SeAMK

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The (wicked) problem of SME internationalisation in South Ostrobothnia

A qualitative investigation of entrepreneurs' and regional stakeholders' self-reported perceptions using a Complex Adaptive Systems framework

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Thesis abstract

This thesis explores how South Ostrobothnian entrepreneurs and the regional stakeholders assisting them view SME internationalisation. The study argues that the low level of internationalisation can be understood as a wicked problem in the complex systems framework, and that a deeper understanding of the phenomenon in its context is required.

A qualitative mixed-methods design was selected, where Fuzzy Cognitive Mapping, Empathy Mapping, open-ended questions, and an export barriers survey were utilised. The South Ostrobothnian participants included 5 SME entrepreneurs and 12 employees of different business development and internationalisation support organisations.

Both groups recognised the impact of small business size on resource availability (time, financial, intellectual capital). The entrepreneurs seemed more focused on the operational side of internationalisation in their descriptions. Due to an already high workload they wanted correct answers to their questions quickly as well as practical help with the process so they could focus on deal-making. The stakeholders called for proper foundational work and capacity building in businesses for international competence.

Due to the small number of entrepreneurs taking part and the qualitative methods used, the study offers only a limited snapshot of the views of local entrepreneurs. Additionally, they were all planning or actively engaged in business activities overseas. For generalisability, additional studies with larger samples and more power are needed.

Mindful of the fundamental complexity of the internationalisation issue, the practical development suggestions presented sought to target a few central elements identified for remedial action: while they will not fix every problem, clear processes, improved access to information and systematic capability development may encourage more growth-seeking entrepreneurs to reach out and start developing their business for international success.

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Opinnäytetyö tutki sitä, miten eteläpohjalaiset yrittäjät ja yrityksiä avustavat tahot hahmottavat pk-yritysten kansainvälistymisen ilmiönä. Tutkimus lähti siitä, että matala kansainvälistymistaso voidaan ymmärtää ilkeäksi ongelmaksi kompleksisten järjestelmien viitekehyksessä ja ilmiön syvällisempi ymmärtäminen paikallisessa kontekstissa on tarpeen.

Laadullisessa, eri metodeja yhdistävässä tutkimusasetelmassa käytettiin sumeaa kognitiivista kartoitusta, empatiakarttoja, avoimia kysymyksiä sekä kyselyä viennin esteistä. Tutkimukseen osallistui viisi eteläpohjalaista pk-yrittäjää sekä 12 yrityskehityksen ja kansainvälistymisen kanssa työskentelevää asiantuntijaa eri organisaatioista.

Molemmissa osallitujaryhmissä tunnistettiin pienen yrityskoon vaikutus resurssipohjaan (aika, rahoitus, aineeton pääoma). Yrittäjät keskittyivät kansainvälistymistä kuvaillessaan enemmän operatiiviseen puoleen. Valmiiksi suuren työmäärän takia halusivat nopeasti oikeita vastauksia kysymyksiinsä sekä käytännön apua kv-prosessiin, jotta he voisivat keskittyä kