Pienyrityskeskusten tukisäätiö (Aalto-yliopisto, Kauppakorkeakoulu, Pienyrityskeskus), Liikesivistysrahasto, Kymin Osakeyhtiön 100-vuotissäätiö, and FIMEC; REBUS program for the financial support from them for my studies.

Finally, I wish to thank my family for all the support and patience they have given me during this process. A parent's mission is always to raise children with her own example. I hope that I have set a good example to my children, Nina-Erika and Erkka-Veli, by producing this dissertation, and showing that the world is open for you to achieve your desired goals. And last, and most importantly, thank you Matti for all the empathy and encouraging hugs along this journey.

Kyllikki Taipale-Erävala

ABSTRACT

The thesis examines the competencies that enable business survival in changing business environments from the perspective of Russian and Finnish micro, small, and medium-sized enterprises in the field of forest industry. Additionally, it studies the competence transformation necessary in SMEs for successful continuation of business operations when a firm considers transferring its business to another industry. The dissertation builds a holistic firm-level view of survival competencies for SMEs facing changes in their business environments. The holistic firm-level view of competencies includes both the individual-level and the firm-level perspectives, regardless of the position of the person in a firm.

The findings highlight the importance of high-level individual competencies and the ability to perform versatile tasks in a firm. In addition, continuous business environment scanning, self-evaluation of personal competencies, willingness to renew and change, open-mindedness, and a readiness to network, are competencies that belong to and need to be taken care of by everybody – employees and employers - in a firm. In addition to previous competencies, an ability to manage every-day business also needs to be embedded in SME owners/managers. Furthermore, Russian SMEs seem to be more proactive in change situations, when compared with Finnish SMEs, which are used to operate in a more stable business environment. In conclusion, it can be said that the thesis adds to SME literature by introducing the concept of ‘SME-level competencies’, a combination of previously discussed organisational and networking competencies which are needed in order to survive through change. Furthermore, the thesis concludes with new competence classifications, such as operational and change competencies, which offer new information concerning the required competencies by which a firm may reduce the resistance to change that can hinder business renewal.

For SME practitioners, the study suggests proper preparation and proactive operations in their business to reduce the influence of endless changes, and reminds SME owners/managers that changes are, however, a significant source of new business opportunities. For educational players, the study suggests upgrading educational and training systems by improving the training as regards attitudes towards work, and especially training in the comprehensive working abilities needed in SMEs to master diverse tasks. Finally, for public actors the study suggests providing stronger support to entrepreneurs by boosting SMEs entrepreneurial conditions and the existing business possibilities in change situations. This can be done by encouraging a legislative and entrepreneurial climate that responds better to the demands of SMEs.

Keywords: competence, competencies, SMEs, survival, Finnish, Russian, changes, forest industry

REFERAT

Denna avhandling undersöker kunnandet som har möjliggjort ryska och finska mikro, små och medelstora företagens överlevnad inom skogsindustrin som möts av förändringar i sin affärsomgivning. Dessutom undersöks förändringar i kunnandet i mikro, små och medelstora företag (SMF) som är nödvändiga för fortsatt framgångsrik verksamhet då företaget överväger att överföra sin verksamhet till andra branscher.

Denna avhandling bildar en helhetssyn på överlevnadskompetenser på företagsnivå för SMF som möts av förändringar i sina affärsmiljöer. Denna helhetsbild av kunnandet omfattar både individers och företagets kunnande utan att ta hänsyn till personens uppgift i ett företag.

Forskningen betonar vikten av individuellt kunnande på hög nivå och förmåga att utföra mångsidiga arbetsuppgifter i ett företag. Kontinuerlig uppföljning av affärsomgivningen, självutvärdering av det egna kunnandet, vilja att förnya och förändra, och fördomsfrihet och beredskap för nätverkande, är kunnande som behövs och som skall tas hand om av alla i företaget, såväl arbetstagare som arbetsgivare. Utöver dessa kompetenser, behöver SMF:s ägare/chefer ha förmågan att leda och sköta de vardagliga affärerna. Resultaten ger också antydningar om att ryska SMF är mera proaktiva i förändringssituationer i jämförelse med finska SMF, som är vana att arbeta i en stabilare affärsomgivning.

Som slutsats bidrar forskningen bl.a. med formuleringar för en kombination av tidigare diskuterade organisatoriska och nätverkskunnande, dvs. "SMF kunnande", som behövs för att överleva förändringar. Därtill har avhandlingen tagit fram nya klassifikationer för kunnande, såsom verksamhets- och förändringskunnande, som erbjuder ny information om det nödvändiga kunnande genom vilket ett företag kan minska förändringsmotstånd som hindrar affärsförnyelse.

För aktörer inom SMF föreslår denna forskning ordentliga förberedelser och proaktiva åtgärder för att minska de ändlösa förändringarnas effekt på affärsverksamheten, och påminner de små och medelstora företagens ägare/ledare att förändringar är en viktig källa för nya affärsmöjligheter. För utbildningsorganisationer föreslår undersökningen en uppdatering av utbildningssystemen genom att förbättra fostran i attityd till arbete och framför allt utvecklandet av omfattande arbetskompetenser och förmågor som behövs för att bemästra olika uppgifter i små och medelstora företag. Slutligen, föreslår avhandlingen att de offentliga aktörerna skulle ge starkare stöd till företagare genom att förbättra förhållanden för företagare och befintliga affärsmöjligheter. Genom att påverka lagstiftningen och företagarklimatet kan man bättre svara på SMFs krav i förändringssituationer.

Nyckelord: kunnande, små och medelstora företag (SMF), överlevnad, finska, ryska, förändringar, skogsindustrin

TIIVISTELMÄ

Väitöskirja tutkii osaamista, joka mahdollistaa liiketoiminnan jatkumisen toimintaympäristön muutoksissa venäläisissä ja suomalaisissa mikro-, pien- ja keski-suurissa yrityksissä metsäteollisuuden alalla. Tutkimus käsittelee myös osaamisen muutosta tilanteessa, jossa Pk-yrityksen harkitsee liiketoiminnan siirtämistä toiselle toimialalle jatkaakseen toimintaansa valitulla alalla menestyksellisesti. Väitöskirja muodostaa Pk-yritystasolla olevan kokonaiskuvan selviytymisosaamisesta, jonka avulla yritykset pystyvät kohtaamaan liiketoimintaympäristönsä muutokset. Kokonaiskuva muodostuu sekä yksilö- että yritystason osaamisesta riippumatta henkilöiden toimenkuvista.

Tulokset painottavat liiketoiminnan säilyttämisen kannalta tärkeinä korkeatasoista yksilöosaamista ja kyvykkyyttä suorittaa monipuolisia töitä yrityksessä. Lisäksi jatkuva liiketoimintaympäristön seuraaminen, oman osaamisen itsearviointi, halukkuus uudistua ja muuttua, ennakkoluulottomuus ja valmius verkostoitua, ovat kaikki sitä osaamista, joka kuuluu jokaiselle yrityksessä työskentelevälle, ja josta jokaisen on huolehdittava. Edellisten lisäksi, kyky johtaa ja hoitaa arkipäivän liiketoimintoja kuuluu lisäksi Pk-yritysten omistajille/johtajille. Vertailtaessa venäläisiä ja suomalaisia Pk-yrityksiä, venäläiset Pk-yritykset näyttävät huomioivan muutokset energisemmin kuin suomalaiset Pk-yritykset, jotka ovat toimineet vakaammassa liiketoimintaolosuhteissa.

Väitöskirja lisää Pk-yrityskirjallisuuteen mm. aikaisemmat organisaatio- ja verkosto-osaamisen yhdistävän termin 'Pk-osaaminen', jota tarvitaan selviytymään tapahtuvissa muutoksissa. Väitöskirja on päätenyt myös uusiin osaamisluokitteluihin, kuten toiminnalliseen osaamiseen ja muutososaamiseen, ja tarjoaa täten uutta tietoa vaaditusta osaamisesta, jonka avulla yritys voi vähentää liiketoiminnan uudistumista estävää muutosvastarintaan.

Väitöskirja ehdottaa käytännön toimina Pk-yrityksille kelvollista valmistautumista ja ennakoivuutta vähentämään loputtomien muutoksen vaikutusta liiketoimintaansa. Lisäksi Pk-yritysten omistajille/johtajille muistutetaan, että muutokset ovat kuitenkin merkittävä uusien liiketoimintamahdollisuuksien lähde. Koulutusten järjestäjiä kehoitetaan parantamaan koulutusjärjestelmiä siten, että ne kohdistuvat työasenteisiin ja varsinkin kattavien, Pk-yrityksissä tarvittavien tötaitojen ja työtehtävien hallintaan. Julkisia toimijoita suositellaan kohdentamaan voimakkaampaa tukea yrittäjille parantamalla Pk-yritysten yrittämisen olosuhteita sekä olemassa olevan liiketoiminnan mahdollisuuksia. Toimet lainsäädännössä ja yrittäjyysilmastossa vastaavat parhaiten Pk-yritysten tarpeisiin.

Avainsanat: osaaminen, Pk-yritykset, selviytyminen, suomalainen, venäläinen, muutokset, metsäteollisuus

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LIST OF PUBLICATIONS AND AUTHOR'S CONTRIBUTION

This thesis consists of an overview (Part I) and related publications (Part II). The publications included in Part II are listed below, together with information on their review processes and the contribution of the present author of this thesis. All publications are published (Publication 4 is in process) in international, double-blind, peer-reviewed journals or conference proceedings. In all publications the author was a corresponding author.

Publication 1

Taipale-Erävala, K. and Lampela, H., 2011. A literature overview of competence identification in SMEs, in IFKAD – 6th International Forum on Knowledge Asset Dynamics: Knowledge-Based Foundations of the Service Economy, Tampere, Finland, 15-17 June 2011, 2011, CD-publication, 18 pp., ISBN 978-88-96687-05-5.

The author designed the research plan, conducted with a co-writer the literature review, analysed the results, and drew the conclusions of the paper. The author was responsible for a coordination of writing the paper. The paper was jointly written.

Publication 2

Taipale-Erävala, K., Heilmann, P., and Lampela, H., 2014. Survival competence in Russian SMEs in changing business environment, *Journal of East-West Business*, Vol. 20, No. 1, pp. 25-43.

The author designed the research plan, reviewed with co-writers the existing literature, gathered the data in Russia and in Finland, and conducted the analysis and results. The author coordinated the writing process and was responsible for combining the texts with the coherent whole of the jointly written paper.

Publication 3

Taipale-Erävala, K., Lampela, H., and Heilmann, P., 2015. Survival Skills in SMEs: Continuous Competence Renewing and Opportunity Scanning, *Journal of East-West Business*, Vol. 21, No. 1, pp. 1-21.

The author designed the research plan, reviewed with co-writers the existing literature, gathered the data in Russia and in Finland, and conducted the analysis and results. The author coordinated the writing process and was responsible for combining the texts with the coherent whole of the jointly written paper.

Publication 4

Taipale-Eräväla, K., Henttonen, K., and Lampela, H. (forthcoming). Entrepreneurial competencies in innovative SMEs. Submitted for review as a candidate for publication to *International Journal of Entrepreneurship and Small Business*.

The data was gathered in Finland in a former project of NicheInno, where the author participated as a specialist. The author designed the research plan for the paper, reviewed with co-writers the existing literature, analysed the data, and conducted the results. The author coordinated the writing process and was responsible for combining the texts with the coherent whole of the jointly written paper.

Publication 5

Taipale-Eräväla, K., Heilmann, P., and Lampela, H., 2014. SME competence transformation – a case study on industrial structural change, *International Journal of Business Innovation and Research*, Vol. 8, No. 3, pp. 265-281.

The author designed the research plan, reviewed with co-writers the existing literature, gathered the data, and conducted the analysis and results. The author coordinated the writing process and was responsible for combining the texts with the coherent whole of the jointly written paper.

ABBREVIATIONS

CC	Change competencies
CPV	Competence-based view
EC	Entrepreneurial competencies
EC	European Commission
EU	European Union
HRD	Human resource development
HRM	Human resource management
IC	Individual competencies
KBV	Knowledge-based view
MC	Managerial competencies
NC	Networking competencies
OC	Organisational competencies
OECD	Organisation for Economic Cooperation and Development
OpC	Operational competencies
RBV	Resource-based view
SMEs	Micro, small and medium-sized enterprises
TTEC	Template of typical entrepreneurial competencies
VET	Vocational education and training

PART I

OVERVIEW OF THE DISSERTATION

1. INTRODUCTION

This thesis focuses on business survival enabling competencies in changing business environments from the point of view of micro, small, and medium-sized enterprises. Therefore, the aim of the study is to offer new information on a holistic competence phenomenon for SMEs in order to survive in business. This section introduces the objective of the study in the form of the research questions, as well as the research background, and positions the study into the theoretical and empirical environment. Additionally, the section provides information concerning the structure of the thesis.

1.1 Motivations for the study

The researcher's motivation to study micro, small, and medium-sized enterprises (SMEs) firstly arose as an interest in how societies, politicians, and the public media have more or less disregarded the economic impact of SMEs despite their obvious positive impact on the economic situation and employment. Large companies dominate the news in TV, radio, and economic newspapers so that any news concerning SMEs is marginalised, which does not reflect their real economic impact. This minority share of the visibility in the media unfortunately generates a common image of which companies are worth reporting on, and which are not. This, in turn, influences the behaviour of politicians. The mental proximity of large companies, due to their active public relationships and their lobbying of decision-makers, can affect the enacting of laws, statutes, and taxation. In many countries, the associations of entrepreneurs constantly indicate that e.g. labour laws should be enacted to better suit smaller firms, instead of the general aptness of the laws for large companies. In addition, some societies, such as in Finland, favour energy intensive industries, which in practice means manifest disparity in electricity taxation between the business sectors. At the end of 2014, the Finnish government proposed new taxation on electricity, where the firms in the service sector would pay electricity taxes that are six times higher per kilowatt-hour than industry (Palta, 2015). This increase in taxes would significantly lower competitiveness in the service sector, which includes SMEs exploiting new business opportunities in areas like software and data services, logistics centres, and fields related to tourism. The example of the electricity taxation illustrates the institutional intentional or unintentional disregard of SMEs, which may also be seen in planning, land usage, etc. all these operations form the institutional image which influences the entrepreneurial environment. Therefore, all studies focused on SMEs are important in order to remind politicians, the media, and other forces in society that SMEs truly deserve their attention and actions, and that public measures should be tailored to the scale of SME operations.

Secondly, it can be noticed that in academic literature SMEs are mainly viewed from the perspective of entrepreneurs or managers with little attention being given to the effect of employees on a firm's performance. It is striking that the employees' input is so rarely observed in SME studies, although SMEs have limited human resources, and it is likely that all the individual employee's inputs are needed for sufficient performance. If all human resources in SMEs influence the business success, the next logical assumption is that fundamentally the competencies of all the individuals in a firm have an effect on the business success. Individual competencies are widely studied in the literature, but a holistic SME-level perspective is missing. Management theories, e.g. core competencies (Prahalad and Hamel, 1990) and dynamic capabilities (Teece et al., 1997) provide an organisational resource-based view to improve competitiveness and business success in change situations but are they really suitable for SMEs? Theories are usually developed to fit large-scale organisations, but in SMEs the number of staff is limited and thus organisations in SMEs are typically small. Therefore, it is important to study competencies enabling business continuity from a holistic point of view at the SME-level. This is in order to gain a better understanding of the need for various competencies for business success, which in turn also generates wealth in communities around SMEs. The aspect of competencies, in turn, may influence educational and training institutions so that they are able to teach and train individuals from the point of view of SMEs, and thus promote entrepreneurship, new innovations, and new jobs.

1.2 Background and research environment

In academic research and in public policy the interest in micro, small and medium-sized enterprises (SMEs) has increased in the 2000s because of their impact on global economic development, innovation, and job creation. The focus of interest has changed quite recently. A short time ago, in 1979, David Birch wrote about small firms, which had produced by the early 1970s over 80 % of new net jobs (Birch, 1979). Birch's implication was that small firms are the prime source of employment creation and thus are responsible for much of the economic growth. The publication brought about a considerable change in thinking, because the previously held common mind-set was that economic growth and jobs always came from large businesses, and small business only produced a minority. The change of interest in SMEs can also be seen in the literature. In 1970, 26 documents concerning SMEs (keywords small and medium-sized / sme) were published, however the number of documents in 2013 had increased to 2,298 (Scopus, 2015: Documents by year).

In the 2000s, SMEs are stated to have had a significant role in economic development. The OECD (Organisation for Economic Cooperation and Development) emphasises that SMEs are engines of growth, and the SMEs'

crucial position is highlighted in a very significant proportion of export and tax revenues in many countries (OECD, 2013). In the European Union (EU), more than 20 million SMEs represent 99 % of business, and SMEs are highlighted as key drivers for economic growth, innovation, employment, and social integration. (European Commission (EC), 2014a) One advantage for innovations is that small firms are considered more likely to introduce fundamentally new innovations than larger firms (Pavitt et al., 1987). In economic development a culture of innovation is strongly connected to entrepreneurship and thus SMEs are channels of new technology development and sustainable growth, thanks to their ability to develop and exploit innovations, and therefore to provide new employment. This instrument of employment is thus used as one of the practical indicators when measuring the success of SMEs in relation to the various innovation and business development supporting elements of different organisations and institutions. Furthermore, official economic and public institutions for development define SMEs based on employment and turnover. In the EU, SMEs provide employment for about 70 % of the private sector jobs and contribute to more than half of the total value-added created by businesses in the EU. (EC, 2013; SME facts) Although there is criticism of how different types of SMEs contribute to the economy (Nightingale and Coad, 2014), and thus contribute to job creation and quality of employment, e.g. wages (Butani et al., 2006), SMEs are, however, providing more jobs according to the statistics (de Kok et al., 2011).

In the large-company intensive countries such as the Finland, France, United Kingdom, Slovakia and Iceland (de Kok et al., 2011) where industrial structural changes have disturbed the economic structures, SMEs have become important drivers for new innovations and thus new employers. In Finland, for example, between 2001 and 2010 large enterprises reduced the number of available jobs by a total of 300 (the net loss of jobs compared to new employment), and SMEs, in proportion, employed 77 000 more people in the same period (Routamaa, 2013). The micro entrepreneurs have employed five times more people than large companies in the 2000s (Federation of Finnish Enterprises, 2013). The responsibility of employment seems to be transferring to the micro, small, and medium-sized enterprises (Federation of Finnish Enterprises, 2014) instead of large companies, as presented in the beginning of the thesis by Birch (1979). The changed positions of SMEs as significant innovation exploiters, strong employment players, and having an influence on economic development justify an examination of SMEs. This is especially true when it is noticed that all those businesses which start up as very small in size tend to introduce the majority of innovations (Radas and Bozic, 2009). Additionally, new innovations demand new knowledge and skills and thus it is crucial to know how SMEs will react and respond to changing business environments. This is important in order

to assist and promote SME business continuity, and strengthen the firms facing the challenges and possibilities presented by the environment.

In the global economy, the changes are constantly caused by the global economy reforming industrial structures and economies. Industrial structural changes are long-term, but the suddenness of changes might strongly impact various business fields. In change situations, firms need to struggle for business success against various challenges. In recent entrepreneurial literature, firms are investigated through the domains of their entrepreneurial ecosystem. For example, Isenberg's model of an entrepreneurial ecosystem introduces entrepreneurship constructed of items related to policy, finance, culture, supports, human capital, and markets impacting the entrepreneurs' decisions and success (Isenberg, 2011). The model serves as one of the various entrepreneurial theories including human capital, and its influence on business success. However, the basic idea of this study argues that competencies have the most forceful role influencing a firm's performance. For example, the influence of financial issues on a firm's performance; firstly externally, how and what kind of financing a firm is able to acquire outside the firm, and secondly internally, what are the persons' financial skills and abilities to use finances to the benefit to the firm. Thus, within many domains competencies govern and are embedded widely in a firm and its performance. Thus, there are many points of views and different theories to observe as regards the issues of success, but they do not exclude one another.

The previous literature, when examined more closely, presents the following external factors, as supporting SMEs business: institutional factors (Amin and Thrift, 1994; Bartlett and Bukvič, 2001; Dickson et al., 2006; Kolodko, 2000; Smallbone and Welter, 2012), public programs (Alvarez, 2004; Cooke and Wills, 1999; Vega et al., 2008) and assistance in finance (Berger and Udell, 2006; Hughes, 1997; Roper and Scott, 2009). The internal factors helping SMEs to survive changes and continue their business are e.g. innovation (Forsman and Rantanen, 2011; Hausman, 2005; Keeble et al., 1999; Massa and Testa, 2008), marketing (Gupta and Malhotra, 2013; Knight, 2000; Parry et al., 2012), networking (Kenny and Fahy, 2011; Meyer and Skak, 2002; Muzzi and Albetini, 2014; Rolón and Martínez, 2012) and internationalisation (Cheng and Yu, 2008; Coviello and Martin, 1999). However, the shape of the business supporting issues presented above show a scattered and disconnected view of SMEs survival, and hence creates a need to approach the phenomenon from a more comprehensive point of view.

According to the theory of economic development by Joseph Schumpeter (1934), structural changes offer new business opportunities. Discovering, exploring, and exploiting new business opportunities in changed business situations requires new information, and involves creation and innovativeness. These changed business situations challenge SMEs' previous skills, capabilities, attitudes, and behaviours, in other words competencies. When

economic situations change, competencies are likely to be changed as well. Therefore, this study focuses on exploring and describing how and what role competencies have in SME business continuity in changing situations. More specifically, the focus is on survival competencies, because the SME's primary objective is survival in order to avoid business failure (Storey, 2000). Generally, business survival is defined as the percentage of new firms that continue to operate when they reach a given age reflecting their productivity, innovation, and resourcefulness, as well as their adaptability to changing market conditions. This study concentrates on temporal business survival from the point of general business continuity, referring to business longevity – i.e. long-lasting business survival, and thus not limiting the study to a certain age of business.

The concept of competence is complex and is discussed in the literature with the terms 'competence' and 'competency'. Woodruffe (1991) contrasts areas of competence as aspects of the job that an individual can perform, with the term competency referring to an individual's behaviour that supports a competent performance. Thus, competence refers to functional areas and competency refers to behavioural areas, and the holistic model of individual competence, including both 'functional competence' and 'behavioural competency', is a combination of knowledge, understanding, functionality, mental and applied skills, behaviours, attitudes and learning to learn, all of which are necessary for particular occupations (Delamare-LeDeist and Winterton, 2005). Competencies in any firms have a positive or negative effect on the firms' performance. In addition to what has been disclosed earlier, SME literature presents the SME management (van Gils, 2005; van den Heuvel et al., 2006) and human resource management (Bacon and Hoque, 2005; Wu et al., 2014) as business supporting skills and competencies.

As presented above, the wide and multi-faceted literature on competence with regard to the skills and competencies influencing a firm's performance mainly examines special, separate skills or items, and a holistic firm-level view of survival competence is lacking. Additionally, the skills and competencies are generally studied from the perspective of managers, taking into account the influence of managers on SMEs' performance, but forgetting the holistic influence of the whole personnel, i.e. taking note of both managers and employees. The human resources in SMEs are usually limited; in Europe micro, small and medium-sized enterprises employ, on average, four people (Lukács, 2005). Therefore, the effect of employees' skills and competencies is significant for any firm's performance. The small number of employees means a low structure in the organisation. In such a low structured organisation, it is difficult to separate firm-level and individual-level issues. Thus, the holistic firm-level view of competencies also needs to include the employee –level view of survival competence as a force contributing to performance. Therefore, the dissertation takes into account both the individual

and the firm perspectives and in so doing fills the gap of a holistic firm-level view of competencies than currently available in the literature (e.g. Ng and Kee, 2012; Nurach et al., 2012). The supporting competencies are named survival competencies to emphasise the nature of the circumstances i.e. drastic structural changes.

The drastic changes studied as a background are industrial structural changes – changes which disturb and modify an entire field of industry, as well as economic crises or polity changes, which in turn modify societies; thus influencing the SMEs' macro-environment. The theoretical background examination is approached with Schumpeterian innovation theory and with one of its concepts: creative destruction - where the reconstruction of economic structures releases new knowledge and thus creates new business opportunities, which an entrepreneur may exploit as innovations. These benefits of creative destruction have been ignored in previous literature. The changes, especially structural changes are considered as disastrous situations, which in general are either local or global, causing for example closures of factories. The Schumpeterian innovation theory was therefore chosen among other innovation/entrepreneurship theories, as an innovation background to highlight newly released business possibilities and, moreover, as a reminder that although the economy is in constant change, the changes offer novel business opportunities for entrepreneurs, or for anyone wishing to start as an entrepreneur. Additionally, the theory combines innovations, business cycles, and economic development. Another notable innovation/entrepreneurship theorist, Kirzner (1973) emphasises passive opportunity alertness and focusing on balancing the market (De Jong and Marsili, 2011). Referring to the main focus of the thesis, i.e. competencies, the Schumpeterian active and dynamic approach of creating new information/knowledge and opportunity is more suitable than Kirzner's less innovative, market equilibrating approach with no need for information development.

As a framework to understand entrepreneurship and its operations, Shane's entrepreneurial process is used, which is "the nexus between enterprising individuals and valuable opportunities" (Shane, 2003: 9). The aforementioned statement includes an important point of view; an enterprising individual may be somebody else than an entrepreneur. Not all competencies in an SME are entrepreneurial, and Shane's entrepreneurial process also offers a possibility to examine a richness that is indicative of entrepreneurial competencies, and thus supports the holistic SME-level approach. The chosen entrepreneurial process model (Shane, 2003: 11, 12) comprehensively combines all the entrepreneurial phases (opportunity, its execution, and the firm's performance), when compared with other entrepreneurial process models (e.g. Stevenson and Jarillo, 1990) which mainly stress the opportunity phase, and thus only focus on opportunity, discovery, and exploring. In addition, business performance, i.e. business management, has usually been

separated into its own research area. However, an object of an entrepreneurial process model is to present only those phases that an enterprise has in its business lifecycle. However, the main focus of the study is the business supporting competencies examined as regards the extent to which they are presented in the literature. The target is on how supporting competencies internally influence SMEs and influence their relationship to the external environment. Both internal and external competence approaches are important to achieve the bottom-up view of competencies needed to meet the external business environment.

As an empirical research environment, the field of the forest industry was chosen, together with industries related to it, due to its strong economic influence for the countries in the northern parts of the globe. The impact of the forest industry has been important for the economy and employment in Canada, Sweden, Finland, and Russia. The industry has suffered from industrial structural changes because of the reduction in the use of paper in Europe. This has meant cost cutting and production transference to low cost countries such as South-America and China. In the forest industry and related industries, SMEs usually operate as subcontractors, and have an important local and regional influence on the economy together with their customers. In a situation where the production of a mill is shut down because of transference to low cost countries or due to old-fashioned technology, SMEs need to consider their options. They can either stay in the same field or renew their business and move to another industry. In the business transference situation, SMEs need a closer insight into the skills and competencies that are needed in business transference and also in operating in their chosen field of industry.

More specifically, the forest industries in Finland and in Russia were chosen as the research environment for studying firms which have survived through various changes. The economic profiles of the countries are quite different. According to the economic criterion of the OECD, Russia is described as a developing country, and Finland is described as a developed country (see the definitions OECD, 2005). However, the study focuses on business survival enabling competencies in business environmental changes, and not studying SME survival from the point of view of various development definitions as the OECD does. Furthermore, the designations “developed” and “developing” are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process (United Nations Statistics Division, 2014). Therefore, to obtain the richest data and to observe comparatively SMEs that encountered changes, it was decided to collect the empirical data from Russian and Finnish SMEs based on the import impact of the forest industry for both countries. Both countries, and thus the SMEs, have met drastic changes in the business environment, i.e. in 1991-

1992 Finland suffered a financial crisis, and later in the same decade Russia experienced its own depression. In Finland, the structure of the economy changed fundamentally. The former forestry and engineering industries lost their important position while high-tech sectors such as the mobile phones industry dominated the recovery process. (Kalela et al., 2001) The 1998 crisis in Russia caused the collapse of many banks and GDP decreased by 5 % (Komulainen, 2002). The polity changes in the 1990s in Russia and in Eastern Europe influenced Finland and Russia as did as the global economic crisis of 2008-2009. In both countries, the changes have negatively affected the economic development, and caused unemployment, and in such situations, SMEs are usually seen as being able to assist economic growth and provide new compensatory jobs.

1.3 Research questions

The main objective of the dissertation is to form a holistic view of the competencies enabling the business continuity and survival in SMEs in changing business environments. The holistic view of competencies is defined in this thesis to cover and include all competencies in an SME-level bearing in mind the limited human resources of SMEs, which is on average four people (Lukács, 2005), and comprising of SME internal competencies and competencies related to the external environment. Thus, firstly, the holistic view means a holistic competence approach. In literature, the terms competence and competency have their own contexts (see more Section 2.2.1), but due to such limited number of people in SMEs, there is a need to contemplate both competence-competency contexts at the same time. Secondly, the holistic competence view considers SME-level competencies both from an individual and firm-level perspective, regardless of an individual's position in a firm. Thirdly, the holistic view of competencies means a business continuity approach covering a situation where a firm considers changing its business to another field of industry, and thus needs to evaluate its competencies towards this change. The competencies are examined internally firstly to identify which competencies the SMEs already have or do not have. Secondly, to identify the competencies related to the external environments, which are needed to face and meet the demands of the changed situations. With well-recognised internal competencies, SMEs may develop existing competencies and acquire new ones to respond to the needs of external situations and business environment changes.

The main research question is:

How do specific competencies enable SMEs to survive changes in their business environments?

The main research question has separate endorsing sub-questions, which take into consideration the long-term continuity of the business. The sub-questions assist by providing the answers to the main research question, and additionally aid in forming a holistic view of the competencies an SME needs to face external changes operationally. To offer a comprehensive point of view the continuity of business operations, the sub-questions also consider the situation where either the firm stays in the same field of industry or renews its business and moves to another industry. The research questions are answered by the results presented in five publications included in the structure of the dissertation in Part II. Part I combines the results and continues the discussion related to the research questions. The sub-research questions are:

SQ1. What specific competencies support SMEs' survival in change situations?

SQ2. How are competencies transformed as a consequence of internal or external changes?

SQ3. What competencies enable SMEs to make a transfer to other industries and operate successfully in these industries?

Figure 1 below presents how the five publications are included and the research questions are positioned in this thesis. It also presents the contents of the publications related to the research questions of the thesis. The stars provide information on the contribution made by the research questions

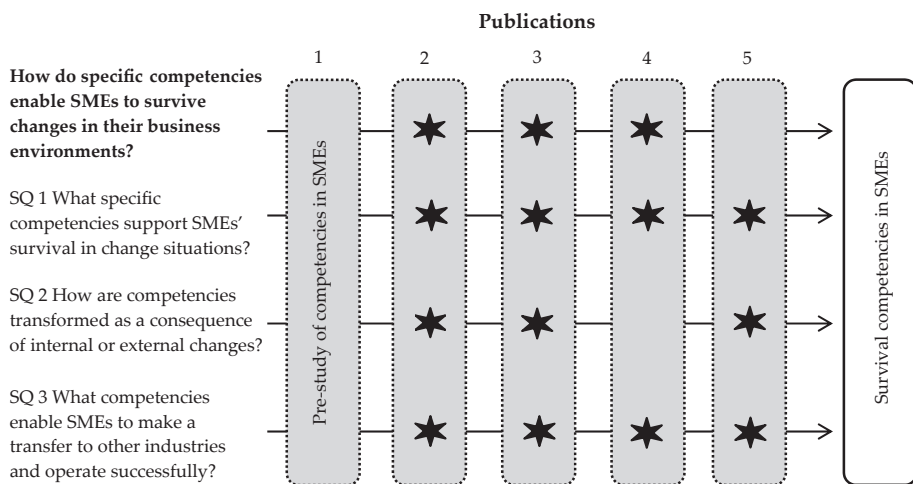


Figure 1. Contribution of the publications to the research questions.

and the publications. Publication 1 is a pre-study offering a literature overview of what kind of competencies and competence needs are identified in SMEs in general. It highlights managerial and individual generic competencies, individual capital in social contexts and relationships, and competencies for the future in the form of research results. Publication 1 serves as an introduction to the competence theme in SMEs, and forms a basis for various competencies and their transformations. Publication 2 deepens the thesis objective by focusing on survival competencies, e.g. internal and networking competencies enabling Russian SMEs to conduct business in change situations. The third publication compares survival competencies between Finnish and Russian SMEs, and thus offers comparative information for the main research question. Additionally, it gives information on the second sub-question identifying how competencies are transformed as a consequence of changes. Publication 4, more specifically, focuses on entrepreneurial competencies identified in successful innovative Finnish SMEs in order to deepen and strengthen the point of view of entrepreneurial competencies as a survival issue. Finally, Publication 5 illustrates the perceptions of Finnish public actors and SMEs concerning business supporting competencies and competence transformation in business environment changes. Thus Publication 5 focuses on providing information on competence transformation while also dealing with the other sub-questions, as have all the other publications.

1.4 Positioning the research

The positioning is divided into two approaches; the theoretical and empirical environment positioning. The theoretical positioning starts from the assumption in the Schumpeterian innovation theory (Schumpeter, 1934) of how economic structures are reshaped. At the same time, within reshaping, new knowledge and information are released, and therefore new business possibilities for entrepreneurs emerge. These new business opportunities are discovered, exploited and executed for new products and services by entrepreneurs within the entrepreneurial process (Shane, 2003). The main focus of this study is to explore and describe the effects of competencies on business survival and continuity. The Schumpeterian innovation theory and entrepreneurship /entrepreneurial processes of Shane, create a background framework for the theoretical positioning, where competencies are at the centre. The study combines results from previous literature on business supporting competence and empirical SME findings on firms that have achieved business survival and continuity. While previous studies focused on separate supporting skills and competencies, the novelty of the study is in introducing the aspect of holistic, SME-level, business continuity and supporting competencies.

The empirical environment focuses on the changing business and economic environment in the forest industry or industries related to it. The studied entrepreneurship and reactions in entrepreneurial processes are limited to Finnish and Russian SMEs, and the observation of competencies is focused on competencies in micro, small, and medium-sized firms. The theoretical and empirical positioning is illustrated in Figure 2 below.

Due to the wide and complex approaches to competence and competencies, all human features, skills, abilities, capabilities, experiences, attitudes, and other traits, which influence SMEs operations, regardless of the position of the person, are used as elements of competence. Furthermore, in the text the word *competence* is used, in plural *competencies*, in order to portray a holistic view of skill-based competence and behaviour-based competency (see Section 2.2.1), and thus to harmonise and clarify the separate usage of the words competence-competences and competency-competencies. In original references, the spelling applied by the authors is used.

The dissertation perceives business continuity on a general level, without noticing turnovers, financing, debts, or other economic business indicators. The financial and economic indicators were excluded because the study does not measure how financially successful the survival has been, but focuses on investigating the effects of competencies related to changes in the business

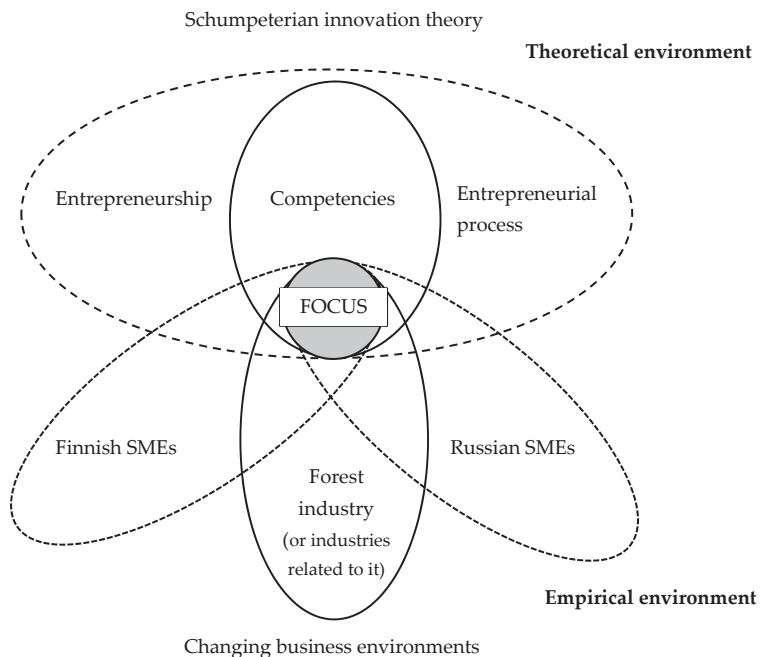


Figure 2. *The theoretical and empirical positioning of the thesis.*

environment. Additionally, the connection between survival enabling competencies and finance issues would be difficult to justify, because a firm's output depends on various factors, e.g. markets, support, finance and policies in its ecosystem (Mason and Brown, 2014). The business continuity and longevity is taken into account in the data collection when selecting the data.

High-income countries, such as Germany, France, Belgium, Italy and Finland, have relatively low levels of entrepreneurial activity (Acs et al., 2008). In Russia, private entrepreneurship has been possible since 1991, so it is relevant to study SMEs in low-entrepreneurial countries such as Finland (low level of entrepreneurial activity) and Russia (private entrepreneurship permissible since 1991). The forest industry is an important and common denominator for both countries' economies. Within this context, cultural aspects may have a certain role in the choice of competencies that enable survival and the business processes related to changed situations. Nevertheless, the thesis excludes cultural aspects, as it would require a separate focus and research design.

1.5 Structure of the thesis

The thesis consists of two distinct parts: Part I provides an overview of the thesis, and Part II includes five individual publications, which describe the research conducted in closer detail. Figure 3 below, describes the structure of the thesis through an input-output scheme for each of the sections of Part I. Section I includes an overall view of the thesis, introducing the background, motivations, and identified research gap as well as the objective and research questions covered. Additionally, Section 1 presents the theoretical and empirical positioning of the study. Section 2 illustrates the theoretical aspects of the thesis such as the Schumpeterian innovation theory, the entrepreneurial processes and competencies, and moreover, focuses on entrepreneurship and SMEs in Finland and Russia. Section 3 presents the methodological approach and empirical data collection. Furthermore, Section 4 introduces the summaries of the individual publications and the answers related to the research questions. Finally, Section 5 discusses the results together with the previous academic research regarding theoretical contributions, as well as the managerial implications, and suggestions for further research. Finally, Part II contains the full length versions of the five publications included.

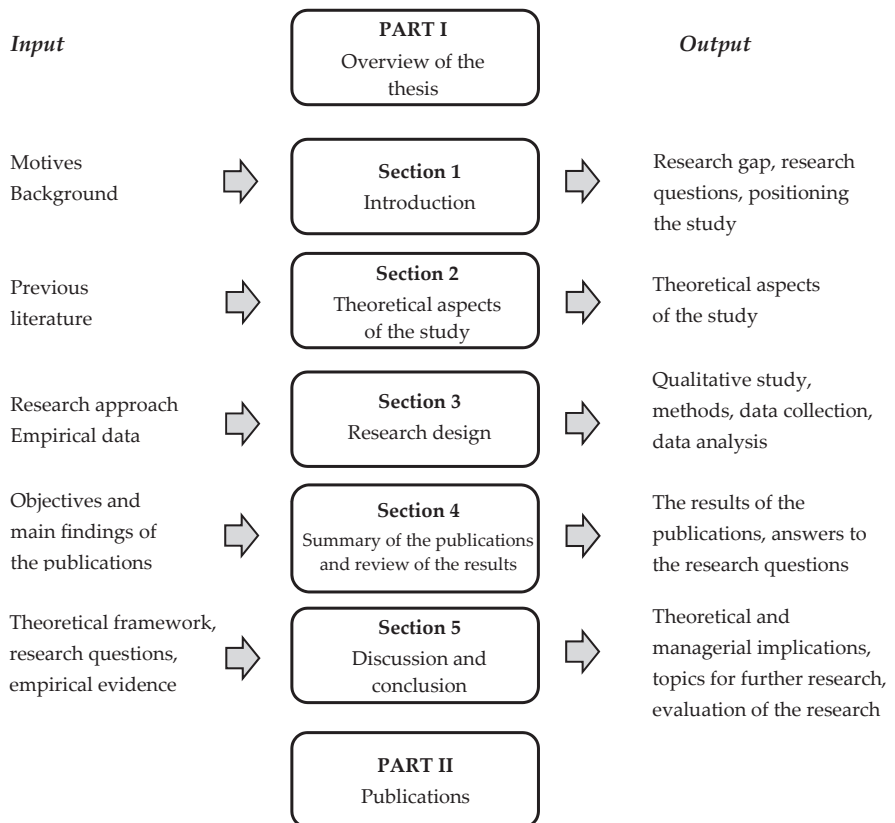


Figure 3. Structure of the thesis.

2. THEORETICAL ASPECTS OF THE STUDY

This section firstly presents general issues related to entrepreneurship and competencies, and secondly expounds on Finnish and Russian SMEs and survival competencies as expressed in literature. The entrepreneurial and competence approaches presented in Figure 4 below represents the structure of the section introducing firstly the Schumpeterian innovation theory as a starting point for generating new business new business possibilities and new knowledge from economic structural changes.

Secondly, this section introduces entrepreneurship and the entrepreneurial process which serve as a framework and a tool, and by which it is possible to illustrate discover, exploit, and execute new business possibilities, and the help survival competencies studied. Finally, competencies as main theoretical focus are highlighted as supporting issues for business continuity. The theoretical approach has been based on the grounded theory concept (Glaser and Strauss, 1967) without a particular theoretical framework. Thus, the study does not primarily concentrate on verifying any given theory or proving theories wrong, but is concerned with how research findings are to be connected to previous theories and results. Theoretical approach has been defined related to business possibilities - according to Schumpeterian innovation theory - and their implementation process - according to entrepreneurial process - but competencies in SMEs have been approached following grounded theory.

2.1 Entrepreneurial approach

The entrepreneurial approach briefly presents Schumpeterian innovation theory and the entrepreneurial process in order to present a framework where survival competencies can be examined.

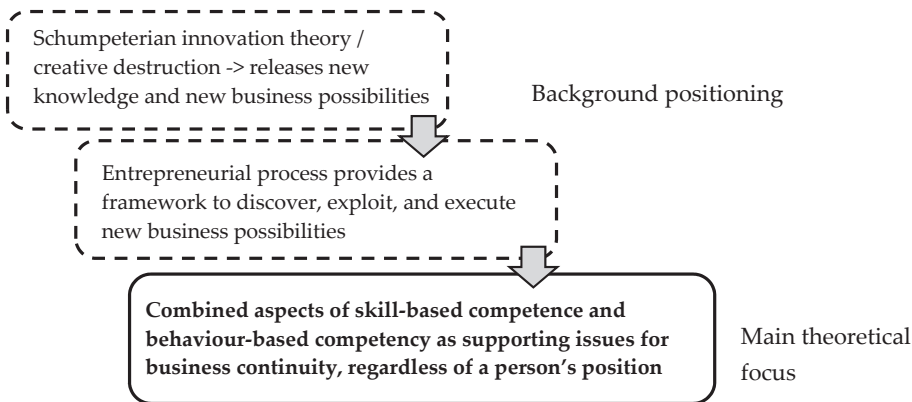


Figure 4. Entrepreneurial and competence approach in the thesis.

2.1.1 Schumpeterian innovation theory

Joseph Schumpeter (1934) introduced an economic term ‘creative destruction’, which means how the structures of economy, old companies, products, and occupations disappear and are replaced by new, better, and profitable ones (Schumpeter, 1934). In creative destruction an entrepreneur introduces onto the market an innovation (product or service), which increases the overall demand in this market, and also, at the same time, gains markets from former dominant suppliers. The firm introduces a new innovation to the markets, expands its economic actions, and thus achieves more market share. Simultaneously, the market structures are destroyed, and will be destroyed once more, when next the new firms and new innovations substitute the former ones. On the one hand former structures, old technologies, and jobs are destroyed, but on the other, new innovations supply new business opportunities and create new jobs in the firms exploiting these opportunities (Aghion and Howitt, 2009). Because of this quality of creating new innovations and new jobs, and at the same time destroying existing jobs, ‘creative destruction’ is also called ‘destructive creation’ (Maliranta et al., 2010). Schumpeter himself was aware of the job reducing influence of his innovation theory, as were other researchers, who also expressed criticism towards this aspect of his theory by regarding it from a capitalist process perspective (Solo, 1951).

The imbalance in markets and economic structures offers new information and new knowledge, and thus offers new opportunities for entrepreneurs. Imbalanced circumstances often follow each other, and unstable situations generate different types of opportunities i.e. new opportunities open up and existing opportunities close down (Schumpeter, 1934). Schumpeterian entrepreneurial opportunities are rare, innovative, and break away from existing knowledge (Shane, 2003: 21). The sources of opportunities can be found in technological changes, in political and regulatory changes, and in social and demographic changes (Schumpeter, 1934). In the last decades, for example, digitalisation has produced an enormous step in technology; the green wave with sustainable energy has rewritten many laws and regulations, and as a result of ageing populations many countries are now investigating new welfare services for elderly people. Schumpeter defined the types of innovations in his era as being revolutionary, but gave little attention to small upgrades and updates. Since the 1990s, several researchers have elaborated on the innovation definition by using more categories based on innovation proportions (e.g. Freeman, 1992; Perez, 2010), and thus have broadened the content of innovation.

New entrepreneurial opportunities become innovations, if opportunities are discovered, exploited, and executed by utilising those people, called entrepreneurs. The next section is therefore concentrated on this utilising process – entrepreneurial process, and utilising entrepreneurs.

2.1.2 Entrepreneurial process and entrepreneurship

Entrepreneurs were first mentioned in literature in the 1730s by Richard Cantillon (Brewer, 1992), who called entrepreneurs brokers with the meaning 'to take between, go-between', a person who was a rational decision maker, a risk taker, and management provider for a firm (Kilby, 1991). At the end of 1990s, researchers shifted their attention away from identifying those people in society who preferred to become entrepreneurs towards an understanding of the nexus of valuable opportunities and enterprising people (Venkataraman, 1997). Furthermore, studies in the 2000s have redefined the focus from opportunity identification to opportunity development (Ardichvili et al., 2003; Corbett, 2007; Vaghely and Julien, 2010), and thus focus on entrepreneurial actions instead of the enterprising individuals.

Venkataraman (1997) and Shane and Venkataraman (2000) have defined entrepreneurship to be an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organising, markets, processes, and raw materials through efforts that previously had not existed. The comprehensive definition is illustrated in the entrepreneurial process (Shane, 2003, see Figure 5 below), where potential new entrepreneurial opportunities arise from changing business environments, from industries, and from the macro environment. An alert individual, an entrepreneur, with her/his psychological and demographic factors discovers the existence of opportunities or situations, develops ideas of how to pursue them, and exploits and executes these ideas into profitable innovations. Alongside individual attributes, the external environment, the industry in question and the current macro-environment, influences the

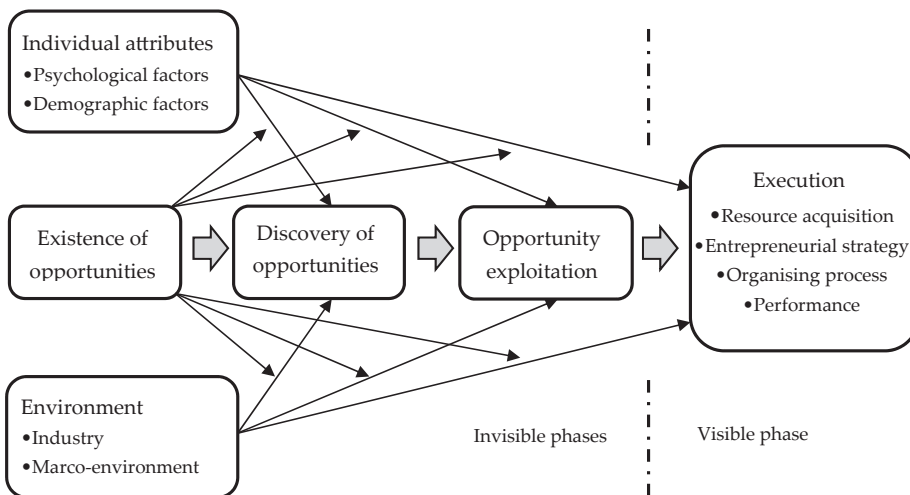


Figure 5. A model of the entrepreneurial process (modified Shane, 2003: 11, 12).

discovery of the opportunity as well as its exploitation and furthermore its execution – that is – its innovation. Because business opportunities are various and ubiquitous, their existence has a direct influence on the discovery, exploitation, and execution phases via the individual's attributes and environment. The first three phases (existence of opportunity, to discover opportunity and to exploit opportunity) in the entrepreneurial process are invisible to the external environment because in those phases an entrepreneur considers whether to proceed or not. In contrast, the execution phase is visible and observable externally. Although creative entrepreneurs recognise and discover opportunities, not all opportunities are exploited and executed because firms at different business stages may consider opportunity exploitation and execution in different ways. Start-up entrepreneurs must consider all the execution issues (resource acquisition, entrepreneurial strategy, and the organising process) in order to achieve successful performance when attempting to penetrate markets. Respectively, existing firms may have already acquired physical and human resources and have experience in the markets, but may be suffering from lack of finance and resources for growth, and thus need to carefully consider progressing further with an implementation. Furthermore, in the exploitation and execution phases an entrepreneur also needs to consider a suitable business model to achieve a successful value creation and/or competitive advantage. For example, open or boundary-spanning business models (Chesbrough, 2006; Wikström et al., 2011) are concerned with how firms interact with their business environment.

Selecting and identifying the right opportunities are the most important abilities of an entrepreneur (Stevenson et al., 1985). Additionally, entrepreneurial opportunities are generated by the locus of the changes, by the initiator of the change, and by the source of opportunities themselves (Eckhardt and Shane, 2003). Furthermore, entrepreneurial traits (Buzenitz, 1996; von Hippel, 1994; Kirzner, 1973; Shane, 1999) impact on the opportunity identification process (see e.g. Ardichvili et al., 2003). The literature conjoins some specific features such as the individual attributes (see Figure 5) of the executors of entrepreneurial opportunities – are the entrepreneurs. The successful features of an entrepreneur are widely described in literature using the trait approach (De Koning and Muzyka, 1999; Krueger and Dickson, 1994; Shaver and Scott, 1991), and by the alternative behaviour-based approach focusing on what the entrepreneur does instead of who the entrepreneur is (Gartner, 1988). This study focuses on entrepreneur-like features to the extent that features are connected to an individual's competencies focusing on successful and long-term operations, and thus a closer examination of entrepreneurial trait theories is excluded. Nevertheless, this study examines survival enabling competencies regardless of a person's position in a firm, and therefore Gartner's entrepreneurial statement (1988) related to the behaviour-based approach - what the entrepreneur does – corresponds with

the study approach. Some common personal qualities and characteristics can be connected to entrepreneurship; self-confidence, risk-taking, flexibility, need to achieve, a strong desire to be independent, an internal locus of control and innovativeness (Chell et al., 1991; McClelland, 1961; Meredith et al., 1982). However, the features do not automatically mean that someone will become an entrepreneur exploiting successful business opportunities.

Entrepreneurs as individuals are multifaceted in their skills and competencies. In practice, entrepreneurs are seen as jacks-of-all-trades who do not have only one skill, but are competent in many. Thus, entrepreneurs are not necessarily outstanding at anything, but they have sufficient skills in various areas to put together many ingredients, which are required in a successful business (Lazear, 2003). Recent literature takes note of the ability to learn entrepreneurship and the competencies it demands as a changing attribute rather than a stable state. In a changing business environment, creativity (Block and Koellinger, 2009; Finkle, 2013), opportunity recognition (Baron et al., 2012; Renko et al., 2012), and marketing orientation (Knotts et al., 2008; Ripollés et al., 2012) seem to determine the limits of a successful entrepreneur. The next section investigates the influence of competencies in business success in more detail.

2.2 Competence and competencies

In the 2000s, changes in business have occurred more rapidly than in previous centuries, and the frequency of change is high. Nowadays, firms must be fast, flexible, and agile in their actions to survive in these environmental changes. When the business environment changes, competencies are liable to change as well. Therefore, it is justified to study *what* competencies are needed and *how* competencies support SMEs in change situations. This is the fundamental basis of this thesis, and thus competencies are considered the most supporting issues for a firm to carry over into change situations. The firm consists of individuals and thus job-based and person-based competencies form the organisations' future-based and value-based competencies. These competencies help organisations to achieve a competitive advantage (Cardy and Selvarajan, 2006; Cardy et al., 2007), and are the individual's contribution to supporting the businesses survival. Furthermore, interpersonal understanding and customer service orientation skills are stressed (Yu-Ting, 2010) as assisting in business survival. In the following, after a brief history of the terms competence – competencies, closer definitions are presented of the use of competence and competencies in literature.

First, the history of the term 'competence' dates from 1596 when it was used to express the combined abilities of an individual to do a job properly (Webster Dictionary, 2015). However, in the 1900s, educational institutes and business organisations have, in general, used the term competence to

refer to educational methods and human resource management in the field of recruiting and selecting new employees. The term ‘competency’, in turn, was introduced by David McClelland in 1973 and he used it primarily as a criterion of assessment in the higher education system. McClelland (1973) focused on measuring successful performance, instead of the intelligence and personality tests used earlier, and thus a discussion was initiated that a competence assessment should be developed as an alternative to these tests. Moreover, in the 1990s, as a part of the competence movement (see Barrett and Depinet, 1991), competency was defined as the underlying characteristics of successful performers, and included knowledge, skills, traits, abilities, or beliefs, which were seen to be the features of competency (Rothwell, 1996: 263). Together with this movement towards competence, the concepts of competence and competencies often became to be used synonymously and thus it is necessary to study the various definitions of these terms.

2.2.1 The definitions of competence and competencies

First of all, there is no exact theoretical framework for competence (Stoof et al., 2002), and it has been seen as a fuzzy concept (Delamare-Le Deist and Winterton, 2005). Moreover, the words competence or competency are sometimes presented in literature interchangeably and identified differently by various authors, and with various meanings. The terms skills, experience, acumen, and competency are all connected with each other (Smith and Morse, 2005). However, the term ‘competence’ is mostly identified as a skill-based standard that is acquired, and is what people can do. ‘Competency’, in turn, is behaviour-based, i.e. the actions by which the performance is achieved, and focuses on how people do things (Delamare-Le Deist and Winterton, 2005; Sanghi, 2007). Figure 6 below presents a competence and competency interface, according to Sanghi (2007: 8) which connects both terms and represents them as acting with each other through interaction and integration. Referring to Figure 6, competence seems to be stable by nature, and competency, in turn, seems to reflect action.

Competence is commonly used in educational training and development activities within human resource development (HRD) or for acquiring new

Competence		Competency
Skill-based	➔	Behaviour-based
Standard of attained		Manner of behaviour
What is measured	➔	How the standard is achieved

Figure 6. Competence – competency interface (Sanghi, 2007: 8).

educational methods based on a country's educational and vocational policies (Biemans et al., 2004; Brockman et al., 2008; Colley et al., 2003; Mulder et al., 2007; Weigel and Collins, 2007; Winterton et al., 2005). The competence-based approach in HRD and in vocational education and training (VET) generates a generic competence approach, and focuses on improving the skills and qualifications of the labour force. The OECD targets, with its Strategic Approach to Skills Policies, better skills, better jobs, and better lives in order to help countries understand more about how to invest in skills in a way that will transform lives and drive economies (OECD, 2012; 3). Moreover, Boon and van der Klink (2003) describe competence as a useful term for 'bridging the gap between education and job requirements'. Hodkinson and Issitt (1995: 149) have argued for professional holistic approaches because competence resides within individuals who care about their professions and is achieved by integrating knowledge, understanding, values, and skills. Additionally, Keen (1992; 115) stated that competence is an ability to handle a situation (even an unforeseen one) and uses the hand as a metaphor for competence; competence is a compound of five different parts like the fingers of the hand; skills, knowledge, experience, contacts, and values (Keen, 1992: 112). Cheetham and Chivers (1996, 1998), in turn, include five inter-connected competence and competencies in their professional competence, such as cognitive competence, functional competence, personal competency, ethical competencies and meta-competencies (Cheetham and Chivers, 1996, 1998). As presented above, competence can be defined in multiple ways and can include specific elements that serve public educational policies as well as determine the professional competence required to face the different demands of societies and jobs. In the following, the definition of the term competency is presented.

Spencer and Spencer (1993) linked 'competency' to those deep personality characteristics of an individual by which behaviour and performance can be predicted. They presented five competency characteristics: motives, traits, self-concept, knowledge, and skills. These were presented in an iceberg model, where skills and knowledge are the visible competencies most easily developed. The hidden competencies, such as traits and motive are the most difficult to develop, while self-concepts, attitudes, and values are in the middle area (Spencer and Spencer, 1993). Burgoyne (1993) approached competency from a functional perspective and defined competency as how the goals of organisations were best achieved by improving individual performances. The performance aspect of an individual's competency is also described by Boyatzis (1982) and Klemp (1980) who stated that 'job competency' included those underlying characteristics of a person which resulted in superior and/or effective performance in a job. Hoffmann (1999), in turn, has summarised three key points for competency: the underlying qualification and attributes of a person, observable behaviours, and the standard of individual performance outcomes. On an

individual level, the most important competencies are analytic skills, interpersonal skills, ability to execute, information processing, and capacity for change/learning (Finegold and Notabartolo, 2010).

When summarising the definitions of the terms, competence and competency, it can be said that both focus on the same issue but with variable aspects; those attributes individuals need to possess in order to be competent, and how to operate competently. As the current dissertation focuses on competencies enabling business survival in changes – demanding both specific skills and professional elements, and the abilities to achieve survival performance - it will be relevant to combine the content and terminology of skill-based competence and behaviour-based competency. The framework of Parry (1996) combines these terms and is therefore used as a suitable basis for the dissertation. Additionally, in order to reach a comprehensive approach to competence Parry's (1996) definition is modified, and thus contains: *human features, skills, abilities, capabilities, experiences, attitudes, and other traits*. Because of the various terms, in the text, the combined definition is entitled 'competence' and in the plural 'competencies':

*“Competence/competencies are a cluster of related **human features, skills, abilities, capabilities, experiences, attitudes, and other traits** that affect a major part of one's job (a role or responsibility), that correlate with performance on the job, that can be measured against well-accepted standards, and that be improved via training and development (modified from Parry, 1996: 50).”*

This definition by Parry (1996) indicates that competence is not a stable entity, and competencies can be improved if needed. The observation of the flexible nature of competence is significant in a changing business environment; as it follows that when the situation changes, competencies must change as well. Because of the independent role of specific jobs, this definition treats the individuals in firms in the same way regardless of the position of a person. After these definitions of competence, the study will next illustrate how competencies influence business.

2.2.2 The role of competencies in business

In a review of various management theories, it was found that in the 1980s, management researchers discussed a cluster of resources, and in the 1990s, the competencies of organisations became the key to strategic management thinking. Competencies were strategically targeted and developed on order to create competitive advantage and value creation success in the market. Prahalad and Hamel (1990) introduced core competencies in 1990, and turned from the specific competencies of an individual's work to the higher level of organisational competence, and to business units. To achieve competitive advantage both employee-level and organisational-level competencies have since been seen to be important (Hitt et al., 2005). Core competencies, specific sets of skills or production techniques, are not easy to imitate; with core

competencies a company may create and deliver value to its customers (Prahalad and Hamel, 1990) and thus competitive advantage. Core competencies provide a conceptual tool for large business corporations to achieve better synergies in their various functions. Core competencies are at the centre of the resource-based view (RBV), first introduced by Edith Penrose (Penrose, 1959), in which corporate competence is based on a bundle of valuable tangible or intangible resources and capabilities which offer a competitive advantage. Using this criterion, key resources are considered valuable, rare, inimitable and cannot be substituted (Amit and Schoemaker, 1993; Barney, 1991; Collis and Montgomery, 1995; Peteraf, 1993; Stalk et al., 1992).

When taking a closer view of management theories, the knowledge-based view (KBV) – one of the theoretical spin-offs from RBV – stresses knowledge as the most strategically significant resource of a firm. KBV provides competitive advantage and superior corporate performance (Alavi and Leidner, 2001; Grant, 1996) through the knowledge, which is embedded and carried through multiple organisational routines, policies, and employees. Another extension of RBV are dynamic capabilities. Teece et al. (1997) defined dynamic capabilities as ‘the firm’s ability to integrate, build, and reconfigure internal and external competences in order to rapidly address changing environments (Teece et al., 1997; 516). By using dynamic capabilities an organisation can purposefully create, extend, and modify its resource base in order to survive and prosper in changing conditions (Helfat et al., 2007). At the same time as KBV was introduced in the 1990s, the competence-based view (CBV) approach was also introduced to explain performance differences among firms (Rumelt, 1991).

As a summary of these various management theories, it can be concluded that competencies within and through different units and bundles, make it possible for companies to achieve competitive advantage and value creation success in the market. Referring to the theme of the dissertation, management theories support the basic statement of the thesis that competencies have a significant role in business survival. Therefore, the generic types of competencies connected with business are presented next. The following section focuses on generic competencies that support business, and is therefore entitled competencies supporting business.

2.2.3 Generic competencies supporting business

In firms, there exist various business enabling competencies at different levels. Firstly, individual competencies (see e.g. Cheetham and Chivers, 1996, 1998; Hodkinson and Issitt, 1995; Keen, 1992; Spencer and Spencer, 1993) substantially influence a firm’s performance (see Klemp, 1980; Boyatzis, 1982; Burgoyne, 1993).

Secondly, organisational competencies are built up from the individual competencies of all the competencies of the firm’s employees, including the

management, project teams, and project managers (Nurach et al., 2012).

Referring to the research environment of the dissertation, in SMEs the competencies are limited due to the limited number of employees (see more of SMEs in Section 2.3.1). Every individual's competencies are truly significant and the entrepreneur is usually involved in the productive actions, thus all individual competencies are highly necessary. In SMEs the organisational structures are low and the hierarchy flat. If the delivery process is short, e.g. in the service field, individual skills, knowledge, attitudes, motivations, and traits are stressed and have an effect on all of the firm's performances. Thus the firm's performance is a result of all of the competencies of the individuals and the small groups. According to Teece et al. (1997) organisational competencies are seen as firm-specific assets assembled in integrated clusters formed by individuals and groups, so that they facilitate the performance of distinctive activities that constitute organisational routines. Sanchez's five modes of organisational competence highlight the firm's value-creating processes, which are developed and maintained in its various activities to achieve overall competence, and thus to achieve a better market position (Sanchez, 2004). Furthermore, corporate competencies belong to the organisation, and are embedded in processes and structures that tend to reside within the organisation (Turner and Crawford, 1994). Thus, as a result of a comprehensive approach towards organisational competencies, individual competencies are built up and together they form the firm's performance which is embedded in processes and structures. Although Sanchez (2004) only focuses on achieving market positions, it is possible to achieve any desired goal with developed and maintained organisational competencies in general.

Thirdly, capable management (Sanchez, 2004) develops, utilises, and manages organisational competencies by using individual managerial competencies. With managerial competencies capable managers can create, communicate, and empower the firm's employees to realise the organisation's strategic vision (Hambrick and Mason, 1984). Lado et al. (1992) describe managerial competences as crucial, because with them the firms are able to develop other competencies. As a whole, managerial competencies can thus be considered as the internal strength of an organisation, which, in turn, assists the business survival.

Fourthly, from the point of view of the entrepreneurial process, entrepreneurial competencies are crucial, and are the basis of a firm's existence (Shane, 2003). With entrepreneurial competencies entrepreneurs can scan and discover business opportunities from different sources, acquire the resources demanded for the realisation of the opportunity, and successfully and increasingly take risks as regards the firm's future (Gibb, 2005; Man and Lau, 2005) in order to keep it alive in the long term. Because of the important role of entrepreneurial competencies in SMEs' success, the issue is studied further in the following.

The discussion concerning key entrepreneurial skills in order to succeed in

business started in the 1980s. The issue was presented with regard to the various psychological features of firm managers and the firms' end results. Gartner (1988) channelled the focus onto the decisions and actions of the entrepreneurs, and in 1992, Chandler and Jansen provided 21 skills categorising entrepreneurial competencies in three main blocks: entrepreneurial skills, managerial skills, and technical-functional skills (Chandler and Jansen, 1992). Bird (1995) defined entrepreneurial competencies as being positioned in separate venture phases: "underlying characteristics such as generic specific knowledge, motives, traits, self-images, social roles, and skills which result in venture birth, survival, and/or growth" (Bird, 1995: 15). Some authors connect entrepreneurial competencies with a firm's starting phase, and the managerial skills generally used and needed in the growth phase, or in both areas (Man et al., 2002).

In the light of the dissertation and its focus on SMEs, entrepreneurial competencies have a very close connection with entrepreneurship, and especially in small and new businesses (e.g. Colombo and Grilli, 2005; Nuthall, 2006). Additionally, the relationship between entrepreneurial skills and the firms' end result i.e. business growth, competitiveness, success, and performance are interrelated (Colomdo and Grilli, 2005; Davidsson, 2006; Man et al., 2002). More specifically, Mitchelmore and Rowley (2010) included the following entrepreneurial competencies as mega competencies: entrepreneurial, business and management, human relationships, and conceptual and relationship competencies. For clarity, they presented entrepreneurial competencies as a first sub-category, which included competencies focusing on identifying, for example, new business opportunities in markets, environmental scanning and idea generation (see Mitchelmore and Rowley, 2010). Loué and Baronet (2012) discussed entrepreneurial competencies consisting of the following: opportunity recognition, opportunity exploitation, financial management, human resources management, marketing and commercial activities, leadership, self-discipline, marketing and monitoring, and intuition and vision. All these extensive competencies are therefore founded on opportunity and environmental change recognition, and furthermore, their realisation in practice as business functions.

Additionally, Iandoli et al. (2007) comprehensively define entrepreneurial competence as 'the capability of entrepreneurs to face effectively a critical situation by making sense of environmental constraints and by activating relational and internal specific resources' (Iandoli et al., 2007: 17). As the combined entrepreneurial competencies above focus on the future (Baronet and Loué, 2012; Mitchelmore and Rowley, 2010), they can thus be defined as 'future competencies'. Such competencies include idea generation, opportunity identification, environmental scanning, possible opportunity positions in markets, and a means of attaining a life cycle continuity for a business. Additionally, according to Iandoli (2007), it is the active resources of entrepreneurs, which Mitchelmore and Rowley (2010) have connected to managerial competencies, which secure the continuity of the existing business. Thus, there is a partial overlap

between those competencies focusing on the future and those competencies securing every-day business. To clearly separate both of these meanings, the thesis compresses entrepreneurial competencies into including all competencies focusing on the business future and possible new opportunities, and managerial competencies into containing all the competencies dealing with the existing business – that is to say – the running of the firm.

As a summary, Table 1 below brings together the generic competencies supporting business that are presented in the literature with their authors, and the definitions/features of these competencies. Furthermore, the following Table 2 can be seen as bringing together the definitions/components of

Table 1. Generic competencies supporting business as presented in the literature

Type of competencies	Authors	Definition/components of competencies
Individual, professional	Sanghi, 2007	Competence: skilled-based, standard of attained, what is measured; Competency: behaviour-based, manner of behaviour, how the standard is achieved
	Keen, 1992	Competence hand model: skills, knowledge, experience, contacts and values
	Spencer and Spencer, 1993	Competency iceberg model: motives, traits, self-concept, knowledge and skill
	Burgoyne, 1993	Competency from functional perspective: the goals of organisations are best to achieve by improving individual's performance
	Boyatzis, 1982 Klemp, 1980	Job competency: underlying characteristics of a person result in superior and/or effective performance in a job
	Hoffmann, 1999	Competency: underlying qualification and attributes of a person, observable behaviours, and standard of individual performance outcomes
	Finegold and Notabartolo, 2010	Analytic skills, interpersonal skills, ability to execute, information processing and capacity for change/learning
	Hodkinson and Issitt, 1995	Professional competence: professions integrating knowledge, understanding, values and skills
	Cheetham and Chivers, 1996, 1998	Professional competence: cognitive competence, functional competence, personal competency, ethical competencies and meta-competencies

Type of competencies	Authors	Definition/components of competencies
Organisational	Nurach et al., 2012	Organisational competencies are built up by individual competencies
	Teece et al., 1997	Organisational competencies are firm-specific assets assembled in integrated clusters, formed by individuals and groups, facilitating the performance of firms
	Sanchez, 2004	Organisational competence is formed of five modes of firm's value-creating processes developing and maintaining in a firm various activities to achieve overall competence
	Turner and Crawford, 1994	Corporate competencies belong to the organisation, and are embedded processes and structures that tend to reside within it
Managerial	Sanchez, 2004	Capable management development, utilise and manage organisational competencies
	Lado et al., 1992	Managerial competencies as crucial for firms to be able to develop other competencies
	Mitchelmore and Rowley, 2010	Contains business and management competencies, human resource competencies and conceptual and relationship competencies
	Loué and Baronet, 2012	Contains financial management; human resources management; marketing and commercial activities; leadership; self-discipline; marketing and monitoring
Entrepreneurial	Shane, 2003	Entrepreneurial competencies are crucial from the point of view of entrepreneurial process
	Chandler and Jansen, 1992	Combination of entrepreneurial skills, managerial skills and technical-functional skills
	Mitchelmore and Rowley, 2010	Contains competencies focusing on the future (identify e.g. new business opportunities in markets, environmental scanning and idea generation)
	Loué and Baronet, 2012	Contains competencies focusing on the future: opportunity recognition and exploitation; intuition and vision

Table 2. Definitions of competencies applied in this thesis

Type of competence	Definition / components
Competence, competencies (modified Parry, 1996: 50)	Competence/competencies are a cluster of all related human features, skills, abilities, capabilities, experiences, attitudes, and other traits that affect a major part of one's job (a role or responsibility), that correlate with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development (Parry, 1996: 50). People in firms are considered regardless of the position of the person.
Organisational competencies	Organisational competencies are built up by individual competencies; they form together a firm's performance embedded in processes and structures, and by developing and maintaining organisational competencies it is possible to achieve any desired goal.
Managerial competencies	Managerial competencies (existing leading business competencies) are developed, utilised and managed by capable managers; they are the internal strength of an organisation, and contain all competencies influencing existing business, and assisting its survival.
Entrepreneurial competencies	Entrepreneurial competencies (idea generation, opportunity identification, environmental scanning, and possible opportunity position on markets) include all competencies focusing on the businesses future and possible new opportunities.

the competencies applied in this thesis.

After describing the entrepreneurial and competence approach in general, the next section presents the more specific content of the dissertation: SMEs and the competencies enabling business survival as described in the literature.

2.3 SMEs and their business survival by competencies

This section focuses on informing the reader about Finnish and Russian SMEs, their impacts on societies, the general features of an SME, and their survival components introduced in the literature. Earlier in Section 2.2.3 generic business supporting competencies were presented, however, this section focuses especially on those studies considering the survival components for business in SMEs.

2.3.1 Micro, small and medium-sized enterprises

Micro, small, and medium-sized enterprises create the basis of the economy in nearly every country. The impact of SMEs is crucial for the EU's economy; 23 million SMEs account for 99 % of all companies in EU countries and employ about 75 million people. SMEs employ 67 % of the total EU employment and have created 85 % of net new jobs between 2002 and 2010 in the EU. (EC, 2014) Despite their obvious significant impact on the economy this observation about their importance is quite new. The importance of SMEs for the economy received broader awareness after David Birch's research (1979) implied that small firms had been the prime source of employment creation in the United States in the early 1970s, and had created over 80 % of net new jobs. After Birch's study (1979), the general economic mind-set also changed. Thus instead of the former belief that small businesses had a minority influence on economic growth and jobs creation, it was recognised that it was as strong as that previously held to be true for large business. In the 2000s, the industrial and economic changes have considerably altered employment and SMEs have become even more important job creators. In Finland in 2001-2010, large enterprises have been reduced by an average of 300 jobs, while SMEs, in comparison, have employed 77 000 more employees in the same period (Routamaa, 2013). Additionally, the impact of SMEs can be recognised by the simple fact that all large companies were once small.

The EU definition of micro-, small- and medium-sized enterprises (EC, 2014b), which is used in Finland, is presented in Table 3 below. The definition separates various firms based on the number of employees, the size of turnover, or on the balance sheet. In Finland, there were altogether 322 184 enterprises, of which 99.8 % were micro, small or medium-sized in 2012. SMEs employed 64 % of the total employment, which in practice means 1.5 million employees of a total of about 2.4 million employees (Statistics Finland, 2015). The share of SMEs contribution to the total GDP was over 40 %. (Statistics Finland, 2012) Thus the impact of SMEs is significant for the Finnish economy, especially from the perspective of their considerable job-creating influence.

Table 3. Definition of SMEs in EU, in euros (EC, 2014)

Company category	Number of employees	Turnover or	Balance Sheet Total
Medium-sized	< 250	≤ 50 mln euros	≤ 43 mln euros
Small	< 50	≤ 10 mln euros	≤ 10 mln euros
Micro	< 10	≤ 2 mln euros	≤ 2 mln euros

In Russia, the polity changed in 1991, when the Soviet Union collapsed and the Russian Federation was formed. The economic situation also changed after the polity change. During the Soviet Union period, private entrepreneurship was prohibited in Russia, but after the polity change in 1991, the need for a definition of SMEs appeared. Russian SMEs are hence defined according to a law adopted in 2007 (European Investment Bank, 2013: 6; Federal law #209-FZ, 2007) presented in Table 4 below. There are some differences between the EU and the Russian definitions. In the Russian defini-

Table 4. Definition of SMEs in Russia, using turnover in euros (European Investment Bank, 2013: 6; Federal law #209-FZ, 2007)

Company category	Employees	Turnover
Medium-sized	< 250	≤ 25 mln euros
Small	< 100	≤ 10 mln euros
Micro	< 15	< 1,5 mln euros

tion, the category of the employees and the turnover are similar in both.

At the beginning of 2013, there were over 6 million SMEs (OECD, 2014) in Russia. These SMEs employed 23 % of the total employment, which in practice means 16.1 million people. The SMEs' share of the GDP was estimated at 20-25 %, and the development of the SME segment is now one of the key factors in the sustainable economic development of Russia. (European Investment Bank, 2013) The membership to the WTO obtained in 2012, and the expected increase of SMEs to 30 % of the GDP (OPORA Russia, 2011) by 2020, indicates the growing importance of SMEs for the economy and for the country's competitiveness. This positive development is highly dependent on the political and economic development of the country, as the latest events have made the situation more unstable again.

When illustrating the characteristics of small firms, the definition of the Committee for Economic Development (CED) has stated that there are four features, of which at least two attributes need to be possessed by a small firm:

- o The management of the firm is independent. Usually, the managers are also the owners.
- o The capital is supplied and the ownership is held by an individual

- or a small group.
- o The area of operations is mainly local, with the workers and owners living in one home community. However, the market does not need to be local.
- o The relative size of the firm within its industry must be small when compared with the largest units in the field. This measurement can be in terms of sales volume, number of employees or other significant comparisons. (CED, 1978).

Although the description by the CED is over 30 years old, it forms a proper image of micro, small, and medium-sized firms and their internal and external outcomes. Usually, SMEs are small and have only a few employees, for example in Europe SMEs employ four employees on average (Lukács, 2005). In Finland in 2012, for example, of all the firms over 93 % were micro enterprises (employees under 10) (Statistics Finland, 2012), and in Russia this figure was about 85 % (employees under 15) (European Investment Bank, 2013). When the number of staff is limited, it requires the employees to have sets of skills and competencies to perform multiple tasks. Often the owner is also the manager, who oversees and controls all the business areas (Verhees and Meulenber, 2004). Thus the owners as well as the small group of staff perform the firm's hands-on functions on which the firm's performance relies.

Furthermore, Carson and Cromie (1989) have characterised SMEs through three limitations;

- o Limitation of SME impact (on markets). The limitation of impact means that the SME's production is for local or regional customers, or they are a subcontractor of a large company.
- o Limitation of finance. The lack of finance is generally well known, usually the owner finances the business with assets for which they give their personal property as collateral.
- o Limitation of physical resources. The physical limits stand for the production's estate, machines, and other tangible assets.

Although SMEs have limitations e.g. in financial and technological resources, the advantages are that they have internal flexibility and closeness. Typically, organisations in SMEs are flat. Flat structures refer to the levels of hierarchical management and correspond therefore to the minimal distance between the front-line or entry-level employees and the top management. As well as the flat hierarchy, the structures are additionally non-bureaucratic, which enables direct and flexible decision making and internal actions (Carson et al., 1995; Nooteboom, 1994). The simple and flat struc-

ture provides closeness between the firms as well as between the customers. Straightforward information sharing, good communications and personal relationships are, furthermore, typical of SMEs.

2.3.2 Survival components in SME

As concluded in Section 2.2.3, individual (professional), organisational, managerial and entrepreneurial competencies have a crucial effect on a firm's success and thus they can be argued to be survival competencies. This section endeavours to go more deeply into the competencies and other related issues influencing SMEs' business survival. Individual (professional) and organisational competencies form the basis for each firm, and have been discussed previously (see Section 2.2.3).

Firstly, entrepreneurial competencies and entrepreneurial attributes were highlighted as crucial attributes for success in the entrepreneurial process (Shane, 2003), and therefore were justified as business survival competencies. Entrepreneurial competencies assist the discovery of new business opportunities and thus assist the provision of new business possibilities to be executed if needed. New business possibilities may be based on innovations (see Section 2.1.1) such as new products or services, new geographical markets, new raw materials, new methods of production, or new ways of organising production. To discover new business possibilities some special individual competencies and features are demanded, such as better access to information, and superior cognitive capabilities to capture the opportunities when given the same information as everyone else. As attributes that contribute being able to discover new business possibilities better, the literature presents recent or former job functions (Freeman, 1982; von Hippel, 1986; Klepper and Sleeper, 2001), different experiences (Delmar and Davidsson, 2000; Lazear, 2003; Romanelli and Schoonhoven, 2001), and social networking (Johansson, 2000); these all help with the accessing of new information.

Additionally, in innovation the term is absorptive capacity – the ability to identify, assimilate, transform, and apply valuable external knowledge (Cohen and Levinthal, 1990), promote opportunity discovery (Gray, 2006; Yu, 2001) using knowledge about the markets (Johnson, 1986; Shane, 2000), and finally entrepreneurial talent (Baum et al., 2000; van Praag and Cramer, 2001) and cognitive properties (Gaglio and Katz, 2001; Sarasvathy et al., 1998). Furthermore, innovativeness and creativity (Ardichvili et al., 2003; Poorsoltan, 2012; Stevenson and Jarillo, 1990) are closely linked in entrepreneurship and are elements of entrepreneurial competencies. When a new business opportunity is recognised, an individual needs the capability to make the decision whether to proceed or not. These features such as the capability of risk-taking, determination, motivation, and other individual factors result in the willingness to execute a new venture. When summarised, all the personal features mentioned above are strongly linked to the

features of entrepreneurs, and thus highlight firstly the importance of entrepreneurial competencies, and secondly the importance of specific individual skills and capabilities as survival competencies.

Dynamic capabilities are considered to be useful aptitudes when operating under changing conditions. In the literature, the dynamic capabilities are similar to the organisational competencies that focus on creating and employing the means by which a firm will succeed. Additionally, dynamic capabilities enable an organisation to meet rapidly changing environments (Teece et al., 1997; Teece, 2007) and therefore enable them to survive in these changing environments (Helfat et al., 2007). However, dynamic capabilities do not seem to really fit SMEs because of their limited resources, and because of the high-velocity nature of the expected changes. Thus firstly, the field of industry needs to be taken into account when applying the theory of dynamic capabilities. The forest industry, being the research environment in this study, is globally quite a stable field of industry, and thus does not meet such radical continuous market changes as e.g. the communication industry does. Secondly, dynamic capabilities require multiple resources to purposefully create, extend, or modify a firm's resource base, and substantial changes in the limited resources of SMEs are, therefore, simply unrealistic. Dynamic capabilities such as survival competencies seem, therefore, to have limited relevance for SMEs in the context of this dissertation.

Managerial and business competencies, in turn, are observed to be crucial for SMEs' performance (Capaldo et al., 2004; Javidan, 1998; Sanchez and Levine, 2009; Vos, 2005; Walsh and Linton, 2011) and have an effect on the value creation processes (Barney, 1991; Grant, 1996; Prahalad and Hamel, 1990). Managerial competencies focus on planning, organising, controlling, and directing a firm, and are practically involved in resource acquisition, development, financial skills, business operational skills, and marketing skills as well as having an influence on organisational competencies. In SMEs, where a firm's resources (such as finances, labour, technology, and time) are limited, the impact of managerial skills is important for business success and for survival, and thus managerial competencies can be considered as survival competencies. To run a business owners/managers need appropriate managerial skills (Fatoki and Asah, 2011; Garcia, 2005; Pansiri and Temtime, 2008) and strategy implementation skills (Berio and Harzallah, 2005; Berio and Harzallah, 2007; Hambrick and Mason, 1984; Lado et al., 1992; Sanchez, 2004).

SMEs usually have limitations on their finance (Carson and Cromie, 1989), and they are dependent on functioning credit markets and the availability of venture capital in the starting and expansion phases. As a part of managerial competencies, financial skills are presented as crucial for business success and, furthermore, for the managers to understand the impact of their decisions on the firm's finance (Van Auken and Carraher, 2011; Cassar, 2004; Zarook et al., 2013). Good financial skills (Johnston and Loader, 2003) and effective

interpretations of financial statements have an effect on a small firm's success (Bressler and Bressler, 2006; Coleman, 2000; Carter and Van Auken, 2005; van Praag, 2003). The role of financial statements is central to maintaining a firm's competitiveness and solvency (Coleman, 2000; Wiklund and Shepherd, 2005).

Furthermore, as a part of managerial competencies, marketing skills are recognised as having a significant role in an SME's constant success. Invention of new products or services is economically of little worth if customers do not know about them and purchase them. Marketing, therefore, seems to be a survival skill in SMEs (Hatonen and Ruokonen, 2010; O'Dwyer et al., 2009; Parry et al., 2012). Limited financial resources for marketing force SMEs to take care of their own marketing, distribution, and support for the finished products (Carson et al., 1995; Gilmore et al., 2001) using noncomplex marketing models (Hogarth-Scott et al., 1996). Despite simplistic, informal, reactive, and haphazard marketing styles (Carson and Cromie, 1990; Fuller, 1994) SMEs have certain marketing advantages, such as flexibility, the ability to respond rapidly to the customers' needs and environmental requirements, and to attain closeness with customers (Simpson et al., 2006; Storey, 2000).

Additionally, as a part of the managerial operational competencies, good human relationships and interactions are seen as one of the advantages that lead to better SME performance (Rubio and Aragón, 2009). Firms have both internal human relationships i.e. relationships between employees – and the firm's external human relationships with e.g. customers and suppliers. The firm's internal relationships are commonly the responsibility of human resource management (HRM). While in large companies human resources are managed with the help of an HRM department, in small firms human resource issues are mainly handled by an owner/manager along with his/her other tasks, even though human resource management generally requires different skills and competencies (Quader, 2008). Most SMEs do not have any particular system for personnel training (Hessels and Parker, 2013; Saini and Budhwar, 2008), and thus the lack of qualified and skilled employees detrimentally influences e.g. the innovation process (Kamalian et al., 2011; Kang and Lee, 2008). Therefore, the awareness of such a lack of competence can be considered as an important skill in itself, because when a lack of skill and/or a demanded feature is recognised, it is easy to acquire more training in order to obtain the requirements to perform the specified job effectively (Dubois, 1993; Gilgeous and Parveen, 2001).

In comparison with internal relationships, the firm's external relationships are linked to connections from outside the firm; connections between customers, links between people in R&D departments, firms delivering materials, subcontractors and so on. In other words – a firm acts via separate relationships in a network. Therefore, competencies related to external environments and actors in networks can be treated as a separate classification, because the networking has arisen globally as one of the firms' courses

of action for success in business. Network competencies connect firms to inter-organisational cooperation (Ferrer et. al., 2009). Sharing competencies means that organisations manage and share resources, costs, risks, and information with customers and suppliers (Lampert and Cooper, 2000; Mentzer et al., 2000). Networking and innovation are linked together (Clifton et al., 2010; Gronum et al., 2012; Jørgensen and Ulhøi, 2010) as it is possible to acquire more innovation capacity through network relationships. Zeng et al. (2010) have studied cooperation networks in inter-firm, intermediary institutions, and research organisations, and they argue that inter-firm cooperation has a most remarkably positive effect on the innovation performance of SMEs. Additionally, networking is linked to globalisation, for example when SMEs search for new opportunities, business growth or development through internationalisation abroad.

As a summary of the competencies presented in the SME literature as regards business survival, it was firstly indicated that entrepreneurial features are strongly connected to opportunity discovery and innovation. Secondly, entrepreneurial competencies together with ‘future competencies’ have an effect on the continuity of businesses. Thirdly, managerial and business competencies together with financial skills and marketing skills are highlighted. Fourthly, human relationship skills and competencies lead to better company performance internally and externally. Finally, external networking competencies were identified as the new survival competencies of the 2000s. Figure 7 below combines the survival competencies identified with the generic

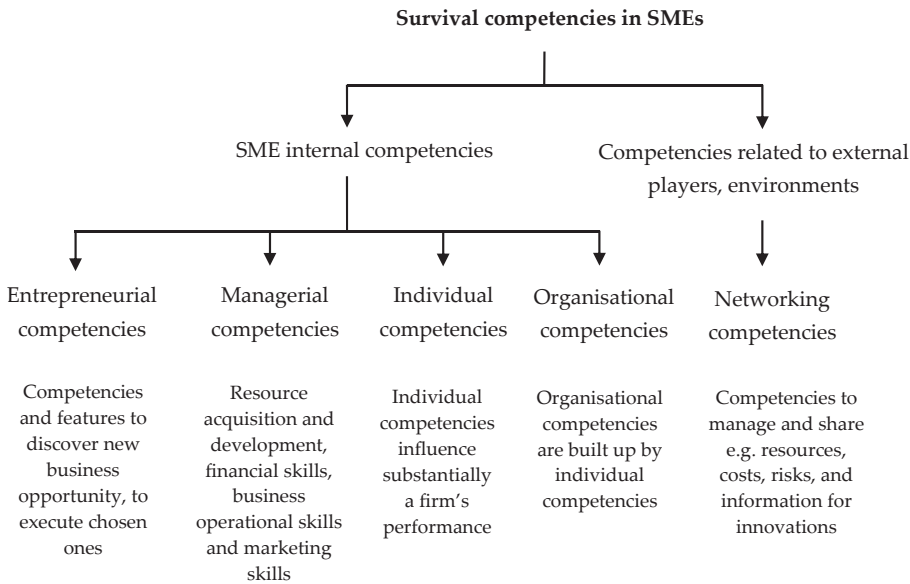


Figure 7. Survival competencies in the literature.

competencies supporting business (see Table 1) as reported in the literature.

To underline the direction of influence direction and the environments, the competencies are classified into categories such as internal competencies (competencies that have an influence inside a firm), and competencies related to external players and environments (competencies with which a firm interacts with external environments).

As a conclusion, it can be argued that the literature reviewed does not express a holistic, comprehensive account of the survival competencies needed for SMEs. The literature offers separate answers for separate actions, e.g. if a firm wants to increase its turnover by developing new products or services, then it can search for the demanded innovation skills and competencies in the literature. Additionally, the literature presents separate skills and themes from the view of managers/owners, and a holistic, comprehensive, firm level view of survival competencies is lacking. If an SME employs four employees on average (Lukács, 2005), it is surprising that only the manager/owners are considered to have an effect on the firm's performance. Of course managers/owners have significant roles in strategy, management and financing, but as regards shaping a well-balanced view of all SME competencies the image needs to be seen as a whole; thus it is necessary to encourage the skills and competencies of all the individuals that have an effect on the firm's performance, regardless of position. This dissertation adds to the literature a holistic, comprehensive picture of the survival competencies needed for SMEs. It also offers empirical data from Finnish and Russian SMEs (see Section 4), concerning their survival competencies during business change.

3. RESEARCH DESIGN

This section concentrates on providing information concerning methodological issues, the chosen research methods, and the analysis approach.

3.1 Research philosophy

Research philosophy discusses how the existence of the world is perceived in general, and the relationships between the world, people, and society. The background beliefs, the role of the researcher, and the preferred methods precedes the actual research. Initially, a researcher has to decide the research approach and the methodology by which to study the targeted research problem. Alternatively, a reader has to acknowledge the researcher's beliefs and values in order to review whether the chosen methodology is suitable for the particular research problem (Easton, 1995).

First, the research philosophy of this research is based on subjectivism/social constructionism, building on the idea that reality is socially constructed within individuals, and knowledge is thus available only through social actors; this knowledge relies on the social actors' meanings and therefore forms a deep understanding of SME survival competencies in changing business environments. The scientific background is mainly classified as within the natural and social sciences. In social science, perceptions and descriptions of the world are mainly categorised into two ontological streams; subjectivism and objectivism (Eriksson and Kovalainen, 2008; Morgan and Smircich, 1980). Easterby-Smith et al. (2008) use the terms social constructionism and positivism for the same purpose, referring to the subjectivist or objectivist nature of the research. The term constructionism, describes the social nature of the reality (Eriksson and Kovalainen, 2008) – reality is socially constructed and thus knowledge is available only through social actors. In objectivism/positivism, reality is assumed to be a separate, distinctive, and objective reality, where social world exists independently from people, their actions and activities (Easterby-Smith et al., 2008; Eriksson and Kovalainen, 2008).

Subjectivism/social constructionism establishes the reality of individual experiences and perceptions, which may differ for each person, as does the context, and change over time (Easterby-Smith et al., 2008; Eriksson and Kovalainen, 2008). Therefore, epistemology illustrates the phenomenon based on how individuals interpret survival competencies in their reality. For the reader's clarity, the study is located within a social constructionism, interpretive paradigm. There are many forms of interpretivism and constructionism, but usually both are concerned with subjective and shared meanings (Eriksson and Kovalainen, 2008). The starting points are the meanings, of which a researcher has to make sense in the analysis in order to have an under-

standing of the phenomenon (Easterby-Smith et al., 2008). Thus a researcher interprets the data in order to discover the findings. Although there might be some minor differences between constructionism and interpretivism this study uses these words as interchangeable. Different individuals in different countries within different business environments experience situations differently. To illustrate a holistic view of survival competencies in Finnish and Russian SMEs in different business societies, subjectivism/social constructionism was chosen because it allows a comprehensive view of the phenomenon to be formed, i.e. the survival competencies, by aiming to understand the existing reality as it is experienced by the actors.

Additionally, subjectivism/social constructionism allows a researcher to create interpretations based on various data, and to establish the research with small samples based on the fact that in social constructionism there is no absolute truth, e.g. any instance of reality can be viewed as truth, from the perspective of a specific context. The benefit of applying social constructionism lies in the rich and in-depth interpretations of the phenomenon, which is not possible in objectivism/positivism (Easterby-Smith et al., 2008; 59, 63; *ibid.*, 1991; 27). Furthermore, as competencies are quite a specific human- or organisation-based phenomenon, in-depth contextual interpretations are therefore needed to understand this phenomenon, whilst also aiming to increase a general understanding of the situation.

3.2 Research approach and research method

The research approach of the dissertation is qualitative by nature, and was chosen for many reasons. Firstly, the qualitative research approach gives richness to the data collected and thus the findings (Silverman, 2005). Secondly, it was chosen to promote a better understanding of people and what they say and do, and thirdly to allow the researcher to see and understand the context within which decisions are made and actions take place (Myers, 2009). The term qualitative places the emphasis on the qualities of entities and on processes and meanings, which are not experimentally measured in terms of amount, frequency, intensity, or quantity (Denzin and Lincoln, 2003). Qualitative methodology is commonly used in the areas of social science and business research to enhance understanding of reality as socially constructed, produced, and interpreted through cultural meanings (Eriksson and Kovalainen, 2008; Silverman, 2001). The concept of survival competencies in SMEs in changing business environments is complex by nature and is constructed of various skills, abilities, attitudes and individual features. These qualities are not easily measured quantitatively, consequently the qualitative approach can come closer to describing the real situation. Furthermore, qualitative research as a chosen methodological approach offers a researcher the possibility of focusing on this complexity, which includes various com-

petence perspectives and meanings in Finland and Russia; thus forming the multi-cultural concept. By employing qualitative research it is possible to illustrate the reality of SMEs in their real-life business environment and contexts in Finland and in Russia as well as discovering how they experience competencies as issues supporting business, and finally ascertaining how their competencies are changed due to environmental changes.

The research design applied is a combination of exploratory and descriptive designs. Firstly, an exploratory research design is particularly useful when the research problem is poorly understood, and a researcher wants to know what is happening in a particular context – here it is how Finnish and Russian SMEs act in changed business situations and what role competencies have in their business survival. Therefore, for this research an exploratory design offers more knowledge of the previously poorly studied survival competencies in SMEs. The business environment, the human resources, and society differ in Finland and Russia. The study approach is purely based on competencies in SMEs, and, therefore, cultural differences have been excluded from the study. However, during the study the researcher has been aware of the possible cultural effects, but due to the focus of the study, concentrated only on examining skills and competencies of SMEs for surviving the changes occurred. Secondly, descriptive design helps to structure the previously unstructured phenomenon by describing the existing understanding of survival competencies in SMEs, and as Ghauri and Grønhaug (2005) have stated, is therefore able to give well-structured descriptions of real-life cases. Thus, the research designs chosen comply with the constructionist epistemological perspective of interpreting people's experiences of competencies affecting business survival, as regards how they construct their world and what meaning they attribute to their experiences, and for the purpose of understanding how people make sense of their lives and their experiences (Merriam, 2009) in SMEs.

A case study and a literature review were chosen as the research methods for this research. The literature review is a rational assessment of the existing body of knowledge before bringing the researcher's contribution to the discussion (Tranfield et al., 2003). A literature review, conducted in a systematic way, significantly increases the transparency of the research, and therefore makes the analysis as unbiased as possible by being auditable and repeatable (Fink, 2010; Kitchenham et al., 2010). In the study, a systematic literature review protocol provided by Pittaway et al. (2005) is used. The protocol provides detailed conductive techniques and is also concentrated contextually on SME knowledge in literature. Publication 1 serves as a pre-study for SME competencies and is conducted with the help of a literature review in order to identify the general competence discussion and common themes related to human capital and competencies in SMEs. Publications 2-5 include specific literature reviews related to the research questions in the publications.

The case study is used as a research method for the empirical data, which was conducted within four samples in Publications 2-5. The case study was chosen because it allows an extensive examination of a single instance of a phenomenon of interest (Collis and Hussey, 2003). Additionally, it is a commonly used method in business research (Ghauri and Grønhaug, 2002) in order to assemble knowledge of individual, group-level, organisational, social, and related phenomena (Yin, 2009). Case studies may produce rich descriptions of every-day life (Stake, 1995), such as beliefs, opinions, and the views of individuals. Tellis (1997) stresses the production of holistic and detailed knowledge gained from the analysis of multiple empirical and context-rich sources. This study focuses on survival competencies in SMEs in changing environments. The changing business environments in Finland and Russia are likely to have various aspects depending on the personal experiences of an individual. In order to describe and portray the survival phenomenon better from the point of view of competencies, the case study approach offers the possibility of collecting in-depth knowledge from informants involved in the research, and acquiring a deep understanding of each individual's meaning.

Furthermore, the essence of a case study is to try to illuminate a decision or set of decisions; why they were taken, how they were implemented, and with what result (Schramm, 1971). It is a distinct advantage to use a case study as a research method, as the 'how' and 'why' questions are asked about 'a contemporary set of events, over which the investigator has little or no control' (Yin, 2009). From the empirical viewpoint, a case study provides an opportunity to study events occurring in the present, in real situations and in their own environment (Yin, 2003). The context of the study is multifaceted including economic structural changes in Finland and Russia, industrial structural changes in the forest industry, and additionally, a complex study of the issue of competencies in SMEs. Thus, various research areas and different individual aspects form the focus of the study, and the most suitable way to investigate the phenomenon is through a case study. In this study, the phenomenon of survival competencies is investigated in the environment of an SME in real operational situations and geographical locations.

The case selection is the most important methodological decision, when conducting a case study (Dubois and Araujo, 2007). Case study research has been defined by the unit of analysis, the process of study, and the outcome or end product, which are all essential to the case (Merriam, 2009). Yin (2009) especially stresses the selection of the unit of analysis. Initially, at the beginning the multiple-case study, a research design for defining the object of study was chosen: survival competencies in SMEs. The multiple-case design was chosen because within multiple-case studies only the relationships that are replicated across most or all of the cases are retained for analysis. The replication – an ability to replicate the results of a study – refers to the reliability (dependability) of the study (see Section 5.5). There is no expecta-

tion of replication in qualitative research, but a multiple-case study was chosen because of the possibility to replicate the features, and thus to promote the accuracy of the study.

The research data for the phenomenon - survival competencies in SMEs - consists of samples A, B, C and D (Publications 2-5). Publication 2 contains sample A the Russian SMEs and the other samples B, C and D include Finnish SMEs. The samples are constructed of various cases; sample A consist of 10 cases, B of 20 cases, and both C and D of 13 cases. Within each case – a firm – is the analytical unit (Remenyi, 2012). Furthermore, a firm is considered as an independent experiment and an analytical unit on its own (Eisenhardt and Graebner, 2007; Yin, 2003). The unit of inquiry is an SME, and the interviewee, considered the key informant, is embedded in the unit of analysis (Yin, 1994). As the key informants were selected individuals who established, or were members of the team who created the SME they had the best knowledge about the impacts of business environmental changes, and also, about competencies in the firm. In practice, most of the key informants were owners/managers who had been involved in the firm since its establishment. SME operations are person bounded, and SME operations are closely related to the entrepreneur. In some cases, the key informant/informants was a specialist employee who had the most comprehensive knowledge about the firm's development stages and operations. Detailed information concerning the key informants is presented in Part II of the publications.

The next section presents additional case selection criterion; the case limitations and research methods related to the publications and their objectives, as well as illustrating the research process.

3.3 Research process, selection criterion and sample objectives

The study concentrates on survival competencies in micro, small, and medium-sized firms in changing business environments in Finland and Russia. The business environment is a field of industry, or one related to it. First of all, taking into account the complexity of the subject in focus, the main purpose of this qualitative research is to increase the depth of understanding in the specific area rather than to demonstrate a wide coverage and the representativeness of the issue. The objective of the study is approached by conducting and combining various sources with various data. This is first done by identifying competencies existing in SMEs with a literature review, and second by combining the results with the empirical data using four contextually different samples and thus different data cases.

In qualitative research, it is not necessary to have large samples in order to increase the depth of understanding in the specific area, but there is a need to reach acceptable data saturation for a test of sufficiency (Lincoln and Guba, 1985; Morse et al., 2002). The data saturation is achieved when the number of

interviews reaches the point where new data or relevant information, themes or categories no longer arise. In the thesis, the number of Russian SMEs was limited to 10 firms because of the problems in data collection (see Section 3.4.1); the researcher could not influence these problems. As a consequence, the comparative study between Russian and Finnish SMEs have similar research conditions, the number of Finnish SMEs was also limited to ten firms. Regardless of the limitations on the number of the firms, the data saturation was achieved because new information ceased to emerge from the data in each sample. Moreover, samples C and D reached data saturation based on this emergence criterion. Purposeful sampling, i.e. – choosing suitable informants who have the best knowledge of the object of the study - is one way to fulfil the criterion of content validity (Patton, 2001). The samples (firms) in the study, needed firstly to have met changes in their business environments, and secondly all the firms needed to fulfil at least one of the following criteria: 1) they operated in the forest industry or industries related to it, e.g. the metal industry, 2) they were subcontractors in the mentioned industries, or 3) their operations were otherwise connected to the forest or metal industries. The samples in Publications 2 – 5 consist of case studies that either complement each other or gave contrasting results (Yin, 2009). Secondly, from the cases (firms) the most suitable informants were chosen (see Sections 4.2 – 4.5) offering the best information about the object of the study.

The research progresses through four different empirical samples according to their business environment. Sample A includes the Russian SMEs that experienced polity change and economic collapses. Sample B comprises Finnish SMEs that operated in a network of a paper mill that have been shut down. Sample C involves innovative Finnish SMEs, and sample D Finnish SMEs and related actors that have experienced drastic structural change in industry. The case studies were used in Publications 2 – 5, and a systematic review was provided in Publication 1.

3.4 Data collection approach and data collection method

Interviews were used as a data collection approach, primarily because it is not possible to observe an individual's thoughts, intentions, and actions conducted in the past (Patton, 1984). The purpose of the interview was to make it possible for a researcher to take someone else's perspective, and thus look at the world from the subjects' point of view including: the way in which they organised their world, their thoughts about what is happening, their experiences, and their basic perceptions. Burgess (1982: 107) summarises "(the interview) is ... the opportunity for the researcher to probe deeply to uncover new clues, open up new dimensions of a problem and to secure vivid, accurate inclusive accounts that are based on personal experience." In an interview, "the researcher and participants engage in a conversation focused on

questions related to the research study” (deMarrais, 2004: 55). It is important to obtain more in-depth information about perceptions, insights, attitudes, experiences or beliefs in order to describe and understand the reality the participants have lived through, and thus as a researcher to be able to form a comprehensive point of view of survival competencies.

The data was collected via individual and focus-group interviews. The focus-group interviews were those occasions when a group of individuals discussed and commented on a selected topic or issue from their personal experiences (Eriksson and Kovalainen, 2008). Thus, the focus-group interviews were chosen to produce experimental data by selecting interviewees who then discussed a selected topic/issue. The focus-group interview is used in all publications 2-5 where more than one interviewee participated an interview session. The individuals had all shared and discussed their experiences in relation to the topic in question.

The traditional types of interviews are structured interviews, semi-structured interviews, and open interviews. The flexibility of the individual types of conversation varies from a rigidly structured interview to a fully open, deep interview. In this study, a semi-structured interview was used, because the interview was guided by a mix of more or less structured interview questions, which still allowed flexible, complementary and clarifying questions from the interviewers as well as interviewees (Merriam, 2009; Silverman, 2005). The interviewer attempted to obtain information from the person by asking questions in the verbal interchanges comprised of the semi-structured interviews (Longhurst, 2010). More specifically, the selected type of interview is a themed interview, which is an organised way of conducting an interview. In a themed interview, participants know the main themes of the interview based on the information they have received containing a list of questions, however, the order of the questions may change and the formulations of the questions may vary according to the situation. In a themed interview it is also possible to contain several questions in one theme and formulate the questions during the interview (Eriksson, 1986). In this research, themed interviews were used in the semi-structured interviews in Publications 2 - 5.

Data samples A, B, C and D are presented in the following.

3.4.1 Sample A, Russian SMEs

This sample includes the data concerning those competencies in the Russian SMEs that had enabled business continuity in changing business situations. The data-collection process started by collecting a database of Russian companies, and as a result of this preparation phase three separate databases with contacts and company information for 369 firms were compiled. The suitable SMEs (see the criterion in Section 3.3) were limited to North-West Russia and the area of St. Petersburg and Leningradskaya Oblast. This was because of the high geographical SME concentration in North-West Russia, and

because the area is considered to be Russia's gate to the European markets and vice versa. The suitable firms had operated long enough to reach the survival criterion, and have gone through at least one of the following changes: the change in the social system from socialism to democracy in 1991, the collapse of the rouble in 1998, or/and the economic crisis in 2008-2009. The firms that were suitable were contacted, but some Russian firms, operating in domestic markets, saw no value in being interviewed because they felt the enormous Russian markets could satisfy their ambitions. Thus, all of the SMEs interviewed operated both in the domestic and in international markets.

The primary data for sample A was gathered by a focus-group and individual interviews between October 9 and December 5, 2012; there were 10 interview sessions with 12 individuals. The selected informants (interviewees) were individuals who had the best knowledge of how the business environmental changes had influenced their firm's operations, and by which means the firm had responded to these changes. All the interviewees were given information before the interviews by sending a semi-structured written form to describe the aim of the research and the interview themes (see Appendix 1 and 2). The languages used in the interviews were Russian, English, and Finnish - with the help of a research assistant (Russian and English) and the researcher herself (Finnish, English and Russian). Any possible misinterpretation was controlled for by a translator, who listened to each tape and compared the transcribed and the translated text with the original version. In addition, the researcher herself checked the transcripts. The analysis approach was data driven, following the idea of grounded theory research where no prior theoretical framework exists. In the inductive analysis, the data was coded, and compiled into three Microsoft Word tables: firstly, the issues related to the research question were coded with a data driven approach; secondly, the main coded items related to the research question were gathered together; and thirdly, the items were grouped and categorised in terms of similarities. The process was iterative, each phase increasing the accuracy of the data. Finally, the results were organised in competence categories and divided into internal competencies existing within the firms, and external competencies referring to the external environment. This categorisation enabled a refined illustration to emerge of the survival competencies related to a firm, and its reactions to external changes.

3.4.2 Sample B, Finnish SMEs

Sample B contains data concerning the competencies and reactions in the Finnish SMEs to drastic changes in their business environment. All the selected firms in the sample operated as subcontractors in a network of a locally important paper mill that was shut down at the end of 2011 in the South-East of Finland. The data collection began by resolving which firms were involved in the network of the paper mill. The focus was not on examining the network

itself, but selecting suitable SMEs, which operated with the mill before it shut down, and thus met a drastic change in their business environment. The examination found that between 2009 and 2011 the mill had altogether 1,014 enterprises in its business network. Of these, 754 were SMEs having Finland as their main operation area. The primary data was gathered from 10 selected SMEs from the 754 firms. The selection criterion was that the mill had or has had an important impact on the SME's business in recent years in terms of turnover. In addition, secondary data was gathered from publicly available sources to build a comprehensive picture of the firm's operations.

A semi-structured form (Appendix 3) of the study and interview themes was sent to all interviewees, before the interviews, with the aim of preparing the respondents in advance to focus on change experiences. The primary data was collected in the spring of 2012 using focused semi-structured interviews in 10 Finnish SMEs with 12 of the most suitable informants for the themes. The informants mainly represented the management level of the firms. After the interviews, the transcripts were first coded and approached as an iterative, data-driven process. After which, the main coded items related to the research questions were collected together, and finally the data were grouped and categorised in terms of similarities based on modified grounded theory. The data from samples A (Russian SMEs) and B (Finnish SMEs) were used jointly in Publication 3. The data from both samples were coded and classified separately according to qualitative content analysis (see Section 3.5), and secondly, the common themes of both samples were identified, combined, and conducted by cross-case analysis (see Section 3.5).

3.4.3 Sample C, innovative SMEs

Sample C contains data concerning entrepreneurial competencies in innovative SMEs with an aim to explore entrepreneurial competencies in SMEs that have successfully exploited innovation. The data was gathered as part of the Niche-Inno research on the Forest Industry of South-East Finland in the winter of 2010. The project concentrated on finding new niche business opportunities outside the current mainstream pulp and paper production by focusing on innovative SMEs and on inter-industrial cooperation. In the data collection process, the selected SMEs had to fulfil at least one of three criteria for innovativeness, expressed in Table 5 below. The SMEs were peer-nominated by local small business centres, other entrepreneurs - or had been awarded publicly. The primary data was collected with 13 semi-structured interviews with 15 individuals from the innovative Finnish SMEs. Because the data was collected earlier in the Niche-Inno project, the author first had to evaluate the validity of the data in order to ensure that the firms operated as SMEs in 2012. The chosen informants represented either the managerial or/and entrepreneurial levels of the firm, and had been involved in the firm's operations for a long time, and thus possessed the best knowledge about the im-

Table 5. Selection criterion, sample C

Number	Criterion for innovativeness
1	It had introduced new products or significantly improved products, production processes, and/or services into markets.
2	Other companies in the field or local small business centre identified it as being innovative.
3	It had successfully commercialised the innovation.

pacts of the changes. The interview form is in Appendix 4. In addition to the primary data, secondary data was collected from publicly available sources to build a more holistic picture of the firms' activities. The interview questions focused on the firms' development since its foundation, and therefore the competence information collected covered all actions and operations during the firms' existence. Some of the firms had operated for many decades, and the interviewees were able to offer significant knowledge as regards the competencies that had enabled their business survival.

The empirical data were transcribed and coded by the Atlas.TI software, tailored especially for qualitative and explorative data analysis in order to organise and conceptualise the themes of entrepreneurial competencies. The template analysis, in turn, was used to create a template framework of entrepreneurial competencies based on the recent entrepreneurial competencies examined in the literature 2008-2014. Finally, all the types of entrepreneurial competencies that arose with the data driven approach were inserted into the template, and the similarities and differences were reported according to the classification of the findings.

3.4.4 Sample D, SMEs in competence transformation

Sample D includes data from industrial structural changes and the resulting competence transformation in the SMEs. The topic of competence transformation was approached through an investigation of Finnish municipalities that had recently undergone industrial structural changes. Firstly, secondary data from public sources were used to create an overall picture of the change situation. Based on this analysis, the Southern-Finnish region of Kymenlaakso was chosen as the target area for the case study research because, since the 1980s, there have been considerable structural changes in important local industries, such as the marine, machine, forest, and paper industries. Within the timber and paper industry alone, it has been estimated that over 7000 jobs disappeared in the period 1990 – 2015, which is

70 % of the total job losses for the region (ETLA, 2012). The average unemployment rate in the area was around 13 % at the time of the research (Centre for Economic Development, Transport and the Environment, 2011), and according to the latest published statistics the unemployment rate is 16.8 % (Centre for Economic Development, Transport and the Environment, 2015: 4). This indicates that the area of Kymenlaakso and the enterprises in the region have faced drastic changes in the business environmental for many years, and therefore are the most suitable to study from the point of view of competence transformation. In addition, the proportion of entrepreneurs in the workforce is less than the country's average, and only a few growth enterprises exist in the area (Regional Council of Kymenlaakso, 2011).

The case includes three different views of structural change with an item triangulation, presented in Figure 8 below. The triangulation gives a versatile picture of the issue and attempts to ensure the most in-depth understanding of the phenomenon (Denzin and Lincoln, 2000). Firstly, those actors/operators were approached who operate in the office of the regional business service; this service mediates and can influence structural change from the point of the public sector. The chosen public actors used were, for example, local, regional, and to a certain degree national authorities within the five municipalities. These actors promoted and developed better business environments and conditions for enterprises. These development agencies were selected in order to gather their perceptions of the impact of the past regional development operations have had. Based on the secondary data and using the purposeful sampling and snowball selection method (Doreian and Woodard, 1992), the first group was asked to name some suitable participants from the established SMEs in the area who have been surrounded by structural changes over many years. This technique provided further relevant data and a multi-sided perspective on the issue in focus. Furthermore,

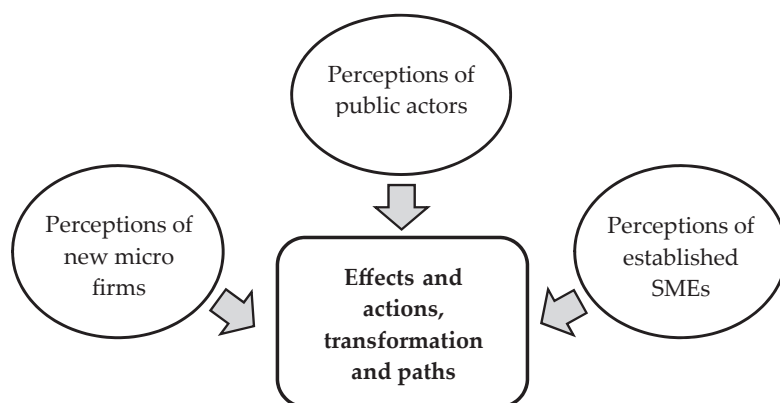


Figure 8. Item triangulation and separate group, sample D.

to complete the diverse perceptions of the impacts of structural changes on competencies, the public actors/operators were asked to name suitable new micro enterprises, which were founded by individuals who had been made redundant when the mills in the area shut-down. The primary data was collected through in-depth, semi-structured, thematic interviews that took place in August-October 2011. The perceptions on the changes were received from three public actors/operators, six managers of established SMEs, and from four new entrepreneurs. The interview form can be found in Appendix 5. The research data consists of interview transcripts and additional material in text format. The interviews were the primary data and they were first transcribed and then analysed by classifying them in categories based on the research questions, after which similarities and differences were sought. The data analysis results are reported in three tables which present the perceptions of public change management on structural change, the competence transformation in the companies, and views concerning competence transformation paths.

3.5 Analysis approach and analysis methods

Table 6 below summaries the data sources, the number of informants, and gives a description of the data collection and the analysis - as related to the publications in each sample. The analysis approach of the study is interpretative as the purpose is to explore in detail how the individuals made sense of their personal and social worlds (Smith, 2007) and to look for the meanings of the interviews and other data (Warren, in Gubrium and Holstein, 2001; 83-85). Based on the principles of case study research, the researcher must interpret the collected data by also taking into account the situations and subjects, and not only observe the information as such. The intention is often to interpret the implications suggested by the data, but the interpretation is always more or less speculative when examining in detail how the participants see their social and personal reality (Smith, 2007). Therefore, according to Alasuutari (2001), in qualitative research, the data should be examined through particular theoretical and methodological viewpoints, and during the analysis attention should be paid only to what is essential, on the basis of the theoretical framework, and the research questions. Concisely, the aim is to provide a thick description (an in-depth understanding considering the context) of the phenomenon.

There are a number of standardised techniques in qualitative analysis, and one single form of best practice does not exist. One analysis method for finding meanings from texts is qualitative content analysis, which is widely used in the social sciences, especially nursing research (Cavanagh, 1997; Elo and Kyngäs, 2008), and has recently been applied to management research (e.g. Beattie and Thomson, 2007). In this study, qualitative content

analysis was used as a data analysis method in Publications 2, 3 and 5 in order to classify and categorise the data. According to Cavanagh (1997), a qualitative content analysis is a suitable method to discover meanings and intentions by using a systematic classification of data. The analysis process may be conducted either by categorisation based on the data (inductive) or categorisation based on earlier knowledge (deductive) (Elo and Kyngäs, 2008). An inductive categorisation, where the themes arose primarily from the data, and these themes were grouped in terms of similarities after cod-

Table 6. Summary of data descriptions related to publications

Publication	Data collection method	Data Sources / Informants	Analysis approach and method
Publication 1	A systematic literature review using a key-word index on human resources, individual human capital, competence management process	Scirus, Web of Science, Google Scholar	Results of literature search; first round 300 semi-suitable articles, 22 was selected as a sample
Publication 2 Sample A	Empirical, 10 semi-structured interviews	12 individuals in Russian SMEs won through polity, and/or economic changes	Data driven approach, inductive content analysis
Publication 3 Samples A and B	Empirical, 20 semi-structured interviews Secondary data	12 Russian and 14 Finnish individuals at managerial level, all whom faced drastic business environment changes	Data driven approach, inductive cross-case content analysis
Publication 4 Sample C	Empirical, 13 semi-structured interviews Secondary data	15 individuals from innovative Finnish SMEs	Data driven approach, template analysis, Atlas.TI
Publication 5 Samples D	Item triangulation 13, semi-structured interviews Secondary data	3 individuals from the public sector of change management, 6 managers won through structural changes, 4 start-up managers	Qualitative content analysis

ing, was used in Publications 2, 3 and 5 based on grounded theory analysis (Easterby-Smith et al., 2008). Grounded theory approach, similar to the data driven approach, means that there is no prior theoretical framework to follow, but the analysis is holistic, being closer to the data and developing patterns (Easterby-Smith et al., 1991). Thus, the use of grounded theory analysis is based on achieving a more open approach to data in order to facilitate the analysis of a conceptual framework through classification of data related to the research questions (Merton and Kendal, 1957).

Furthermore, in qualitative data analysis, the structure used has to be derived from the data at the very beginning (Easterby-Smith et al., 1991). The studied phenomenon, survival competencies in changing business environments, is a complex issue, and thus to increase understanding of the issue it is justified to analyse the data with a method that brings out themes, possible patterns, and categories. In the cross-case analysis, used in Publication 3, the common themes of both samples were identified and combined by the pattern-matching technique (Yin, 1994). The usage of the cross-case analysis was beneficial for a comparison of the data from various cases, and to discern patterns or themes. In Publication 4, template analysis (Crabtree and Miller, 1999; King, 2004; Waring and Wainwright, 2008) was used, because template analysis is a particular way of thematically analysing qualitative data. With the help of the template analysis, it was possible to create a template for codes, summarise the themes identified by the researcher as important in a data set, and organise the themes in a meaningful and useful manner (King, 2015).

4. SUMMARY OF THE PUBLICATIONS AND REVIEW OF THE RESULTS

This section summarises the objectives and main contributions of the publications related to the thesis. The main points of each publication are presented in Table 7. The broader information concerning the research methods, data collection, and analysis is presented in Sections 3.2 - 3.5. Furthermore, the full text versions of each publication are available in Part II for closer inspection. The order of the publications is in accordance with the research questions (see Section 1.3).

4.1 Publication 1 – A literature overview of competence identification in SMEs

Objective of the publication

Publication 1, co-authored with Hannele Lampela, serves as a pre-study in order to investigate how competencies and human capital in SMEs are identified in current academic literature. In changing internal or external conditions, firms and their managers need to know their existing competencies in order to meet the changes properly. This is often a problem in SMEs, because generally SME managers have poor skills as regards reflecting themselves strategically (e.g. Vos, 2005). To help managers reach a better performance more easily, they need to know what competencies they already have in a firm and which they need to develop. The first focus was thus to search for existing competencies in SMEs, and additionally, the themes related to human capital and competencies were investigated. The study offers concrete examples of identified competencies and the relevant competence areas identified in SMEs.

The literature review was based on various scientific databases and the usage of keywords (see Table 6 in Section 3.5) to find examples of the concrete competencies existing in firms, or to identify a theme related to human capital in SMEs. The increase of the strategic importance of competencies and the discussion on the core competencies in the 1990s, was used as the basis for limiting the years specifically to 1990 to 2011. Finally, a total of 22 publications out of the 300 semi-suitable articles found, were selected for a detailed analysis. The competence themes in the most suitable publications were analysed in order to answer the research questions, and the very first classification was made by scanning for managerial and other competencies identified in the selected publications. The second classification summarises the themes related to human capital and competencies.

The study summarises the competencies needed to reach a better perfor-

mance and competitive advantage in SMEs. Referring to the thesis, the publication provides insights into what competencies exist in SMEs, and serves as a pre-study for the discussion on which competencies can be transferred into other contexts or into other industries.

The main findings

The first findings, based on the literature, are presented in Figure 9 below. The figure highlights generic competence and job-specific capabilities, the social and relationship aspect, and competencies needed for the future – this is related to managerial competencies. In many models, managerial competencies as well as the identification of all competencies is strongly emphasised in the literature (e.g. Berio and Harzallah, 2005; Sanchez, 2004). Managerial competencies are crucial for enabling firms to develop other competencies (Lado et al., 1992), and therefore Figure 9 is based on these. Competence identification starts from the managers' ability to deal with the firm's strategy; managers must have the competence to identify resources, shape visions, and manage these in order to reach a good performance. All operations related to strategy, organising critical processes and resources in a firm aim, or should aim, towards a better performance and to improving the competitive advantage of a firm.

The existing competencies were divided into three categories based on the similarities found. Firstly, the generic competencies identified were related to the skill components, which are not expressed in the form of activities specific to a particular setting. Additionally, the other competencies

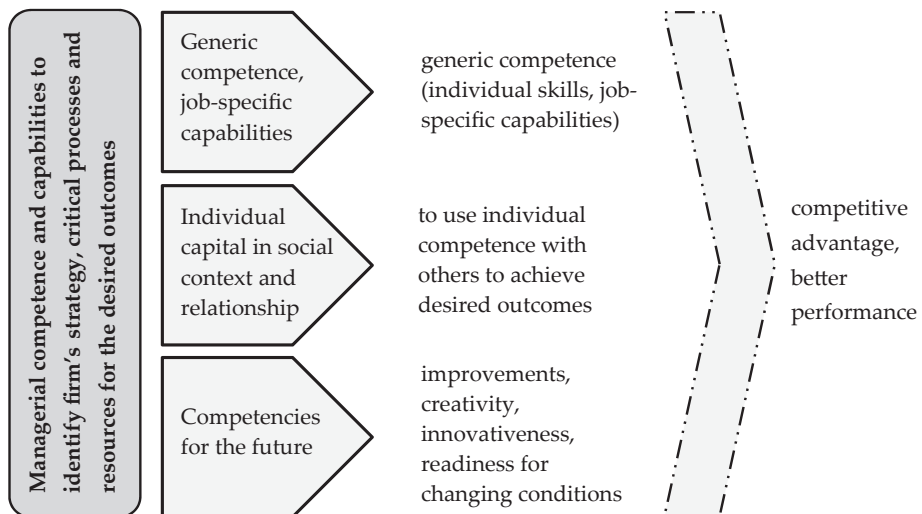


Figure 9. Results of competence identification in the literature.

found were an occupational competence (related to occupation), a task-specific competence (independent of specific jobs), a job-specific and enterprise-specific competence (related to a specific work system), and a person-specific competence (task or job in a specific work system). Secondly, a human individual capital competence in social and relationship contexts were highlighted. These competencies are needed, along with others, in, for example negotiations and in building alliance relationships. The third type of competence found in the literature review was 'competencies for the future', such as a continuous improvement climate, creativity, innovativeness and readiness for changing conditions.

The second set of findings, based on common themes related to human capital and competencies, summarises issues such as SMEs' characteristics versus the characteristics of large organisations, products versus service organisations, competencies and innovation, competence development, human and relational capital, and networks. Firstly, in practice, large and small enterprises differ in their entrepreneurial competencies and managing human capital is often neglected in SMEs. Secondly, service organisations have been less studied, but they have the distinctive characteristic of intellectual capital as related to practices. Service-oriented companies especially in the 2000s, need to focus on human assets, e.g. creativity and emotional intelligence, and on innovativeness, as well on strategic management; they also need to have the ability to manage employees' competencies. Thirdly, innovations and innovativeness are an important basis for future success, although not valued and recognised by all SMEs. Fourthly, individual competencies form the basis of organisational success, and their development through learning and training is also essential in SMEs. Finally, SMEs must also be able to utilise external networks for efficient competence management.

Main contributions

Firstly, this publication adds to the knowledge on competence by providing SME literature with a concrete description of what the competencies in SMEs are, and will therefore help managers to identify possible and important competence needs and development areas. Secondly, the paper discusses common themes in SMEs related to human capital and competencies. This expresses a practical key message to SMEs to aid them in aiming for better performances. The entrepreneurial competencies differ when comparing large and small enterprises (Capaldo et al., 2004), and thus know-how about entrepreneurial competencies and entrepreneurial behaviour in SMEs has a strong effect on their performance when related to the external business environment. Furthermore, the growth of the knowledge economy and knowledge-based business emphasises value creation and financial interest based on knowledge and competence. As a final point, the competence of

individuals is emphasised in many publications and studied quite well at a general level (Walsh and Linton, 2011; Katzy and Crowston, 2008). However, this study shows that examples of specific competencies studied at a detailed level in knowledge-intensive companies are still quite scarce in the literature. The number of knowledge-intensive companies is increasing, but it has still not been possible to specify in detail the assets that are the basis for creating wealth and financial success, especially in terms of human capital.

4.2 Publication 2 – Survival competence in Russian SMEs in a changing business environment

Objective of the publication

Publication 2, co-authored with Pia Heilmann and Hannele Lampela, addresses those competencies that have enabled Russian SMEs to survive in conditions of unpredictable external change. Russian SMEs were chosen as the empirical context of the study because they have undergone several drastic changes in their operational environment in recent decades, and examples of such major changes elsewhere are rare. In addition to the polity and the economic changes (see more in Section 3.4.1), membership of WTO in 2012 has also brought challenges and opportunities to Russian SMEs.

The role of this publication in the thesis is to provide views concerning competencies as regards how to enable business survival, such as, what the specific competencies are that support business continuity, and how internal and external changes influence competence transformation. Additionally, the study begins with a discussion on the competencies needed for a business to transfer to another context and into other industries.

The main findings

The findings are categorised into internal competencies (entrepreneurial and individual competencies) existing within firms, and external competencies (competencies related to external players, network competencies) referring to the external environment. Individual competencies concern all the people in the firm. As individual competencies, industry know-how, and a highly skilled staff constitute the basis for success and survival, and therefore continuous competence development is essential for everyone within the organisation. On the one hand, it was quite normal to find employees accepting voluntary, self-paid training, while, on the other hand, enormous difficulties were experienced when persuading employees to adapt to the new capitalistic working climate. The employees who were born after the introduction of the capitalist system seemed to adapt to the new methods and production models better than older employees, who were used to socialism and the old

attitudes. The findings especially highlighted the importance of proactively building internal entrepreneurial competencies in order to provide and recognise opportunities, while simultaneously having an open-minded attitude towards external partners - and building networking competence. Entrepreneurial competencies apply not only to entrepreneurs, but also to all SME employees, who also need to have an entrepreneurial mind-set.

Networking skills and the willingness to cooperate were emphasised as external competencies. Cooperation concerned, in particular, innovation and subcontracting in order to produce high-tech equipment abroad, because of a lack of the necessary high-level production skills in Russia, and the means to make offers with a reasonable price. An active networking function operates in two directions, both from the Russian SMEs to companies abroad, and to the Russian SMEs from the accumulated experience from their foreign partners. All network operations are based on open-mindedness and open and sociable communications; this increases customer interest and instils confidence. In their operations, all the firms were flexible, following and responding to the market changes and thus gaining economic leeway. We named this flexible trait 'amoebic' because the firms seem to be amoeba-like: they are continuously moving and changing their form in relation to the changes in business environments, e.g. as regards legislation. Additionally, SMEs seemed to have the capacity to move horizontally and vertically inside their customers' organisations. The vertical movement appeared as an ability to move on different levels from bottom-up to up-bottom and in horizontal positions. A strong and close relationship at the interface of firms and their customers imparts an ability to manage customers both within the customer's operations and between firms, based on trust and reliability on both sides. Courage and the ability to tolerate uncertainty are needed from entrepreneurs as well as from employees, in order to face late salary payments and uncertain markets, and to start to penetrate new markets. Organisational competencies are not as visible in this study as the other competence categories, but seemed rather to be more intertwined with the other types of competencies. Individual competencies create the organisational competencies, and network competence can be identified both with the individual and the organisational levels. Therefore, within an organisation, it is difficult to make a distinction between competencies that are purely individual or purely organisational, and to distinguish between organisational and network competencies is also challenging.

Main contributions

The study contributes to the competence and entrepreneurial literature by presenting the fact that both internal competencies and network competencies are needed in order to survive in crisis situations. Recent stud-

ies in Russian SMEs have presented a top-down perspective related to, for example, institutional issues (e.g. Smallbone and Welter, 2012; Timofeyev and Yan, 2013), but the present study offers an alternative bottom-up view of competencies, i.e. the enabling competencies that are used as a means of business survival.

Furthermore, the study offers some practical implications in change situations for the SMEs and their managers, such as the fact that continuous change also demands change of personal attitudes and values and mind-set changes that allow new ways of thinking, especially in SMEs. This is because due to their small size, all competencies in SMEs are specific and highly person-dependent. Additionally, entrepreneurial competencies have been highlighted as important for all employees, which is somewhat opposite to recent studies that have tended to see entrepreneurial competencies as belonging only to the entrepreneurs (e.g. Mitchelmore and Rowley, 2010; Venkataraman, 1997). Entrepreneurial competencies acquired by everybody in the firm, an open-minded attitude towards external partners, and networking competence provide a future direction for managerial practice and public actors. The specific individual and entrepreneurial competencies discovered by this research will help SMEs themselves as well as public authorities and policy makers to guide and to develop vocational systems to produce skilled and qualified individuals for current business demands. Russia needs more SMEs to strengthen and diversify the economic structure of the country, and therefore the public actors may also increase individual readiness for entrepreneurship by influencing the institutional problems and by strengthening general entrepreneurial competencies through education.

The study contributes to the recent literature with the conclusion that the organisational competencies are not as visible in SMEs as the literature suggests (Nurach et al., 2012), but are more intertwined with the other types of competencies. Thus, a common competence categorisation for separate individual and organisational levels seems not to fit SMEs. Moreover, the study concludes that the competence basis in SMEs must be internally strong; allowing it to meet external challenges and changes successfully. Methodologically the study narrows the gap by a qualitative case study on entrepreneurship and small businesses in Russia (Ojala and Isomäki, 2011).

4.3 Publication 3 - Survival skills in SME - continuous competence renewing and opportunity scanning

Objective of the publication

This publication, co-authored with Hannele Lampela and Pia Heilmann, uses a comparative approach and focuses on how Russian and Finnish SMEs react in drastic, business environmental changes, and what part compe-

tencies play in business survival. In the current literature, survival skills have been mentioned as separate items or skills, e.g. marketing (Parry et al., 2012), survival constraints (Okpara, 2011), internal factors (Hove and Tarisai, 2013), and types of financing (Bauchet and Morduch, 2013); consequently a holistic view on competence is lacking. Therefore, the study approaches the survival skills and competencies of the SMEs from a holistic viewpoint without separating the individual and organisational levels. In SMEs, this separation is difficult due to limited resources and a dependence on personal skills.

The publication compares the survival skills and competencies between two different data samples; Finnish SMEs and Russian SMEs. The research data was collected from 10 Russian and 10 Finnish SMEs (see Sections 3.4.1 and 3.4.2). The Russian SMEs had met polity and economic changes (see Section 3.4.1), and the Finnish SMEs had operated in a network where a paper mill was shut down in an area that had already suffered from various industrial structural changes (see Section 3.4.2).

The comparative study addresses the thesis by giving responses to how and which specific competencies enable business survival in changing situations, and furthermore, how and which competencies enable business to transfer to other industries.

The main findings

The findings indicate differences in the entrepreneurial competencies of the SMEs between the countries studied, especially in relation to the external environment, which are essential in ensuring the continuity of the business. The competencies in Finnish SMEs were not adequate to survive change situations, nor did they allow strategic repositioning of the firm. In comparison, Russian SMEs have nearly always operated in unstable business environments, and have transformed their businesses according to the new requirements of the changing business environment.

The findings indicated that some Finnish SMEs have neglected entrepreneurial competencies, e.g. environmental scanning, and thus neglected the future development of their firm, meanwhile the Russian SMEs have had clear visions for the future. On the one hand, the Russian SMEs took insufficient note of individual competencies (see Section 4.2), while on the other hand some Finnish SMEs were caught in a situational competence trap (Vähämäki, 2005). This is a trap where individual competencies keep the enterprises locked into the current field of industry, and hinder a business transfer to another, possibly more successful industry. In addition, an unwillingness/ineptness to renew individual competencies and a passiveness towards change were indicated in Finnish SMEs.

In inter-organisational relationships, Russian SMEs stressed open-minded

cooperation and network competencies (see Section 4.2). In turn, as regards relationship competencies that help to gain a business competitive advantage, the Finnish SMEs particularly illustrated reliability and familiarity with customer processes as the greatest reason to acquire new jobs (see more Publication 3 in Part II). In general, the Finnish SMEs had an expectant attitude to their customer operations, while the Russian SMEs operated smoothly in and out of customer interfaces. A resistant attitude towards external changes was polarised in some Finnish SMEs; this was seen as a longing for old, stable times and a form of security seeking rigidity within the business operation models, as well as a shortage of courage to break with former ties. However, industrial structural change seemed to be partly a good thing for the Finnish SMEs as it caused job revisions to be made in the face of mill closures, or it meant that former customers were replaced by new ones. Nevertheless, although some Finnish SMEs had realised that there was decline in the markets the firms still did not change their operations in order to prepare for the situation. Those SMEs who explored new directions, felt themselves positive and proud of their renewed concepts and models. Russian SMEs were evidently willing to cooperate and had overall an open-minded attitude, and flexibly in their search for new directions, and, for example, succeeded in opening new markets abroad.

Main contributions

The study also indicates differences in the entrepreneurial competencies of the SMEs in the two countries, such as passiveness in environmental and/or opportunity scanning. It also highlights the need for SMEs to invest in competence renewal to avoid competence traps. Surviving SMEs also need to possess a forward looking attitude with opportunity exploration and exploitation. In addition, the study includes dynamic and multidimensional elements as regards the holistic perspective of competence, personal behaviour, and ethical values. In contrast to the literature on competence, which commonly identifies separate competencies in order to enable business survival (e.g. Forsman and Rantanen, 2011; Parry et al., 2012) this study adds a comprehensive SME-level view of survival enabling competencies.

In addition, the publication adds to current competence and entrepreneurial literature the skill of continuous competence renewal and encourages SMEs to actively conduct environmental scanning. Mostly, this is targeted at the SMEs' management and competence management in SMEs, but it also additionally emphasises the important role of every individual in a firm; because individual competencies form the organisational competence (Turner and Crawford, 1994). Individuals and organisations need to take care of their competencies to avoid competence traps, which are harmful to business survival (Vähämäki, 2005) and prevent opportunities being discovered and exploited (Senaratne and Wang, 2009).

Moreover, as a main contribution, the study contributes to the entrepreneurial literature by showing the difficulties of SMEs in returning to earlier phases of the entrepreneurial process (see Figure 10 below). According to Shane (2003) the entrepreneurial process covers seven phases, of which the three first are connected to business opportunities and thus to the creation of new products and services ensuring business continuity. The study concludes that some of the Finnish SMEs studied were passive in opportunity scanning, unwilling to make changes, and were nostalgic for stable times. Figure 10 below presents the seven phases of the entrepreneurial process (Shane, 2003), and illustrates the difference between observed reality and the ideal feedback circle. In the entrepreneurial process an objective and an ideal situation are that a firm returns to earlier opportunity phases in order to discover and develop new business possibilities that can meet the changed situations. As regards practical implications the study highlights the need for SMEs to invest in competence renewal in order to be able to avoid competence traps, from which some Finnish SMEs suffered. Therefore, competence traps, and neglecting the opportunity discovery and exploitation phases, led firms to only operate and modify the every-day business level. Without any internal and external development a firm may be forced to reduce its business operations. Moreover, surviving SMEs need to possess a forward looking attitude in relation to discovering and exploiting opportunities. Both implications are significant in ensuring the continuity of the business.

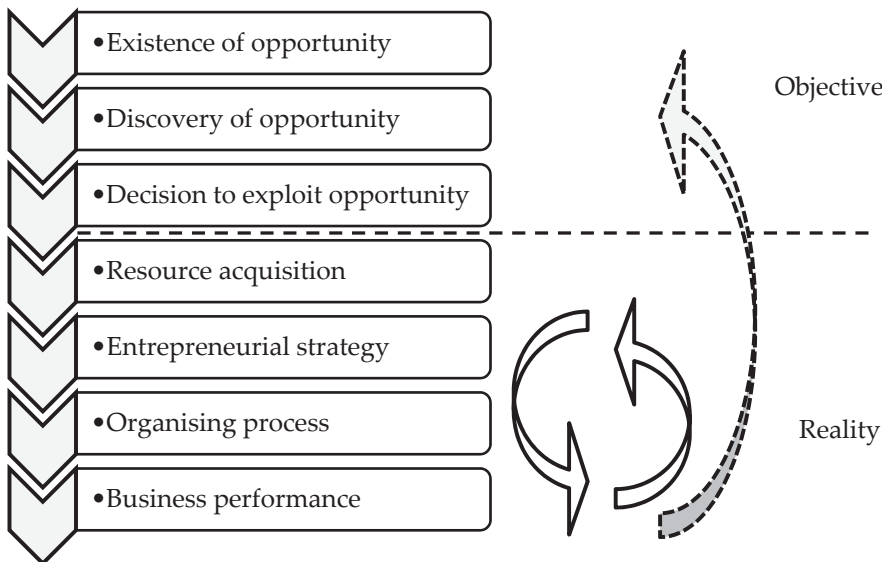


Figure 10. Entrepreneurial process (Shane 2003; modified) and the difficulty of returning back to earlier phases.

4.4 Publication 4 – Entrepreneurial competencies in innovative SMEs

Objective of the publication

The conceptual publication 4, co-authored with Kaisa Henttonen and Hannele Lampela, was to identify the entrepreneurial competencies specific to SMEs that have successfully introduced innovations in the market. The focus is firstly on the entrepreneurial competencies, because there still does not seem to be an agreement in the entrepreneurial or competence literature as to what entrepreneurial competencies consist of. Secondly, the focus is on successfully innovating SMEs – that is – firms that have exploited successfully at least one idea in the market. The level of analysis is on personal competencies without separating them from professional positions within a firm, because it is likely that a team of entrepreneurs is often needed in order to possess all the required competencies to transform an idea into a value creating firm.

The empirical part of the research includes data from 13 innovative Finnish SMEs in the forest industry (see Section 3.4.3). The forest industry is very important to the Finnish economy, and the industry needs new innovations as a consequence of industrial production moving to low cost countries. The ability to exploit an idea – innovativeness - was judged, by peer-nominated criteria from other entrepreneurs or local small business centres, based on the SMEs' ability to commercialise innovations.

With reference to the thesis, the study firstly deepens knowledge about specific entrepreneurial competencies. Secondly, it touches on the discussion of how and which entrepreneurial competencies enable SMEs to survive, and furthermore which entrepreneurial competencies enable SMEs to transfer their business to other contexts or into other industries.

The main findings

The study approaches entrepreneurial competencies by extending the recent entrepreneurial competence template of typical entrepreneurial competencies (TTEC) with empirical findings, based on research data, in order to refine the concept of entrepreneurial competencies, which will thus benefit SMEs. The entrepreneurial competencies that are found in Publication 4, are presented in an order which follows the entrepreneurial process (Shane, 2003), because entrepreneurial competencies have a focal position/status in the entrepreneurial process. In the early opportunity phases of the entrepreneurial process (Shane, 2003; see Figure 5), the study presents, as new approaches to opportunity competencies an open-minded ability and mental attitude towards developing entirely new trends and thoughts. The oppor-

tunity competencies are important for a firm in discovering and exploiting new business opportunities, and thus for the success of the business success and in order to transfer businesses into other industries. Furthermore, those competencies related to envisioning/seeing the future indicated that the innovative SMEs have clear, strong visions and goals for many years ahead; they are committed to operating according to their vision, and are additionally aware of the firm's position in the markets. Moreover, although the ability of risk-taking is important in SMEs (Dimitratos et al., 2014; Santandreu-Mascarell et al., 2013), the firms studied were aware of risks, but this risk-taking ability was not emphasised as a specific competence. This may be due to the study approach that was used; most of studied SMEs had already exploited their innovation in the market, and had quite stable customer relationships and no longer faced major finance threats.

In the entrepreneurial execution phase, the SMEs in the study had mainly exploited radical innovations, and 'innovative competencies' as presented in the literature (Hui et al., 2011; Morris et al., 2013), were covered in the study of the SMEs. These included opportunity competencies such as goal-orientation in order to successfully exploit an idea and introduce it into the market. In the business performance phase, in turn, the entrepreneurial competencies needed are naturally competencies related to running and managing every-day business, relationship competencies, and networking and learning. The business management themes such as financial and budgeting skills, business operational skills, and development ability were highlighted as important for business continuity as a part of daily life. However, the study emphasised marketing skills, because a purposeful public image competence was not discussed earlier in the literature. A purposeful public image competence means a proactive approach and functional competence as regards deliberately controlling a firm's public image, and the guidance of the firms' publicity. Publicity is managed as a purpose-oriented part of the firm's management, and as part of managing its future development. The image of an innovative, leading, and prominent firm is meant to result in acquiring more customers. The purposeful image skills seem thus to be one of the special entrepreneurial competencies enabling business success in innovative SMEs.

Furthermore, human relationship competencies, such as interpersonal skills, skills concerning knowledge of human nature, and the ability to manage customers were highlighted on a personal level. This means that every person at every organisational level must take a wider view and see himself or herself as being an essential part of the firm, and realise his or her job's influence on other people's jobs. The innovative SMEs show high industrial skill performance; therefore, they may have developed products that change laws and regulations, and therefore individual competencies and a development-friendly mind-set are stressed as crucial for business success

and greatly influence the competencies of survival. Additionally, having a novel aspect to the recent entrepreneurial competencies, networking competence appeared as a two-way competence that also benefits the partners. The networking competence in this study included an open-minded attitude, courage and strong confidence in one's partners, and they are important in developing new products with customers, subcontractors, and universities. Finally, the learning competencies in TTEC focus on the future and how to attain the desired business reality, e.g. learning from customers and competitors and learning about one's own field, however, the innovative SMEs seem to already know their present situation and possess wide familiarity with the field and a thorough familiarity with the market, customer needs, and their processes.

When combining previous results in shaping entrepreneurial competencies in SMEs to successfully exploit innovation, the common denominator of the competencies is extroversion. Usually, extroversion is combined with individual traits (Garcia and Moradi, 2011; Marjani et al., 2013), but the study shows that extroversion also covers actions on an organisational level.

Main contributions

The study identifies specific entrepreneurial competencies with a novel approach and a more detailed level than earlier entrepreneurial literature (e.g. Loué and Baronet, 2012; Mitchelmore and Rowley, 2010). Innovation – the exploitation and execution of an idea – is important for all SMEs and the ability to utilise the entrepreneurial process successfully leads to better performance and business survival (Shane, 2003). If a firm is willing to transfer its business to other industries, opportunity competencies are especially crucial, as e.g. Man et al. (2008) and Ahmad et al. (2010) have stated. In the successfully innovating SMEs, new, in-depth competencies had been introduced to improve and ensure success such as: open-mindedness and the development-friendly attitude to new trends and thoughts based on the individual competencies of employees and managers; purposeful public image competence; and two-way networking competence with an attitude of beneficial cooperation with all partners. Additionally, the study illustrates a template of typical entrepreneurial competencies for the 2000's. Innovative SMEs are recognised to hold a crucial position as engines of growth (OECD, 2013) and as key drivers for innovation (EC, 2013). SMEs need new information to successfully exploit innovations and strengthen their knowledge of entrepreneurial competencies. By these means they can thus fulfil the economic expectations of societies and economic institutions.

The study is conceptual by nature, and does not offer direct implications for putting into practice, but some assumptions may be presented as to how the study results can be utilised. The study emphasises the importance of

company-level extrovert competencies in contrast to earlier entrepreneurial studies (e.g. Baron, 2002), which combine extroversion with individual features. The company-level extroversion competencies mean that even during the protected idea generation and start-up phases, successful SMEs maintain an open attitude towards networking, and thus enable business continuity. Although the research data from innovative Finnish SMEs was limited, the results can assist global firms that want to develop their entrepreneurial competencies in an effort to achieve greater success in innovation exploitation and business. The public educational and training institutes, in turn, should acknowledge more the behaviour-based aspect of competencies, as well as skill-based training. In addition, a development-friendly mind-set should be emphasised even in education syllabuses.

4.5 Publication 5 – SME competence transformation – a case study on industrial structural change

Objective of the publication

Publication 5, co-authored with Pia Heilmann and Hannele Lampela, illustrates how established SMEs and new micro firms transform their competence in industrial structural change, and how the representatives of the state and region (public actors) manage the change process. Concerning the structural changes, the Schumpeterian innovation theory and the concept of 'creative destruction' (Schumpeter, 1934) is used as a theoretical background, and the empirical context is provided by the firms' operations in the Finnish forest industry. As an important part of the macro-economic debate, a locally unpredictable structural change often reflects wider industrial restructuring, theoretically and in practice, and is a subject which has attracted attention in both the EU and the USA (EC, 2012; Janger et al., 2011). An SME view of change situations and the effects that changes have on the whole collaborating network of organisations is seldom presented, as the focus is mostly placed on the implementation and impacts of technological change (see e.g. Cragg et al., 2011; Koh et al., 2009). Here, the focus is on SME competence transformation as a result of changes in the business environment, which is a relevant viewpoint considering the number and importance of SMEs for local economies (Eurostat, 2011). The study presents, via three different perspectives, the effects, the actions, and the transformation, the paths of competence in the forest industry in Finland.

The empirical research includes data from 13 interviews including public actors – e.g. operators in offices of regional business services mediating structural change, established SMEs, and new start-up micro firms (see Section 3.4.4) from the area of the Southern-Finnish region of Kymenlaakso. Kymenlaakso was selected, because it has suffered considerable structural

changes in locally important industries, such as the marine, machine, and the forest and paper industry.

Concerning the dissertation, the research offers views on public change management and how competencies are transformed as a consequence of changes. The publication also evaluates the competencies which seem to support SME survival, and additionally provides an insight into competencies that enable transference to other contexts or into other industries.

The main findings

The study demonstrated that SMEs develop their business in response to external changes and are able to transform their competencies to meet changed circumstances. Furthermore, start-up firms base their business on formerly acquired skills and competencies, but need more business skills. In both groups, positive attitudes towards the change process seem to affect the success of the SMEs, and systematic management of the change process leads to long-lasting effects. An important finding is that public actors manage structural change, but from the perspective of entrepreneurs, these actions do not appear to meet the needs of SMEs and micro companies.

Public actors have taken a strong role in managing industrial structural change in the long term. Their aim is for the economic structure to become diversified, with medium-sized companies in different fields, as well as an increase in the number of small companies. Two strategies were identified as regards the public support necessary to develop new competencies in organisations: first, attracting suitable, independent companies from outside the area, and second, supporting established SMEs' growth and competence development through public training programs and activities specifically targeted to individual companies. We found that many existing SMEs and new start-up entrepreneurs were not aware of the role of the public actors in strategic change management. Public actions specifically directed to regional SMEs were commonly seen as unsuitable, slow, bureaucratic and ineffective.

The studied established SMEs had operated over many decades, and thus they had met at least one change situation. The firms actively transformed their competencies and searched for new opportunities in the changed situation to secure the continuity of their business. The transformation of competencies had occurred through specialisation or expansion of existing competencies, or the change had enabled completely new operations. In addition, by combining resources they had achieved competencies which enabled innovations. The management of the SMEs had a vision to guide the development of their companies, and the employees had adjusted their skills to the changed environment by changing their attitudes, and developing and increasing their competencies. Moreover, the SMEs seemed to have experienced that effective job performance combines professional work, leisure skills, and other competencies, which thus form the holistic individual competencies.

The start-up firms were started by people who had been made redundant when the paper mill shut down. They saw structural change partly as a positive issue, because it enabled holistic development of the entrepreneur's competencies. All the new start-ups based their business on existing professional competencies from former occupations or hobbies. Some competencies needed to be up-to-date, deepened or extended when starting up a business, e.g. business competence, attitude changes for entrepreneurship, and the development of personal networks. As a joint finding in all groups, competencies needed to be extended from past and present activities to future strategic possibilities; the study highlighted the need for an attitude change for continuous learning at all levels: the employees, managers, and public actors.

The public actors trusted the national educational system when we explored the competence transformation paths, and additionally the public actors expected to receive specific training requests from the firms to improve and transform SMEs' skills and competencies. However, established SMEs preferred internal training of personnel in the utilisation of new machinery, the expansion of operations into new areas, and transmission of tacit knowledge. The development of managers, however, had been done through external training. Altogether, the SME managers felt that the transformation paths to the required competencies are easy to find, once the direction is known. In a new situation, a change of attitudes is required from everybody; managers in the practices of the organisation and employees in learning to utilise new machinery. The new start-up enterprises based their transformation on nurturing dormant competencies and emphasising personal interests that the entrepreneur believed in. The acquisition of a specific new competence is driven by personal interest, and is usually done by self-study on a need basis, either through the Internet or personal networks.

Main contributions

The study complements existing SME innovation and change management literature by emphasising the competence transformation view of the change process. More specifically, the study presents a firm-level, bottom-up approach instead of the often discussed, macro-economic, industry sector point of view on structural changes and industrial restructuring. Firstly, as Boonstra (2004) states, the SMEs have actively transformed their skills and competencies and searched for novel opportunities in the change situations in order to secure the continuity of their business; however, new start-ups need more business competencies. Secondly, all the firms studied have transformed their competencies through specialisation or expansion of existing competencies, or the change has enabled completely new operations in order to achieve necessary organisational rapidity, flexibility, and focus on customers (Kanter, 1989). In addition to Kanter's statements (1989),

the study highlights, as an organisational demand, that the attitude towards changes needs to be positive, embracing the future, rather than clinging to the past. Furthermore, the public actors have followed a proactive entrepreneurship development policy (Bagchi-Sen, 2001; Bridge et al., 2003) trying to influence changes regionally (Robbins and Judge, 2007), but existing SMEs and new start-ups were not aware of the role of the public actors in change management.

The study provides several managerial implications. Firstly, SMEs seem to achieve a successful outcome by modifying their firm's operations on the basis of existing competencies and adapting them to new sectors. In addition, a positive attitude towards change and a systematic management of the change process seem to affect the success of SMEs and leads to long-lasting effects. In a change situation, organisations need innovative thinking and courage to see future possibilities on both organisational and individual levels. Secondly, the clear role of a leader is important in implementing the change in an organisational network. Thirdly, as a social and institutional implication, the public actors need to inform the private enterprises better about their operations concerning structural changes and to broaden common awareness of regional development operations.

4.6 Main findings of the publications

This section briefly collects the publication main findings, more information in Table 7 below.

The findings from previous research reviews indicate that to gain better performance and competitive advantage, proper managerial competencies are needed in the first place in order to identify a firm's strategy, critical processes, and resources for the desired outcomes. Secondly, findings from the literature review show that competencies on an individual and SME level consist of generic, individual, and job-specific competencies; they also require individual capital in social context and relationships, and competencies for the future of the business together with readiness for changing conditions.

Referring to the empirical research context – changing business environments - the findings stress that specific competencies were found in Russian SMEs such as entrepreneurial competencies embedded in every person in the firm, and individual and open-minded network competencies towards external partners in order to survive in a crisis. When comparing Russian and Finnish SMEs as regards entrepreneurial processes, it was indicated that some Finnish firms suffered various competence traps, which have led to neglecting the opportunity discovery and exploitation phases, and a lack of vision concerning the future. Operating only on an every-day business level without any firm internal and external development may result in reducing a firm's operations. In order to survive, firms need continuous compe-

Table 7. Summary of the publications in the thesis

	Publica- tion 1	Publica- tion 2	Publica- tion 3	Publica- tion 4	Publica- tion 5
Title	A literature overview of competence identification in SMEs	Survival competence in Russian SMEs in a changing business environment	Survival skills in SME - continuous competence renewing and opportunity scanning	Entrepreneurial competencies in innovative SMEs	SME competence transformation – a case study on industrial structural change
Authors	Kyllikki Taipale-Erävala and Hannele Lampela	Kyllikki Taipale-Erävala, Pia Heilmann and Hannele Lampela	Kyllikki Taipale-Erävala, Hannele Lampela and Pia Heilmann	Kyllikki Taipale-Erävala, Kaisa Henttonen and Hannele Lampela	Kyllikki Taipale-Erävala, Pia Heilmann and Hannele Lampela
Objective	Describes how competencies are identified in literature in SMEs, and presents common themes related to human capital and competencies.	Explores the survival competencies enabling Russian SMEs to conduct business in change situations.	Studies how Russian and Finnish SMEs react in drastic business environmental changes and the part competencies play in business survival.	Identifies the specific entrepreneurial competencies in successfully innovating SMEs.	Illustrates how competencies are transformed and the role of public actors in industrial, structural change.
Role in dissertation	Pre-study of identified competencies in SMEs. Summarises the competencies needed for better performance / competitive advance.	Provides the internal and external competencies for SMEs to survive through changes, and how change influences competence transference.	Identifies by comparison the holistic survival competencies in SMEs, and requisite competencies in opportunity exploitation.	Deepens the concept of successful entrepreneurial competencies needed in entrepreneurial processes and in business transfer to other industries/contexts.	Shows the means and paths of competence transformation, and resources in industrial, structural, change situations.
Level of analysis	Individual, firm	Individual, firm	Individual, firm	Individual	Firm
Research approach	Literature review	Qualitative, interpretative	Qualitative, comparative, interpretative	Qualitative, template analysis	Qualitative, interpretative, triangular

	Publica- tion 1	Publica- tion 2	Publica- tion 3	Publica- tion 4	Publica- tion 5
Empirical data	Literature sample of 22 journal article	Focused, semi-structured interviews with 10 Russian SMEs in forest and Metal industries.	Focused, semi-structured interviews with 10 Finnish and 10 Russian SMEs (same sample as in publication 2) in forest and metal industries	Semi-structural interviews with 13 Finnish innovative forest industry-related SMEs	Semi-structured interviews with 3 public actors, 6 established SMEs and 4 start-ups in the forest industry in Finland
Main findings	Identifies generic competence, individual competence in social relationships, competencies for the future related to managerial competencies, and presents common themes related to human capital in SMEs.	Entrepreneurial competencies embedded in every person in the firm plus individual and open-minded network competencies towards external partners are needed for survival in crisis situations.	The results of the comparative study indicate open-mindedness and fluent external skills in Russian SMEs, and passive behaviour including difficulties in the entrepreneurial process in renewing business and competencies in Finnish SMEs.	In innovative SMEs the following were identified; open-minded ability and development-friendly mindset embedded in individual competencies; purposeful public image competence, and a networking competence attitude to cooperate beneficially with all partners.	Established SMEs develop competencies in response to external changes, start-ups base their business on formerly acquired, renewal of skills, and public actors manage change without meeting the needs of SMEs.
Key contribution	Inserts into the literature concrete descriptions of what the competencies in SMEs are, and helps managers to identify important competence needs and development areas. Provides common themes of human capital and key messages for better performance.	Offers an insight into the competencies needed for business to survive and those that can be transferred in changing conditions in Russian SMEs.	Stresses the skill of continuous competence renewal, activity in environmental scanning, and a forward looking attitude to opportunity exploration and exploitation in entrepreneurial processes.	Highlights that extroversion competencies dominate in innovative SMEs. Extends recent literature to a detailed level in entrepreneurial competencies and offers a framework for typical entrepreneurial competencies.	Provides insights into public actors, established SMEs and new start-ups as regards into structural change management. Prefaces how and what competencies can be transferred into other contexts or into other industries.

tence renewal, activity in environmental scanning, and a forward looking attitude to opportunity exploration and exploitation. Additionally, empirical research emphasises the important role of every individual in a firm.

Furthermore, empirical research contributes to the concept of the entrepreneurial competencies needed in successful and innovative SMEs. Extroversion competencies were highlighted as well as an open-minded ability and a development-friendly mind-set that are embedded in the individual's competencies. Furthermore, competence in creating a purposeful public image that can be used as a tool to accelerate penetration into the markets is recommended. In addition, a two-way networking competence indicates an ability to cooperate beneficially with all partners, and thus a consideration for other companies, which strengthens the trust between various partners.

As a consequence of changes, a firm may consider moving its business to another field of industry, and competencies must then be transformed in alignment with the change in business management. Competencies are transformed by updating, deepening, extending former ones, or acquiring totally new skills and competencies. The role of a positive attitude towards change process affects the success of the SMEs, and systematic management of the change process leading to long-lasting effects.

5. DISCUSSION AND CONCLUSIONS

The objective of the study is to provide new knowledge regarding SME survival competencies in changing business environments by exploring and describing the support competencies that enable long-term business operations. In the literature, SME survival competencies and skills are generally discussed as separate issues, and there is a need to address the more holistic, comprehensive, firm-level view of survival competencies, which is a novel approach, and is offered by this study. With these competencies, SMEs are able to perform their business continuously despite the various demands that changing environments bring about. The study has approached the phenomenon by studying the necessary survival competencies related to changing business environments, and furthermore, studied how specific competencies enable survival and their role in business transformation into other contexts or industries. The results are presented in five publications (see Part II), and as a summary in the following section in relationship to the research questions. This final section presents theoretically and practically a holistic view of survival competencies in SMEs with reference to the research questions. The thesis concludes with an evaluation of the study and suggestions for further studies are also proposed.

5.1 Summary of the results with discussion

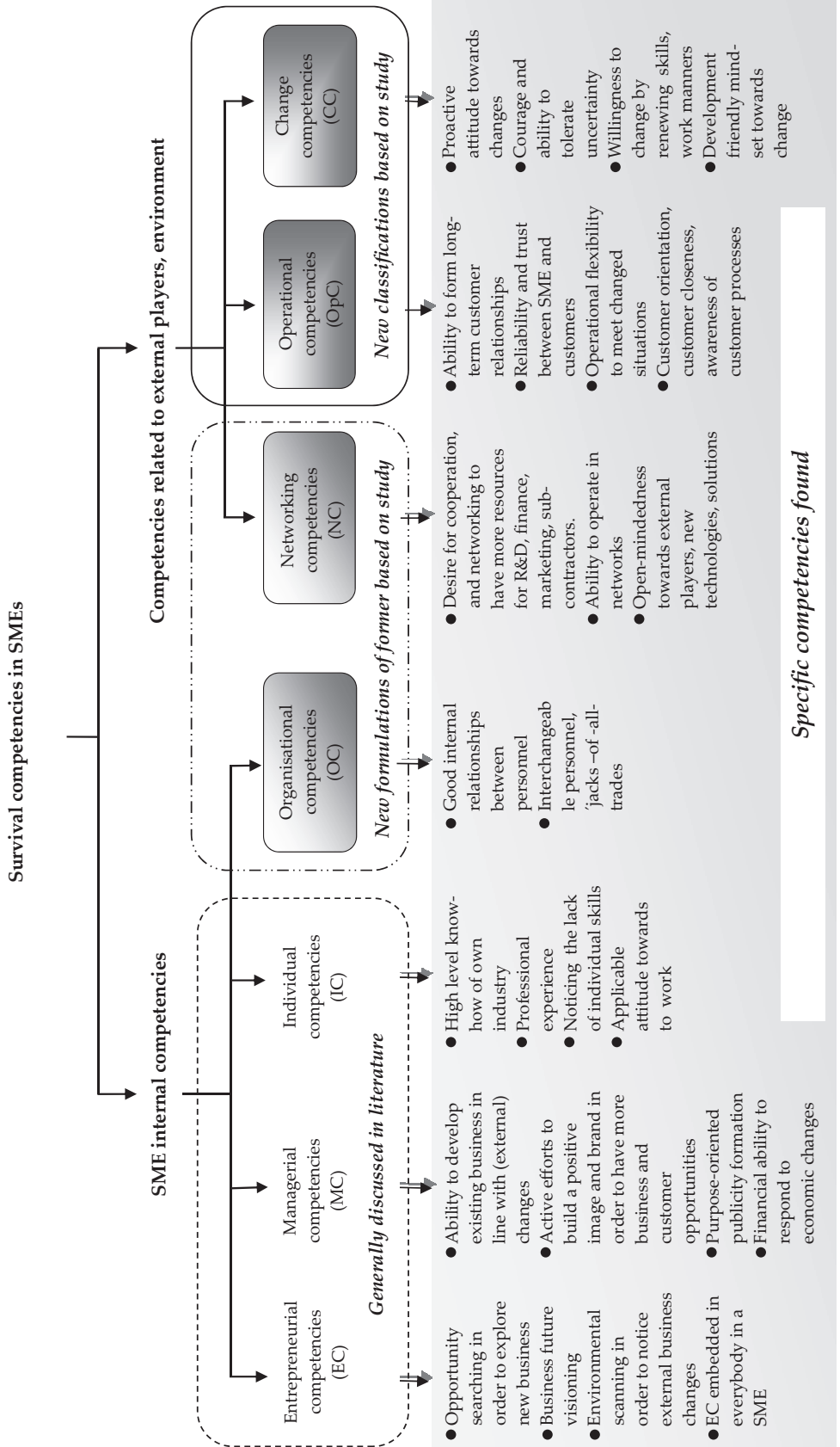
The theoretical summary of the survival competencies indicated as necessary for SMEs (see Section 2.3) concluded that some entrepreneurial attributes, entrepreneurial 'future' competencies, specific managerial competencies, and networking competencies lead to continuity in business operations. These competencies are connected in general to entrepreneurs/managers, but to form a firm-level view of survival competencies, individual and organisational competencies are discussed together as generic, business supporting competencies (see Section 2.2.3).

The study completes the theoretical summary with empirical findings, based on the publication results in Section 4. The survival competencies of SMEs found both from reviewing theoretical literature and from the empirical findings are presented in Figure 11 below. SME survival competencies are divided into two main classes (based on the classification in Section 2.3.2): 1) Internal influences the firm (internal competencies) and 2) External influences on a firm (competencies related to external players, environment). On the left of Figure 11, a framework for the survival competencies that are generally discussed in literature is presented, such as Entrepreneurial, Managerial and Individual competencies are identified as those competencies involved with the contribution of individuals to enable business continuity. In the centre is a framework for Organisational and Networking competencies,

identifying the firm-level survival competencies in an organisation. Classified competencies are commonly discussed in literature, although the cases have revealed specific new formulations for the former contents of these, and therefore they are categorised together. Finally, on the right is a framework of process oriented survival competencies, such as Operational and Change competencies, which have not been regarded in the previous literature in such formulations to the author's knowledge, and are thus a result of the present study. Operational competencies illustrate the operational abilities by which a firm may achieve continuity in the markets. Change competencies are competencies, by which firms have survived through different business changes. Additionally, the specific survival competencies found in the studied cases are expressed under each competence category.

To examine closer the specific survival competencies found, and also to deduce their influence on SME business survival and business continuity, the competencies are collected in the competence matrix (Matrix 1, *Empirical specific survival competencies in SMEs*, see the last part of the thesis). These competencies are from all the firms in the research cases, i.e. samples A, B, C, and D. The titles of the competence categories are similar to theoretical and empirical combination (Figure 11), and introduce the competencies of Entrepreneurial, Managerial, Individual, Organisational, Networking, Operational and Change competencies. The left column shows sample numbers and the identification number of each firm as well as the year establishment for each firm. To evaluate the business changes a firm has encountered, and successfully dealt with; the year of establishment, to a certain extent, gives information on the business environmental changes. The first sample (A) is a Russian SME (RU) that has undergone political and economic changes in 1991, 1998, and between 2008 and 2009. All the Finnish SMEs have generally suffered a financial crisis in 1991 and 1992, and industrial structural changes since the 1980s. In addition, a sample specific, selection criterion identifies the changes encountered. For example, firms in sample B of the Finnish SMEs (FI), operated with the closure of a paper mill in 2011, and additionally, have also operated in an area that has suffered from various industrial structural changes. Sample C (INNO) shows the competencies studied in innovative Finnish SMEs, and last sample D (TRANS) illustrates survival competencies in a Finnish SME going through various industrial and structural changes in the forest industry since 1990. For example, the firm A/2 RU has met all the selection criteria, and B/3 FI has operated since 1944 and faced several economic and structural changes. The identified competencies based on the data are highlighted in green indicating that the firm has emphasised the competence in question as having positive effects on the firm's ability to survive. The red cells, in turn, indicate that the firm saw this highlighted competence as not important for survival. If the interviewers or secondary data had no indication on the issue mentioned, the cell is colourless.

Figure 11. Theoretical and empirical survival competencies found in SMEs.



Firstly, SME internal competencies such as entrepreneurial, managerial, and individual competencies are discussed. The findings (Matrix 1) strongly highlight the importance of *entrepreneurial competencies (EC)* as survival issues in SMEs, and thus support the former studies (e.g. Loué and Baronet, 2012; Mitchelmore and Rowley, 2010). Shane (2003) also emphasises EC as being crucial to the ability to face continual states of change and disequilibrium in the economy, which, therefore constantly offers new business opportunities. EC are in general connected to individual entrepreneurs. The empirical findings, however, emphasise that in SMEs, which survived through changes, EC are embedded in all of its personnel, both the entrepreneurs/managers and the employees. Former studies (Loué and Baronet, 2012; Mitchelmore and Rowley, 2010; Shane, 2003) stress EC as belonging to the entrepreneurs, but the study contributes to this former literature by emphasising that for business survival all of the SME's personnel need to have EC. Naturally, the firm's vision for its business future belongs to entrepreneurs, but business environmental scanning; change observation and new opportunity recognition seem to be needed as the basic competencies of every person in an SME.

When looking closely at different samples, innovative SMEs (INNO) seem to be the ones that have mastered EC competencies the best, which explains their excellent ability to exploit new technological business opportunities offered via Schumpeterian innovation theory (Schumpeter, 1934), i.e. from changes in technological, political, regulatory, social, and demographic situations. Innovative SMEs have been successful in environmental scanning and opportunity searching, and furthermore, managed to execute opportunities profitably. The findings also underline the overall importance of these attributes for SMEs. Russian SMEs (RU) have also been active in scanning business environments, but when comparing Finnish SMEs (FI) in similar industrial situations, some of the Finnish SMEs are the opposite; they are very passive in opportunity searching. Operating in more hostile and dynamic business environments, as the Russian SMEs (RU) have done since the 1991 polity change, evidently enables better EC than when operating in a benign and stable environment (Ahmad et al., 2010) of the Finnish SMEs (FI). Some of the Finnish SMEs in the industrial transforming situations (TRANS) indicated that there was no need for opportunity searching, visioning, and environmental scanning. The field of the forest industry has a long history in Finland. As a quite stable field of business, it is considered in the forest industry that business movements take place slowly; changes occur locally, such as mills shutting down, rather than resonating within the whole field of operations e.g. in the communication industry. Despite the lack of awareness of EC in some of the firms studied, EC strength was found, in former studies, to have a great effect on business survival and EC significantly influence the recognition of new business opportunities. As an

addition to the previous literature, it seems that specifically the firm-level embedded EC such as continuous environmental scanning assist SMEs to recognise changes in business environment, and additionally assist firms to identify new business opportunities and exploit them. The earlier a firm recognises the changes, the more time it has to react to them.

When EC are focusing on a firm's future, the *managerial competencies (MC)* illustrate the skills and abilities to run the firm's everyday business and to maintain existing business, operations, finance, and marketing – that is to say- this has influence on the execution phases in the entrepreneurial process (Shane, 2003). Managerial competencies, focusing on planning, organising, controlling, and directing a firm, are perceived as crucial for an SME's performance (Capaldo et al., 2004; Javidan, 1998; Sanchez and Levine, 2009; Vos, 2005; Walsh and Linton, 2001) and positively affect value creation processes (Barney, 1991; Grant, 1996; Prahalad and Hamel, 1990). This study is in line with previous research indicating mostly positive findings on how to succeed, and especially highlighting the ability to develop existing business in line with external changes, which strengthens the business's strategic importance (see Berio and Harzallah, 2005; Sanchez, 2004). Furthermore, by examining the empirical findings in Matrix 1 it can thus be concluded that the ability to develop the business in a line with changes is a dominant survival ability for firms, and thus support managers' professional MC (see Hambrick and Mason, 1984; Lado et al., 1992). The matrix also presents competencies that were highlighted as not crucial by some Finnish SMEs (FI). SMEs either did not see managerial skills and capabilities as important for their business, or were unable to run and develop their firms in line with external changes. The firms were the same ones, which were already passive in environmental scanning and thus had neglected EC. One explanation for the passiveness might be the time of data collection, which fell soon after the mill was shut down and firms as subcontractors were confused about their business, which in turn describes their unpreparedness for the changes in the business environment.

Furthermore, in the Matrix 1 results there are some minor additions to MC as survival competencies. The ability to create a firm's publicity (i.e. image) as actively and purpose-oriented as possible was found to achieve more customers and therefore more markets, and to convince markets of the firm's existence and its products. This competence is a new addition to the theoretical discussion on SME marketing skills in the literature (O'Dwyer et al., 2009; Parry et al, 2012). It is an SME survival skill, especially indicated in innovative SMEs (INNO). Activeness and purpose-oriented publicity formation are logical in innovative SMEs, as they introduce their new products or services to markets, and thus position themselves into markets with the help of the publicity which the firms themselves create by their own actions. This ability was also indicated in SMEs that had, survived many economic

changes (TRANS). The firms in both samples either positioned or re-positioned themselves in the markets, and experienced that active and purpose-orientated publicity helped their penetration into markets. The ability seems thus to be connected to the market entry phase as a means to survive and successfully pass the critical penetration phase.

Similar with purpose-oriented, publicity activeness the study identified the financial ability to respond to economic changes as a business supporting skill (e.g. Carter and Van Auken, 2005; van Praag, 2003) and this was mostly highlighted in innovative SMEs (INNO). Innovative SMEs (INNO) introduce their new products/services to markets, and at the same time cover innovation costs. Thus, for the firms, it is important to acknowledge their financial ability to respond to economic changes to cover at the same time innovation costs and penetration costs. Overall, the study holds a similar view to that of previous research, which highlighted the importance of financial awareness as a business supporting skill. When summarising the influence of MC as business survival competencies, it can be concluded that MC have significant effect on an SME's ability to secure existing, everyday business in a line with external changes. Additionally, it can be concluded that active, purposefully-oriented publicity formation and financial awareness have supporting influences on business survival in the initial business introducing phases. Contrary to entrepreneurial competencies, which were highlighted as important for the whole firm including employees, managerial competences are crucial only for managers. The managers are alone responsible for MC, because they are responsible for SMEs' decisions, e.g. finance, publicity, etc. Therefore, managers need to acquire/have up-to-date high-level managerial skills, abilities, and attitudes to be able to support SME's business survival in any business phase a firm operates.

Individual competencies (IC) are widely discussed in SME literature. To separate competencies on an individual and firm level is difficult in SME literature, because of limited human resources and therefore overlapping, varied tasks. Generally, competencies seen on an individual level are related to a certain occupation and/or profession (Cheetham and Chivers, 1996, 1998; Hodgkinson and Issitt, 1995; Keen, 1992), and additionally connected to a functional, behaviour-based competency (Burgoyne, 1993; Finegold and Notabartolo, 2010; Spencer and Spencer, 1993). In SMEs specifically, individual competencies (skills and knowledge) are connected to performing a specified job effectively (Dubois, 1993; Gilgeous and Parveen, 2001). The results of the study are in line with former research, however, they determine the needed for a standard of individual competencies and raise the discussion onto the higher level in order to specify the necessary level of competence. In changing business situations 'the effective job competence' is not enough, because individual competencies need to be at an outstanding and technologically high level. As the implications of this study indicate, surviving in chang-

ing business environments requires a high-level of industrial know-how with appropriate attitude towards work, and professional experience. Highly skilled staff seem to constitute the basis for success and survival (Matrix 1). The technological and legislative changes offer new business opportunities (Schumpeter, 1934) in creative destruction and therefore a high standard of skills is needed to exploit new business opportunities. Within the forest industry, for example, the rise of biofuels has offered new business opportunities, but demanded at the same time high technological skills and abilities.

The empirical studies usually identified the lack of competencies in SMEs, and this study (see Matrix 1) agrees with former research. Nevertheless, the skill to acknowledge one's own lack of skills can be considered a positive skill of its own. Therefore, the study contributes to competence literature by introducing the concept of 'an ability to recognise gaps in knowledge, skills, attitudes'; acknowledging unskillfulness. This highlighted acknowledging of unskillfulness is an important feature, because by applying this competence it is possible to improve and develop proper skills and competencies to survive in changing situations - e.g. if a firm transforms its business into another field of industry, the industrial skills might be different than in its former field of operations. In sum, if the personnel in a firm do not know their lacking of competencies, it is impossible to improve the situation.

Secondly, competencies such as organisational, networking, operational, and change competencies are discussed (see Figure 11). Organisational competencies and Networking competencies, being partly internal competencies but also partly related to external players and the environment, are located in the same framework, due to their new formulations, which were found based on the empirical data. In the literature of competence-based management, *organisational competencies (OC)* highlight firms' value-creating processes with which market positions are achieved (Sanchez, 2004). Additionally, bundles of resources (Amit and Schoemaker, 1993; Barney, 1991; Penrose, 1959) and organisational core competencies (Prahalad and Hamel, 1990) enable large corporations to achieve competitive advantage. This study, in turn, shows that OC were not purely visible in SMEs, but were intertwined with the other types of competencies, e.g. networking competencies. The general discussion of organisational competencies seems thus better suited to large corporations where large amounts of resources can be re-organised according to various business operations and functions, and then face change situations with various resource units.

Additionally, due to the limited human resources in SMEs it is difficult to make a distinction between purely individual and purely organisational competencies as discussed in large companies, and therefore in SMEs we ought to discuss 'SME-level competencies'. When discussing organisational competencies in SMEs, there is a need to notice that an SME itself is one bundle of resources, which, due to the limited number of staff, seems to per-

form multiple tasks, and thus faces markets demands as a unity of multiple skills and abilities embodied in each employee. Therefore, it is suggested here that it is better to discuss 'SME-level competencies' rather than discussing organisational competencies in SMEs to achieve competitive advantage. To highlight the combination of competencies in SMEs the study outlined several specific 'SME-level competencies': good internal relationship between personnel; interchangeable personnel; and the need for 'jacks-of-all-trades'. Entrepreneurs are usually considered 'jacks-of-all-trades' (Lazear, 2003) being competent in many skills, but the study stretches the demand to address everyone in a firm. A limited number of competencies can be considered; on the one hand, a weakness for SMEs, but on the other hand the demand to be able to handle multiple tasks implicates mastering various and versatile competencies at the same time. The low and non-bureaucratic organisational structures (Carson et al., 1995; Nooteboom, 1994) make interchangeable tasks and internal actions possible in SMEs.

Networking competencies (NC) consist of the desire to operate within networks, networking readiness, and an open-minded attitude towards external players that expand SME internal competencies in broader external directions. SMEs improve their limited competencies from outside the firm by acquiring the required skills and capabilities even for innovation and financing, which are considered the most central and sensitive issues for every firm's business. Innovation and networking are also combined in former research (e.g. Clifton et al., 2010; Gronum and Verreynne, 2012; Zeng et al., 2010) as features supporting SME business. This study offers a new dimension on to how to enable cooperation and networking. The mental expansion outside the borders of a firm is possible with an open-minded attitude; this is a dominating feature in innovative SMEs (see Matrix 1) and in firms that transformed their business under industrial structural changes (TRANS). When comparing Russian (RU) and Finnish (FI) SMEs it was found that the Russians, overall, are more prepared in networking with open-mindedness than the Finnish in similar conditions. The small business culture is quite new in Russia due to the polity change in 1991, and SMEs are keen to establish their product/services in the markets, and are therefore more open to establish new relationship to secure business success and survival.

Inter-organisational cooperation (Lambert and Cooper, 2000; Mentzer et al., 2000) and inter-organisational network competencies (see Ferrer et al., 2009) are both close to organisational competencies (discussed above) and concerned with resource and information sharing. As discussed above within OC in SMEs, inter-organisational network competencies are close to 'SME-level competencies' based on the limited resources and low structures in the organisation. This additionally confirms the study results that OC are not purely identified in SMEs, but may be intertwined with the other types of competencies, e.g. networking competencies. As an implica-

tion, the study introduces the term of ‘SME-level competencies’ in order to face external challenges as a unity. As was earlier presented, the high-level individual (professional) competencies were identified as crucial for SME success and survival, and implicated that ‘SME-level competencies’, consisting of OC/NC, determine, in turn, their coverage. Furthermore, combined OC/NC help SMEs to supplement their limited resources with resources from outside a firm, but the firms need an open-minded mentality and a readiness for networking.

The third framework includes Operational and Change competencies focusing purely on external players and the environment. Compared to previous literature these new classifications of competencies include the business operational issues (Operational competencies) enabling business survival, and competencies closely related to surviving in changes (Change Competencies, CC). **Operational competencies (OpC)** include flexibility in changed situations, ability to form long-term customer relations based on reliability and trust, and customer orientated operations. The identified specific survival competencies reflect the skills and competencies, which are discussed, in general, within SMEs operations (Simpson et al., 2006; Storey, 2000). Due to their small size, SMEs are considered to be flexible, agile, and fast when responding to changed customer demands, and thus responding to changed business environments. The study supports earlier research findings on the operations by which SMEs are likely to achieve business longevity and, adds to the literature by presenting the classification of these needed operational competencies to succeed. ‘SME-level competencies’ form the specific *internal* operational competencies of a firm, and the operational competencies (OpC), in turn, set the specific *external* operational competencies of a firm – competencies mainly related to customers.

Change competencies (CC) focus directly on crucial survival competencies to tackle changes in the business environment. Change competencies are a combination of features of entrepreneurship (courage and toleration for uncertainty), managing entrepreneurial process (see also Shane, 2003) and personal willingness to renew. Personal features like risk-taking and self-confidence (see McClelland, 1961; Meredith et al., 1982) express the courage to face an ignorance of the future. These features were connected to a proactive attitude to influence and shape the future as much as possible. The interesting finding is the willingness to change by renewing skills, and adopt work practices with a development-friendly attitude. More specifically, employees in some Russian SMEs (RU) (Matrix 1) having development-friendly mind-set were keen to advance their personal skills and competencies even in their personal time and at their own costing so as to be personally competent in the labour market. Respectively, employees in some Finnish SMEs (FI) counted on SME owners/managers’ to be concerned with developing employees’ skills and competencies, and thus did not voluntarily

renew their own skills to any high degree. On the other hand, Finnish SME (FI) owners/managers did not put any effort into developing competence and thus, experienced various lacks in competence (Ahuja and Lampert, 2001; Danneels, 2007; Senaratne and Wang, 2009; Vähämäki, 2005), which prevented the business from renewing and executing new business opportunities. Thus, some of the Finnish SMEs (FI) appear to be in such a situation where the firms themselves are not interested in renewing employees' skills and abilities, and employees themselves are not willing to change either. Due to a lack of competence and an unwillingness to change, the Finnish SMEs (FI) operate only in everyday business action without repositioning and renewing the firm (see Section 4.3). The incomplete circulation without returning to the opportunity exploration phases in entrepreneurial process (see Section 4.3, Figure 10) means in practice a lack of new business opportunities, and thus may complicate a firm's business continuity in the future. Therefore, for SMEs it is significantly crucial to be willing to change and possess development-friendly mind-set towards change. The attitude towards change needs to be proactive; a firm needs to be able to take charge of change rather than the change taking control of the firm. The CC, as behavioural competencies, are furthermore crucial for all of the personnel in a firm, both for owners/managers and for employees, in order to enable business survival by up-to-date competencies. In sum, CC seem to assure constant competence renewing and prevent SMEs from experiencing a lack of competencies. The owners/managers are responsible for developing skills and attitudes related to their business operations, but employees are also responsible for the foundation of their own professional competence, so that both sides together aim at developing the firm.

When analysing the competencies within other categories (Matrix 1), some of the Finnish SMEs (FI), along with having poor change competencies, were passive in environmental scanning (EC) and were additionally incapable of developing existing business in line with external changes (MC). In practice, their business seems to be at high risk of collapsing, based on both the theory and empirical findings for business survival. To ensure the accuracy of the arguments, a further longitudinal study is needed.

5.2 Answers to research questions

As a summary of competencies dealt with in the above, it is indicated that the phenomenon of specific survival competencies in SMEs includes various competencies that need to be utilised together;

- to assist the recognition of changes in time to prepare for the changes, and assist further the discovery of new business opportunities and to exploit them if needed;
- to secure smooth running of existing business;

- to determine the required standard and coverage of competencies embedded in each individual;
- to form specific internal operational competencies to complement limited resources as a unity;
- to set external operational competencies to success in changes with customers;
- to assure constant competence renewing in order to avoid deficiencies in competencies.

In other words, specific competencies enable SMEs to survive changes in business environments, firstly by monitoring external changes and their possible effects towards internal business, and secondly, by adjusting internal firms' competencies towards business environmental changes. To express at more detailed level the competencies supporting survival in changing business environments and how they enable business survival, Table 8 below summarises the answer to the main research question of the dissertation (i.e. *How do specific competencies enable SMEs to survive changes in their business environments?*). Table 8 additionally presents the importance and effect of specific survival competencies in question, and furthermore the individuals to whom the competence in question belongs or who is in charge of taking care of it. The final column highlights the importance and effect of every individual in an SME, and concludes that everyone needs to be aware of various competencies. Furthermore, the study highlights the importance of versatile skill-based and behaviour-based competencies within SME staff. In the current literature, competencies are in general viewed as influencing business from the point of view of managers and what they are required to possess, but this study, in contrast, raises the importance of all individuals influencing an SME's successful performance by their competencies.

Secondly, the study answers the first sub-question of the research: *What specific competencies support SMEs' survival through change situations?* Figure 12 below presents supporting competencies in interactions between internal and external environments. The changes are dynamic by nature and therefore the competencies supporting survival need to be dynamic as well. As discussed earlier, in the centre of Figure 12 are the high-level (professional) individual competencies regardless of the position of the person. The proper, modern SME internal competencies and ability to perform interchangeable, versatile tasks in business operations create the competence basis of a firm; interchangeable personnel with versatile skills and abilities enables constant operations during e.g. sick leave and the balancing of production loads. The competencies thus form an internally strong firm with which to face challenges of the external environment. Furthermore, by continuous environment scanning an SME observes the business environment and changes, safeguards new opportunity identification, and thus safeguards possibilities

Table 8. Specific competencies enabling survival, their effects and the individuals involved

Category of survival competence	Specific survival competence	How they enable business survival?	Importance and effect	Competence embedded in/ in charge to take care
Entrepreneurial competencies	Continuous environmental scanning.	Assist the recognition of changes. Assist the discovery of new business opportunities in order to exploit them.	Enables a firm to prepare better and in time for business changes. Create a cluster of possible new innovations to exploit when/if needed	Owners/ managers and employees
Managerial competencies	Ability to develop existing business in line with external changes.	Secure smooth running of existing business.	Secure every-day business, and its adjustment according to changes	Owners/ managers
Individual competencies	High-level individual (professional) competencies.	Determine the necessary standard and coverage for SME-level competencies.	Are the bases of a firm's competencies	Owners/ managers and employees
SME-level competencies	The combination of competencies. Open-minded mentality and readiness for networking.	Form specific internal operational competencies.	Form the competence power of a firm. Enable to complement limited resources.	Owners/ managers and employees
Operational competencies	E.g. flexibility, customer closeness.	Set specific external operational competencies.	Respond to external demands to establish long-term customer relationships.	Owners/ managers and employees
Change competencies	Willingness to change and renew.	Assure constant competence renewing values and skills	Avoid the firm to falling into competence traps.	Owners/ managers and employees

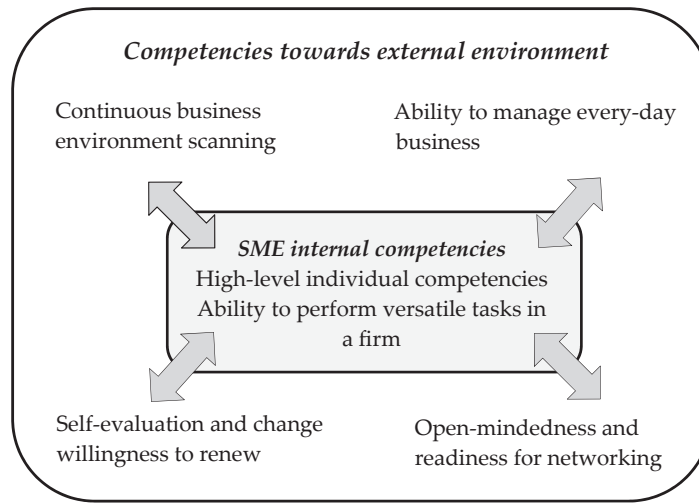


Figure 12. Supporting competencies.

for new business exploitation for the future. Additionally, with the ability to manage every-day business, an enterprise responds to customers' orders and wishes, and therefore builds trust and closeness between the firm and the customers. Moreover, with 'an ability to recognise gaps in knowledge, skills, attitudes' - that is to say self-evaluation - and with the willingness to renew, a firm takes care of proper, continuous, and up-to-date individual competencies. Finally, an open-minded attitude, and a readiness for networking open up to SMEs external possibilities to improve and complete internal resources and competencies.

Thirdly, in the following, the study answers the second sub-research question of how competencies are transformed as a consequence of internal or external changes. In constant business environmental changes, competencies have to change as well. Internal innovation, new production methods, new customer needs, and institutional changes; all of these need new skills and competencies. The study found that competencies are mainly transformed through specialisation or expansion of existing competencies by refreshing (updating, deepening and extending former ones), or acquiring totally new ones (see Section 4.5). Basically, competence transformation demands an ability to recognise gaps in knowledge, skills, and attitudes. After noticing the deficiencies in competencies, competence transformation (i.e. specialising, updating, deepening, extending the competencies, acquiring new ones) needs to be organised. Based on empirical studies, individual skills and competencies were refreshed based on former skills, so that new, up-to-date professional skills and abilities were obtained through specialised training inside the firm for employees, and new skills for owners/managers were acquired through external training operators (TRANS). The compe-

tence transformation is thus organised based on training needs, which in turn, are based on the chosen new business in question. The competence transformation process needs to be, therefore, well organised and managed within a firm, or it may be an individual choice to improve personal qualifications. The employees in Russian SMEs (RU) have had to acquire totally new professional skills based on new operations in the post-socialism era in order to succeed better in the labour market. Some qualifications and skills were so modern that educational institutes in Russia were unable to teach and train students in their academies e.g. information technology skills, and individuals were forced to look for training choices from alternative sources at their own cost. In addition to systematic management by clear role of a leader in implementing the change, a positive attitude towards the change is needed. As Spencer and Spencer (1993) stated in their iceberg competence model, the self-concept, attitudes, and values as hidden competencies are semi-difficult to develop. Nevertheless, attitude development is possible, if an individual has a positive attitude towards the change. However, the educational schools and training institutes seem to underestimate the importance of attitude development by focusing mostly on educating and training skill-based competence (see Brockmann et al., 2008; Winterton et al., 2005) instead of including behaviour-based competencies (see Spencer and Spencer, 1993) in teaching programs. The employees themselves and additionally the owners/managers are thus responsible for developing positive attitude and willingness to change. Moreover, to think innovatively and to face bravely future possibilities is necessary both on the SME level and individual levels. The thesis thus encourages educational and training institutes to include the concept of attitude development in their syllabuses, and to teach and to train change competencies (CC).

Finally, the study answers: *What competencies enable SMEs to make a transfer to other industries* and operate successfully in these industries? Sometimes a field of industry meets such drastic local or regional changes due, for example, to the closure of a mill or changed customer demand that the entrepreneur faces a situation to either go out of business or to transform the business into another field of industry. Some of the SMEs studied had changed their operations from the forest industry into the energy industry with great success. Referring to Figure 12 (*Supporting competencies*) it can be concluded that firstly, continuous opportunity scanning offers possibilities to exploit new business opportunities, and thus highlights the importance of entrepreneurial competencies in order to prepare for changes. Secondly, as specific competencies, change competencies, proactive attitude towards changes, courage, tolerance of uncertainty, and willingness to renew skills, make it mentally possible for a firm to break away from the past. Thirdly, SMEs' internal, high-level individual, professional competencies are specific in a certain field of industry and therefore they need to be renewed

in order to be suitable for the chosen field of industry. If the chosen industry is close to the former one, the demand for the renewal of competencies is smaller. As an answer to the third sub-question, firstly, the study introduces a preliminary process model (Figure 13 below) of competencies helping an SME to make a business transfer to another industry or to other contexts.

The same preliminary process model additionally describes the competencies that enable SMEs to operate efficiently in a chosen industry or in a chosen context. Thus, the process model combines competencies enabling a transfer as well as competencies enabling SMEs to operate efficiently in other contexts or in other industries. The initial model is based on the dominant supporting competencies (see Figure 12) in change situations. Firstly, on the left the competencies enabling SMEs to make a transfer to other contexts or into other industries are presented: entrepreneurial competencies (new opportunity scanning), change competencies (courage, willingness to change), and high-level individual, professional competencies. All of the specific competencies are necessary as a basis for the transformation phase, and on the right-side of the model the competencies are outlined that are needed to run the business in the chosen field of industry: managerial competencies to manage every-day business, self-evaluation, willingness to constantly renew skills and attitudes, open-mindedness, and network readiness to supplement limited resources and skills, if needed. Because this is a preliminary model, validating it needs further research, and thus offers an opportunity for a proposal for further research.

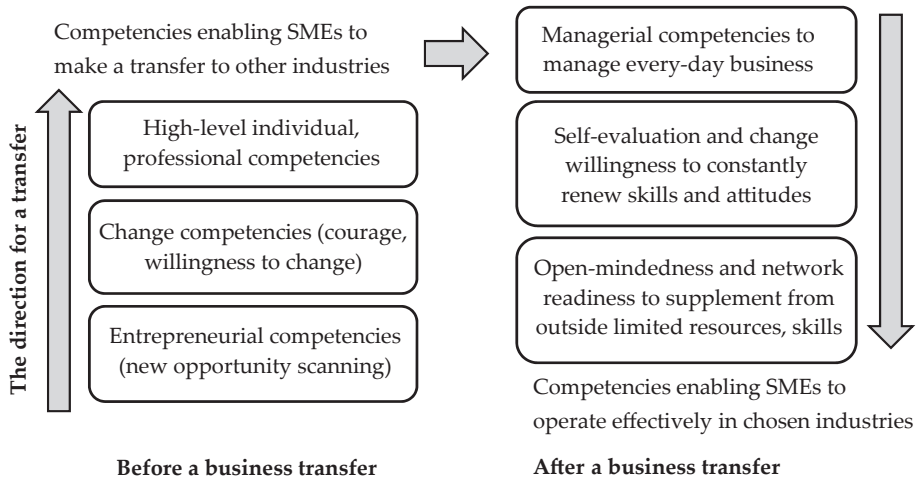
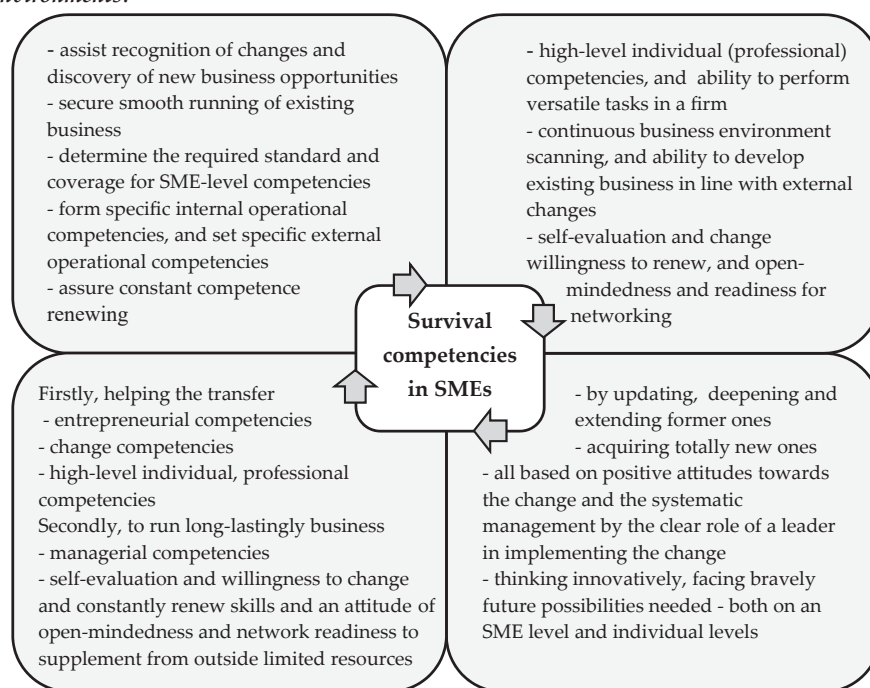


Figure 13. Preliminary process model for a business transfer to another field of industry.

Finally, the figure concerning survival competencies below (Figure 14) summarises jointly the research questions and answers based on empirical studies and former research. The purpose of the thesis was to explore and describe survival competencies in SMEs in changing business environment. To complete the main research question three sub-research questions were addressed concerning competencies supporting business in SMEs, the transferring features of those competencies, and the transferability of supporting competencies to other context or field of industry.

The answers to the research questions in this thesis form a continuum of survival competencies referring to situations not only when transferring to a new field, but also when simply going through changes in the industry of operation.

How do specific survival competencies enable SMEs to survive changes in their business environments? *What specific competencies support SMEs survival in change situations?*



What competencies enable SMEs to make a transfer to other industries and operate effectively in these industries?

How are competencies transformed as a consequence of internal or external changes?

Figure 14. Summary of the dissertation results.

5.3 Theoretical contributions and implications

The topic of the thesis has been approached from an individual and a firm-level perspective to reach a holistic competence approach to SMEs. Competence and competencies dominate the theoretical background, entrepreneurship and entrepreneurial processes (Shane, 2003) set the basic framework features for SME business, and thirdly Schumpeterian innovation theory (Schumpeter, 1934) offers new business opportunities via economic changes.

Firstly, referring to the discussion on competence, the thesis adds to SME literature a versatile and rich picture of comprehensive survival competencies in small firms. In contrast to previous studies, which regarded competencies as business supporting skills and abilities (e.g. Forsman and Rantanen, 2011; Parry et al., 2012; Verhees and Meulenbergh, 2004; Zarako et al., 2013), this study combines separate business supporting skills and abilities, and presents a holistic perspective on SME survival competencies, and thus fills a gap in the literature. Initially, the study combines previously viewed educational, skill-based static competence (e.g. Biemans et al., 2004; Winterton et al., 2005) and behaviour-based, functional competency (e.g. Burgoyne, 1993; Spencer and Spencer, 1993); both equally targeting a firm's constant operations. Additionally, in contrast to earlier research concerned with the superior/effective performance aspect (Boyatzis, 1982; Klemp, 1980) this study determines the needed competence level of individual competencies for staff members to be able to perform various over-lapping tasks in SMEs regardless of their position. Individuals form together SME-level competencies, the internal survival competencies to face external changes in typically low organisational structures.

Previous literature introduces dynamic capabilities (Helfat et al., 2007; Teece et al., 1997) for organisations as a tool to successfully face external business changes, but this study, in turn, found the unsuitability of the concept of dynamic capabilities for SMEs because of the nature of the industry and its velocity. Dynamic capabilities seem to be more suitable in industries of the high-velocity. In addition, the requirement of multiple resources to face changes is unrealistic within the limited resources of SMEs (see Carson and Cromie, 1989). Therefore, it can be theoretically assumed that SMEs need a specific size-based approach when reviewing their embedded skills and competencies. A size-based approach mainly means focusing on firms employing on average at least four people (Lukács, 2005), and inspecting actions related to that scale. At the same time, the size-based approach thus challenges organisational competence theories, such as Prahalad and Hamel's (1990) core competencies by business units, based on a harmonised combination of multiple resources and skills, which is not suitable for the scale of SMEs' limited human resources.

Furthermore, the study maintains the view that many specific competencies need to be possessed and to be renewed by employees as well as the entrepreneur. Whereas the previous SME studies have mainly stressed the importance of the entrepreneur's influence on a firm's development (Berio and Harzallah, 2007; Sanchez, 2004), this study contributes an important addition that of the whole personnel influencing the survival of the business. Conceptually analysed this study brings entrepreneurship and entrepreneurial features closer together, and to some extent broadens the concept of entrepreneurship to the employee level. Moreover, the study also stresses the shared responsibility of everyone in an SME to take care of their own competencies and thus keep the firm's competencies up-to-date. Responsibility is generally only associated with the entrepreneurs. However, an SME needs to be seen as a team of people who possess entrepreneurial-like features and skills for business success, instead of being focused only on the entrepreneur, who is seen as taking care of everything.

Secondly, referring to competence classification, the dissertation introduces new perspectives into the generally discussed survival items in literature, such as entrepreneurial (Loué and Baronet, 2012; Mitchelmore and Rowley, 2010), managerial (Lado et al., 1992) and individual competencies – as discussed in the previous section. For individual competencies especially, the research emphasises the importance of 'an ability to recognise gaps in knowledge, skills, and attitudes'; i.e. acknowledgement of the lack of skills. Although some academic studies focus on the gaps as reasons for SME business failures (Hambrick and Mason, 1984; Sanchez, 2004), the ability to acknowledge the lack of skills helps SMEs to identify shortages of skills, capabilities, and attitudes, and thus enables them to develop and improve competencies, before falling into a competence gap.

Thirdly, the study proposes new formulations for previously discussed organisational and networking competencies, and combines them as SME-level competencies to include inter-organisational competencies and competencies towards external players to acquire and complement missing resources from networks. The previously discussed organisational competencies (Prahalad and Hamel, 1990) and networking competencies (Ferrer et al., 2009) focus mainly on inter-organisational cooperation highlighting resource and information sharing, and additionally concerning organisations divided into multiple bundles of resources (Amit and Schoemaker, 1993; Barney, 1991; Penrose, 1959) in order to achieve competitive advantage. In contrast to previous studies, the SME-level competencies present better internal functionality as a multiform combination of competencies, and additionally portray the important behavioural characteristics, such as open-mindedness and desire for cooperation, as a tool to strengthen missing internal competencies from external sources. SME-level competencies, in other words, face the external environment as a competent unity together with a desire to extend and acquire resources externally if needed.

Finally, the study concludes with new competence classifications, such as operational and change competencies in SMEs. Operational competencies contain the operational features with which a firm succeeds in business: long-term customer relationships, reliability/trust, flexibility, and customer orientation/closeness. In the SME literature, the customer orientation, amongst other things, is regarded as a critical determinant of performance (Sexton and Van Auken, 1982). All of these features are familiar in the former literature as separate survival items that characterise operations in SMEs, but in this study they have been classified under specific operational competencies. Therefore, this category is comprised of the combined critical operational competencies for SME survival, and enables SMEs to adopt successful operational abilities and features at the outset. Change competencies, in turn, are rarely identified in theories, and are presented here as a totally new competence category. Change competencies embody familiar features of entrepreneurs, such as courage and the ability to tolerate uncertainty, but at the same time highlight a demand to be embedded in everyone in the firm. As an addition to the previous literature, the study offers new information concerning the required competencies by which a firm may reduce possible change resistance (see Cray, 2002) from hindering business renewal.

As illustrated above, SME survival competencies are various and are embedded deeply and broadly in a firm. With these competencies, the firms studied have succeeded in continuing their business activities for a considerable time, even for several for decades. However, there were some cases where the case study businesses might have to cease in the future. As demonstrated in Matrix 1, some firms, mostly local or regionally operating Finnish sub-contractors in the forest industry, have neglected the continuous returning back to the business opportunity discovering phases in the entrepreneurial process (see Shane, 2003). Neglecting the need to constantly look for new business opportunities leads inevitably to decreased business over time, and is likely to cause the closure of the business. Storey (2000) states that "SMEs primary objective is survival" referring to how new firms are able to continue their operations within a given time (see Storey, 2000; 114) limiting the age of business. This study, however, has observed SMEs that have operated for a long time, and have given emphasis, from the point of view of business continuity, to the importance of constantly discovering new business opportunities and exposing them to evaluation in order to exploit new possibilities and business opportunities. In reference to the previous sentence, it is indicated in the study that these results are similar to those stated by Shane (2003) and Storey (2000). Consequently the study adds to the growing amount of literature emphasising the importance of discovering new business opportunities.

The forest industry and related industries, have suffered drastic business changes in the last few decades. Both the closure of mills and the moving

of production sites to low cost countries in South-America and China have had a strong influence on SMEs' operations locally and regionally. However, there is a need to perceive that these collapses are the consequences of economic development caused by structural changes, which simultaneously offer new business opportunities (Schumpeter, 1934). When a field of industry declines, new business opportunities arise, probably in other industries or in other contexts. For this transformation in business areas, the dissertation offers as transformational actions a method of how competencies can be transformed. It additionally presents a preliminary process model for a business transfer from one industry or context to another. The notable basic issue is business continuity; if one field of industry collapses, a firm may continue its business in another field of industry.

5.4 Practical implications

Firstly, the dissertation offers practical implications for SMEs, educational players, and institutional actors. Firstly, for the SMEs and individuals considering entrepreneurship, the study offers versatile and rich information concerning the competencies enabling continuous, long-term business. Figure 12 offers practical detailed knowledge of specific business supporting competencies. Additionally, a preliminary process model (Figure 13) shapes the framework of competencies enabling a business to transfer to another industry or into other contexts, if the business is in danger of collapsing due to too many drastic changes in the present business environment. As regards managerial implications, the study highlights the significant importance for SME owners/managers to constantly look for new business opportunities in conjunction with the overall scanning of the changes in the business environment; this is in order to be more prepared for possible business changes. The changes are constant, but proper preparation and proactive operations reduce the influence of the changes, and as a most important note, economic changes offer endlessly new business opportunities for exploitation.

Moreover, the study highlights the important part that the competencies of SME employees' play as notable influencers of a firm's performance. Previous studies have also highlighted this fact (e.g. Dubois, 1993; Gilgeous and Parveen, 2001), but SME managers need to be more conscious of employees' holistic competencies as having an influence on business results, and therefore develop/renew their employees' skills and abilities for the benefit of the whole firm. However, SME employees need to note that the responsibility for competence renewal should be as much on the employees as the employers. This may cause confusion in SMEs in situations where both employees and employers believe that competence renewal only starts from the employers' side. Additionally, managers and employees need to notice the holistic survival competencies embedded broadly in the firm. The most divergent contri-

bution of the study, i.e. the extending of some entrepreneurial competencies to be also embedded in employees, may be met with reservations. Entrepreneurs may feel their entrepreneurial position threatened, and employees may ignore the suggestion as inappropriate to the employee's side/requirements. However, the suggested competencies are related only to business environmental scanning on order to give a firm time to prepare for changes, and therefore, assist the SMEs' long-term operations and all employees' jobs. The deepest characteristics of entrepreneurship, such as risk taking and entrepreneurial independence still remain the prerogative of the entrepreneurs. Additionally, managerial competencies are the only competencies embedded in managers, the other remaining competencies or parts of other survival enabling competencies need to be embedded in all the individuals.

Secondly, the study raises the fact for educational players that there exists at many workplaces a lack of individual skills and capabilities. More specifically, there seems to be a lack of professional skills and suitable work attitudes, in addition to an unwillingness to renew individual skills and capabilities in many firms. Many countries have education and training systems of a high-standard that are well-appreciated, but the view of this thesis is that the schools and academies train and teach incomplete skills by neglecting to teach suitable work skills. Based on the empirical studies conducted in the study, the educational players, vocational schools, polytechnics and universities, seem to teach basic visible skills (see more Spencer and Spencer, 1993) without adequately training the hidden competencies such as behavioural features, attitudes, and values. Therefore, together with teaching basic professional skills, the educational players need to foster an ability for open-mindedness in e.g. new technologies, and a readiness to renew and refresh skills – that is to say – to promote a holistic view for competencies, including both skill-based competencies and behaviour-based, attitudinal competencies.

Furthermore, educational players need to notice that working in SMEs demands comprehensive working abilities and the ability to master diverse tasks. Educational programmes seem to be better able to meet the training expectations of large companies and seem to have neglected the needs of smaller ones. Therefore, the organisations of professional education and training need to change their syllabuses in order to offer a balanced education to all enterprises. As Penrose (1959) pointed out, the difference between small firms and large companies is like a comparison between a butterfly and a caterpillar, and therefore the difference in firm sizes needs to be noticed in educational forums as well. Along with educational reforms to accommodate different firm size requirements, the educational players have to be prepared to robustly increase the training of entrepreneurship and entrepreneurial skills, in order that more people will become interested in entrepreneurship.

Thirdly, the study suggests that public actors and regional entrepreneurship service offices need to change their operations to satisfy the needs of dif-

ferent firms and entrepreneurs (see Section 4.5). According to the empirical studies, the new start-up firms receive suitable and appropriate services, but established firms, when trying to modify their businesses and make changes, do not experience that they receive the necessary information and support from public entrepreneurship offices. Because SMEs are significant new job creators and employers, and therefore important for any country's economy, the public entrepreneurship offices need to target their support better in order to face the needs of established SMEs, and thereby assure the business continuity of these businesses. Public actors and institutions should allocate more general attention as well as financial resources to SMEs, and by focusing on supporting their operations, the public actors may achieve better and quicker profitable outputs for those actions that are maintained by tax revenues.

Moreover, public actors and institutions need to give stronger support to improving the existing SMEs' business possibilities, so that SMEs are more capable of meeting the expectations of societies. SME business possibilities and business development are connected to issues such as legislation and the entrepreneurial climate. Societies are responsible for developing a mentally favourable entrepreneurial climate and taking care that SMEs have favourable legislative, financial, and economic circumstances. Some of the SMEs studied were unwilling to renew their business, and one reason for this reluctance to change might be the various bureaucracy regulations and unsuitable demands made on SMEs. When a firm has established its operations in a field of industry, has applied for the many different permissions and qualifications needed for their operations and has finally broken into the market, the firm might be unwilling to renew its business because they have no wish to repeat the demands made by the bureaucratic jungle. Therefore, societies need to proportion their demands and legislation to an SME size.

5.5 The evaluation of the research

Lincoln and Guba (1985) have used the term trustworthiness to evaluate qualitative research. Particularly in constructionist research, such as this study, trustworthiness is the criterion used for evaluating the 'goodness' of the research (Eriksson and Kovalainen, 2008). A researcher needs to assure the readers of the validity of his/her research, and the trustworthiness offers a framework to support the argument that the research findings are 'worth paying attention to' (Lincoln and Guba, 1985). To examine and prove trustworthiness is especially important in inductive content analysis when the categories are created from the raw data instead of a theory-based categorisation framework (Elo et al., 2014). The empirical data in this thesis is processed mainly inductively, as a data-driven approach, and therefore trustworthiness is selected as a tool to assure the validity of the research.

Four components are used to assess trustworthiness: credibility, trans-

ferability, dependability, and confirmability (Lincoln and Guba, 1985). The trustworthiness components related to this particular study are presented below, and the following table, Table 9 provides information on the particular means by which the quality of the study has been secured. Table 9 presents the trustworthiness criteria and the method of addressing it.

Dependability

In natural sciences the reliability – a similar term used to dependability - means replicability, so that the research ought to be replicable under the same conditions, in other places, and during another time (Lincoln and Guba, 1982). In social sciences, however, dependability refers to the stability of the data over time and under different conditions (Elo et al., 2014). Therefore, it is important to give clear information about the principles and criteria used when selecting the participants and their main characteristics so that the transferability of the results to other contexts can be assessed (Moretti et al., 2011 in Elo et al., 2014). Thus, the researcher has to assure the reader that the research process has been logical, traceable, and documented. However, qualitative research accepts variations in the stability of the data and the consistency of the findings (Petty et al., 2012); a possible variation may originate from the passing of time, the researcher, and the research process itself when the interpretations were developed. It is therefore suggested that researchers provide an audit trail – a continuous documenting chain of the whole research process - of methods, documentation of data, and decisions about the research in order to enable a dependability judgement on the research process.

Confirmability

Confirmability refers to the quality of the results and the extent to which the interpretations of the study by the different researchers are the result of the interviewees, and the congruence of the study is confirmed or corroborated by other independent individuals (Elo et al., 2014). Qualitative research tends to assume that each researcher generates, unintentionally, a unique perspective as regards the study. However, the research results need to be based on the scientific nature of the study rather than depending on the researcher's opinion. In addition to independent reviewers, Guba (1981) states that triangulation (use of complementing methods and researchers), reflexivity, and a confirmability audit are needed to appropriately trace the findings from the original data and to assure that the interpretations of data clusters are meaningful and reasonable. Confirmability and an external audit involve tracing the research products; the interpretations, the conclusions, and the recommendations, to their sources and ensuring that they are supported by the data used (Erlandson et al., 1993).

Table 9. The trustworthiness of the research process (modified Erlandson et al., 1993)

Criteria	Method of addressing trustworthiness
<p>Dependability (reliability, audit trail of research process)</p>	<p>The research process is described and reported systematically and logically so that the findings are traceable from the interviews.</p> <p>Preliminary data of samples is documented systematically including contact emails, interview forms, diaries kept by the interviewer/researcher and collections of secondary data.</p> <p>Selected interviewees (mainly owners or/and persons on managerial level) represent suitable informants for SMEs in the field of forest industry.</p> <p>Interviews were conducted with the assistance of a native speaker, recorded, transcribed and translations were checked by an outside translator in order to ensure the validity of the texts.</p> <p>The transcripts were sent to the interviewees for comments on the interview sessions.</p> <p>Publications 2-3 and 5 are peer-reviewed by journal reviewers of international journals. Publication 1 is peer-reviewed by conference reviewers at an international conference. Publication 4 has been sent for peer-reviewing to journal reviewers of an international journal.</p> <p>Conclusion: The research process is logical, traceable, and documented.</p>
<p>Confirmability (quality of the results, audit trail of the research products)</p>	<p>The evidence chain is transparent describing the interviewees, the firms and their conditions are identified as far as possible to ensure the data used is adequate for the purpose.</p> <p>Research data is based on various multinational samples, and the findings are considered with other academic studies.</p> <p>The interpretations can be traced in the data used, so that the researcher's perspective was taken into the interpretation of the interviews as little as possible.</p> <p>The publications are jointly written with several researchers specialised in various field, which avoided too much subjectivity and bias in the interpreting phases.</p> <p>The findings of different samples were presented in seminars conducted in a forest industry context and thus discussed and reflected on various experts in the field.</p> <p>The interviewees had a possibility to comment on the interviews afterwards, and also after they had received the publications in which they were involved.</p> <p>Conclusion: The interpretations are based on data and are objectively linked to the findings.</p>

Criteria	Method of addressing trustworthiness
<p>Credibility (internal validity)</p>	<p>Prolonged engagement: The researcher has over thirty years educational, industrial, and SME experience, which ensures the vocabulary used both verbally and written has consistent meanings and content. The Finnish culture is familiar as the researcher is a native Finn; the Russian culture and language are also familiar based on practice and the qualification of a commercial degree.</p> <p>Persistent observation: Former experience and five years of intensive collection of up-to-date, publicly available information; as well as observation of SMEs in the field in question.</p> <p>Triangulation: Usage in data collection (Finnish and Russian), in item triangulation (Publication 5) and in data analyses (Publication 4; template analysis, Publication 3; comparative analysis).</p> <p>A case study, as sampling method of primary data, is appropriate in order to produce rich descriptions of every-day live. Secondary data was collected via various sources (internet, magazines, and newspapers in both countries), authentic quotations by the interviewees' are presented in all publications. The saturation of the data was achieved with purposeful samplings and a reasonable number (46) of informant SMEs.</p> <p>Peer-debriefing: Discussions with multinational and co-researchers within the same field of interest, presentations of findings in seminars and workshops to acquire various aspects and views.</p> <p>Member checking: Receiving feedback and questions from informants and entrepreneurs.</p> <p>Conclusion: The credibility is justified based on iterative processing of the study and personal factors (long-term experience, qualified and fact-based education).</p>
<p>Transferability (external validity)</p>	<p>Collection of purposive samplings representing the best knowledge in SMEs in the field of the forest and metal industry.</p> <p>Thick descriptions of data are provided throughout the samples, firms, and informants in Publications 2-5 and in the thesis text.</p> <p>The contexts of the Finnish and Russian SMEs in their field of industry were described in detail.</p> <p>Conclusion: The results are transferable to other fields of industry in SMEs, if those applying the theoretical or practical are aware of the study background and context.</p>

Credibility

Credibility (internal validity) refers to the extent to which any research claim has been shown to be based on the data used (Silverman, 2005), and how well the data addresses the intended focus (Polit and Beck, 2012). Guba (1981) and Guba and Lincoln (1981) have defined credibility in this way: ‘do the data sources (usually humans) find the inquirer’s analysis, formulation, and interpretations to be credible (believable)?’ - is the study credible or believable from the perspective of the participants, and does the study measure or test what is actually intended. The researcher has to provide information about his/her adequate familiarity with the topic and the adequacy of the data to merit the claims made (Eriksson and Kovalainen, 2008). The evaluation of the credibility may be conducted by various strategies. Guba (1981) proposes lengthy and intensive contact with the phenomenon (prolonged engagement), persistent observation of the focal issues of the phenomenon, and the use of peer debriefing in order to receive diverse feedback from various sources and directions. Member checking is critical for establishing credibility and, reporting whether the findings portray the participants’ true impressions (Petty et al., 2012). The saturation of data is another element to justify the adequacy of the data, and thus to indicate its credibility. Firstly, a researcher needs to choose the best sampling method with suitable informants to form a ‘purposeful sampling’ having the best knowledge of the research topic (Kyngäs et al., 2011). Secondly, qualitative research allows a limited number of selected interviews and cases in order to reach saturation (Seale, 1999). Saturation is the point in data collection when no new or relevant information, themes, or categories can be obtained. It is therefore possible to achieve saturation of the data by concentrating on a limited number of cases, and thus to provide in-depth, rich descriptions of the cases by evaluating the quality of the data.

Transferability

Transferability (external validity) refers to the degree to which the findings of the study can be generalised or transferred to other contexts, settings, or groups. The suitable means of ensuring transferability are purposive sampling (see the section about Credibility) and a thick description of the data (Guba, 1981). A thick description includes offering enough information about the research context and presenting the assumptions that were central to the research. In naturalistic science, the transferability depends on similarities between the sending and receiving contexts (Erlandson et al., 1993) – i.e. the sending context in this study is the forest industry and the receiving context, for example, would be the energy industry. A researcher needs to describe and report data about the context at sufficient level of detail in order to allow a judgment by other people who are considering the

transferability to other contexts or usage for further research. By the nature of qualitative constructionist research, the transferability to all contexts cannot be guaranteed. Therefore, researchers who apply the study results to their own settings are responsible for whether or not the results are trustworthy in other contexts (Lincoln and Cuba, 1985). Additionally, the limitations of this study need to be taken account of when applying the results of the research into other contexts (see Section 5.6).

5.6 Limitations of the study and suggestions for further research

The study offers theoretical and practical implications on how SMEs can survive in changing business environments. However, although the phenomenon has acknowledged limitations, suggestions are made here for further research. First of all, according to common qualitative research practice, the results of the dissertation must be tailored when applied to a new context. In the study, the research environment was limited to focusing on the forest industry, and related industries. However, the rigorous descriptions of the findings might help researchers and practitioners to transfer the study results to other contexts or industries, e.g. industries close to the forest industry, such as the energy industry. Additionally, I suggest further quantitative studies to test the qualitative findings of this research in other contexts (field of industry, country, etc.).

Although the study was conducted in a Finnish-Russian context, the cultural aspect was excluded from this study. Therefore, studying differences in the cultural behaviour between Russian and Finnish SMEs from the point of view of operating in business is also suggested as a further topic of research. Open-mindedness, for example, was recognised as a dominant feature in Russian SMEs (RU) compared with Finnish SMEs (FI) operating in similar change conditions. Is the open-mindedness a dominant feature within Russian businesses, or in Russian SME businesses? How does cultural behaviour generally effect the conducting of business within SMEs? Furthermore, all the Russian SMEs (RU) studied, operated in the international business market, and SMEs operating only in domestic markets were not included. To eliminate this limitation, I suggest expanding further studies concerning competencies to include domestically operating as well as internationally operating SMEs. This will allow a comprehensive understanding of SMEs operating both in domestic and in international markets. Operating only in domestic or in international markets may limit SME business competencies, and thus inhibit business development. The cultural behaviour of businesses and only operating in particular markets could be combined so that the further study would offer new information on business behaviours and competencies that are needed when operating only in domestic markets versus operating in both domestic and international markets. Thus, the study would

benefit entrepreneurs who want to consider starting a business or an SME wishing to expand its business into international markets.

Moreover, I further suggest studying SME competencies from the employees' perspective and competence formulation from the bottom to the top. This study highlighted the important role of employees for SME performance, but one interesting question would be how employees experience their own skills, abilities, attitudes, and features as affecting a firm's result. The research could also cover what new educational needs the employees might have noticed in their skills and attitudes in the context of change situations. The findings would help educational institutes to reform their teaching and training programmes by including crucial SME-level competencies in syllabuses and preparing their students to acknowledge the SME working conditions and the demand of SMEs that employees should be able to master many versatile tasks at the same time. Furthermore, based on the resultant SME survival competencies, I propose to combine all specific competencies found (see Matrix 1) into a framework of survival enabling competencies (human features, skills, abilities, capabilities, experiences, attitudes, and other traits influencing SMEs operations) to serve as a checking model for SME competencies. In the model, all the survival competencies found would be detailed so that the entrepreneurs, employees, and educational institutes could utilise the SME competence checking model in their operations. This model after being created and tested would help in a very practical manner. SME owner/managers could, for example, firstly map the existing competencies in their firm and secondly after comparing these to the required ones in the model, acquire/develop/renew existing competencies in order to face external business challenges better.

In conclusion, the preliminary competence process model (Figure 13), in order to be transferrable to other industries or contexts, needs further empirical studies to test the accuracy of the model. The business environment is a living ecosystem, where some fields of industry may decline, and thus SMEs need new business opportunities to continue their business. An empirical study could provide valuable knowledge as regards those firms that have successfully transferred their operations into another field of industry, and simultaneously could also theoretically help to re-formulate the preliminary competence process model presented in this study.

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APPENDICES

APPENDIX 1

Лаппеенрантский технологический университет
Факультет технологического менеджмента
Кафедра экономики и управления производством

Менеджмент знаний в предприятиях малого и среднего бизнеса

Что подразумевается под понятием менеджмент знаний?

Менеджмент знаний (англ. knowledge management) — это систематические процессы, благодаря которым создаются, сохраняются, распределяются и применяются основные элементы интеллектуального капитала, необходимые для успеха организации; стратегия, трансформирующая все виды интеллектуальных активов в более высокую производительность, эффективность и новую стоимость.

Система управления знаниями — это набор повторяемых на регулярной основе управленческих процедур, призванных повысить эффективность сбора, хранения, распространения и использования ценной информации с точки зрения компании.

Вопросы для интервью

1) Основные сведения о компании

- Сфера деятельности;
- Дата основания;
- Число сотрудников, оборот, ресурсы и т.д.;
- Навыки персонала, накопленный опыт и квалификация.

2) Изменения во внешней среде

- Как изменения, происходящие в обществе, влияют на жизненный цикл компании?
- Какой вы находите социальную атмосферу для предпринимательства?
- В чьи обязанности входит наблюдение за внешней средой, и каким способом это осуществляется?
- Каким образом начинается процесс разработки новых продуктов/услуг?
- Каково влияние местных законодательных органов на рабочий процесс предприятий малого и среднего бизнеса?

3) Знания и ноу-хау (внутренняя среда)

- Как отражаются изменения во внешней среде (например, экономический кризис, изменения в общественной структуре) на ноу-хау сотрудников компании?
- Какого рода новые знания необходимы для вашей компании, и каким образом они могут быть приобретены?
- Как зарождаются новые продукты/услуги внутри компании?
- Поощряет ли компания изобретательность своих сотрудников?
- Что вы думаете об имидже компании?

Lappeenranta University of Technology
Faculty of Industrial Engineering and Management
Information and Knowledge Management

[At the beginning is a text concerning the aim of the study and general information of knowledge management.]

Interview questions

Basic information

- Field of operation.
- When the company was established?
- Number of employees, turnover, resources, etc.
- Staff education, training and experience.

Changes in the external environment

- How do the changes in society affect company's lifecycle?
- How do you find the social atmosphere for entrepreneurship?
- Who monitors the external environment and how?
- How the development process of new products or services starts?
- How the local legislation influences SMEs operations?

Knowledge and know-how (internal environment)

- How do changes in the external environment (e.g. social structure, economic collapse) affect company's personnel know-how?
- What kind of new knowledge the company needs and from where it can be accumulated?
- How new products/services are developed inside the company?
- Does company encourage its employees' creativity?
- What do you think about the company's image?

APPENDIX 3

Lappeenrannan teknillinen yliopisto
Teknistaloudellinen tiedekunta
Tuotantotalous/tietojohdaminen

Pk-yritysten osaamisen muuntuminen

Haastattelurunko; puolistrukturoitu haastattelu

pe 18.5.2012 klo xx.00 XX / Yritys X, haastattelija Kyllikki Taipale-Erävala

Taustalla on Myllykoski Oy:n ja sittemmin UPM Myllykosken yritysverkosto vuosina 2009–2011, jossa on yritykseltä saatujen tietojen mukaan 1014 yritystä. Näistä suomalaisia (=päätoiminta-alue) ja Pk-yrityksiä on 754 yritystä. Edellisistä Pk-yrityksistä on valittu tutkimuksen kohteeksi noin 20 yritystä, joihin tehdään osaamisen alkukartoitus vuoden 2012 alkupuolella ja yrityksiä pyritään seuraamaan tulevaisuudessa seurantatutkimuksilla. Teoriaustoina ovat yrittämiseen liittyvät innovaatioteoriat ja yrittäjyyden kognitiiviset teoriat tietojohdamisen teorioiden lisäksi. Tutkimuksen tarkoituksena on selvittää millä tavoin osaaminen muuntuu yrityksissä. Yritystä tarkastellaan tässä haastattelussa taaksepäin ja tilannetta nyt = tilanne X (mahdollisissa seurantatutkimuksissa = Y havaitaan muutokset X:n ja Y:n välillä)

Perustiedot yrityksestä

- toimiala?
- perustamisvuosi?
- resurssit (kiinteät, henkilömäärä, liikevaihto, jne)?
- Myllykosken osuus liikevaihdosta 3 viime vuoden aikana?
- henkilökunnan taidot, kokemus, kyvykkyydet + henkilökohtaiset ominaisuudet, kontaktit/verkostot ja asenne/tahto

Makroympäristön havainnointi

- miten ja kuka havainnoi ulkoista ympäristöä?
- yhteiskunnallinen ilmapiiri, yrittäjyyden kehittymisen havainnointi?
- miten uusien tuotteiden/palveluiden kehittäminen alkaa, mistä tulee impulssi?
- mistä ja miten tietoa hankitaan, kuka hankkii tietoa, säännönmukaista, sattumanvaraista?
- lainsäädäntö mitä muu ohjaa?
- mitä toimenpiteitä yrityksessä on tehty ulkoisten muutosten takia osaamisen kehittämiseksi? Miten julkiset toimijat tukevat näitä?

Mikroympäristön havainnointi

- tehdäänkö tuoteparannuksia, kuka ja miten tekee??
- prosessiparannuksia, teknologiaparannuksia?
- panostetaanko kekseliäisyyteen, miten?
- osaamisen huomiointi, johtaminen, kehitetäänkö osaamista, miten?
- hiljaisen tiedon hyödyntäminen, siirtäminen?
- yrityksen imago, maine? Yrityksen brändi?, laatu?
- **mistä koostuu yksilön osaaminen?**
- **organisaation osaaminen?**

Niche Inno, interview questions

- **Taustakysymykset (Mitä hän on? Mitä yritys on?)**

- "Taustalomake" – Kehittymis-, innovaatio-, kasvumittaristo??? Valmiit mittarit!
- Kasvuhalukkuus? Kasvuhakuisuus? Liikevaihdon kehittyminen?
- Henkilöön liittyvät: Kuka olet, mitä teet? Kokemuksesi alalta? Työhistoria? Kokemuksesi yhteistyöstä metsäteollisuuden kanssa?
- Haastattelija kertoo lyhyesti, mitä tietää yrityksestä → Pitääkö tämä paikkansa, miten täydentäisit
- "Aasinsilta" mielenkiintoiseen uuteen caseen: "Teillä kun nyt on tämä xyz ..."
- Tämä ehkä myöhemmäksi → Kehitystoiminnan organisoituminen? Ketkä teillä miettivät uutta liiketoimintaa?
- Missä määrin panostatte uusien tuotteiden ja palveluiden kehittämiseen? Montako henkilöä? Paljonko uusia tuotteita ja palveluja? Montako projektia? Miten rahoitatte / resurssoitte uuden kehittämisen?

- **Nykyinen toiminta**

- Miksi teette nyt sitä mitä teette? Miksi päätitte lähteä mukaan tähän liiketoimintaan / tuotteen / palvelun kehittämiseen? Mitkä syyt johtivat päätökseen käynnistää liiketoiminta? Mitkä näette olevan vahvuutenne? Osaamispohja? Käytössä olevan teknologian kilpailukyky? Heikkoudet / haasteet?
- Miltä markkinat näyttävät? Miten näette markkinoiden kehittyvän? Onko markkinoiden kehittyminen vastannut odotuksianne? Trendit / kehityssuunnat? Asiakkaat / asiakassegmentit? Mitä asiakastarpeita yrityksenne palvelee?
- Mitä täydentävää / ulkopuolista osaamista hyödynnätte? Kenen kanssa teette yhteistyötä? Asiakkaat? Toimittajat? Kilpailijat? Partnerit? Oman toimialan sisällä / ulkopuolella? Mitä kautta partnerit löytyvät?

- **Toiminta tulevaisuudessa (aikajänne 5-10 vuotta)**

- Missä liiketoiminnassa näette olevanne mukana tulevaisuudessa? Mitä teette tulevaisuudessa? Miksi?
- Missä määrin nykyiset tuotteenne ja palvelunne ovat relevantteja tulevaisuudessa? Missä määrin uusi liittyy nykyisiin tuotteisiin ja palveluihin?
- Ketkä ovat asiakkaanne? Kenen kanssa teette yhteistyötä?
- Tsekkaa tulevaisuuskysymykset Delphistä!

- **Miltä näyttää toimintaympäristönne tulevaisuudessa?**

– O + T

- [Ulkoinen ympäristö (PESTE(L), SWOT, MOTS, 5-forces)] – Kuvien käyttö yrityksen positioimiseksi arvoverktoon – nyt ja tulevaisuudessa.

APPENDIX 5

Lappeenrannan teknillinen yliopisto
Teknistaloudellinen tiedekunta
Tuotantotalous/tietojohdaminen

Pk-yritysten osaamisen muuntuminen

Haastattelurunko; puolistrukturoitu haastattelu

ma 17.10.2011 klo 8.30 Yritys X, haastattelija Kyllikki Taipale-Erävala

Taustalla elinkeinorakenteessa tapahtuneet muutokset 1980-luvulta lähtien, suurteollisuuden rakennemuutoksen aiheuttamat muutokset Pk-yrityksiin, ja kuinka muutos on vaikuttanut osaamiseen.

Tilanne yleisellä, paikallisella tasolla – MUUTOKSEN ESIINTUOMINEN

Miten yrityselämän rakennemuutos (ulkoinen muutos) on näkynyt (telakat, Voikkaa, Summa, jne..)? Yritystasolla? Onko tapahtunut jyrkkiä yritysten sisäisiä muutoksia?

Miten yhteiskunnalliset toimet ja päätökset ovat huomioineet rakennemuutoksessa Pk-yritykset?

Miten voisi kuvailla paikallisia Pk-yrityksiä? (tässä kuvailu niiltä paikkakunnilta, mitä tuntee)

Osaamisen muutos – OSAAMISEN MUUTOKSEN ESIINTUOMINEN

Miten muutos vaikuttaa / on vaikuttanut yritysten osaamiseen?

Millaista uutta osaamista tarvitaan, on tarvittu? Miten sitä on hankittu /voi saada? Mihin osaamistarpeet liittyvät? (esim. yhdessä vaiheessa tietotekniikan osaaminen oli tärkeää..)

Kenellä yrityksen osaamisen on, millaista? Mistä osaaminen koostuu?

Lakkautetut tehtaot versus Pk-yritykset

Millainen yritysilmasto on ollut paikallisesti? Muutoksia? Mikä/kuka muuttunut ja mihin suuntaan?

Onko ao. toimialoilla ollut muutoksia? Jos on, niin millaisia? Miten osaaminen on muuttunut? Pk-yritysten tilanne jyrkässä muutoksessa?

Matrix 1. Empirical specific survival competencies in SMEs

		Entrepre.n. Competencies	Managerial competencies			Individual competencies		Organisational competencies		Networking competencies			Operational competencies			Change competencies	
Sample, firm nro	Established year	Opportunity searching, visioning, environmental scanning, EC embedded in everybody	Ability to develop the existing business in line with (external) changes	Active efforts towards building a positive image and brand; Purposeful publicity formation	Financial ability to respond to economic changes	High level of know-how in own industry, professional experience	Noticing the lack of individual skills, applicable attitude towards work	Good internal relationships between personnel	Interchangeable personnel, jacks-of-all-trades	Desire for co-operation and networking (in R&D, finance, to have sub-contractors)	Ability to operate in networks	Open-mindedness toward external players, new technologies, solutions	Ability to form long-term customer relationships, reliability, trust between SME and customers	Operational flexibility to meet changed situations	Customer orientation, customer closeness, awareness of customer processes	Proactive attitude towards changes, courage to change and ability to tolerate uncertainty	Willingness to change by renewing skills, and work manners Development friendly mind-set towards change
A/1 RU	(1949) 1998																
A/2 RU	1991																
A/4 RU	1992																
A/5 RU	1992																
A/8 RU	1993																
A/6 RU	1994																
A/9 RU	1996																
A/7 RU	1997																
A/10 RU	1998																
A/3 RU	2002																
B/3 FI	1944																
B/8 FI	1978																
B/7 FI	1982																
B/5 FI	1988																
B/1 FI	1989																
B/2 FI	1991																
B/6 FI	1992																
B/9 FI	1996																
B/4 FI	1999																
B/10 FI	1999																
C/9 INNO	1946																
C/4 INNO	1952																
C/6 INNO	1960																
C/12 INNO	1964																
C/10 INNO	1980																
C/13 INNO	1982																
C/8 INNO	2000																
C/1 INNO	2004																
C/5 INNO	2005																
C/11 INNO	2005																
C/2 INNO	2006																
C/3 INNO	2007																
C/7 INNO	2007																
D/1** TRANS	(1978) 1943																
D/7 CTS TRANS	1973																
D/5 TRANS	1986																
D/6 TRANS	1987																
D/8 TRANS	1987																
D/1*TRANS	1989																
D/2*TRANS	1989																
D/9 TRANS	2001																
D/4 TRANS	2004																
D/12 TRANS	2006																
D/10 TRANS	2010																
D/11 TRANS	2010																
D/13 TRANS	2010																

D/1* TRANS and D/2 *TRANS are representatives of public actors

D/1**TRANS is a representative of public actor and additionally an entrepreneur

Kyllikki Taipale-Eräväla

Survival Competencies in SMEs in Changing Business Environments

Changes in the global economy are constantly reforming industrial structures and economies. Concurrently the interest in micro, small, and medium-sized enterprises (SMEs) has recently increased because of their significant role in economic development, by providing new jobs and public wealth. Changes in the business environment challenge SMEs' previous skills, capabilities, attitudes, and behaviours, in other words their competencies. Therefore, it is crucial to know how SMEs will react and respond to changing business environments in order to assist and promote SME business continuity and long-term operations, i.e. business survival.

The study combines results from previous literature on business supporting competencies and empirical SME findings on firms that have achieved business survival and continuity. The focus is on the forest industry, or industries related to it, due to their strong economic influence for the countries in the northern parts of the globe. More specifically, SMEs in Finland and Russia act as the research context for studying firms that have survived various changes.

The thesis offers versatile and rich information concerning the competencies enabling continuous, long-term business. While previous studies focused on separate supporting skills and competencies, the novelty of the study is in introducing the aspect of holistic, SME-level, business continuity, and supporting competencies. Additionally, the study introduces a process model of competencies enabling a business to transfer to another industry or into other contexts, if the business is in danger of collapsing due to too many drastic changes in the present business environment. Furthermore, practical implications for SMEs, educational players, and institutional actors are provided.

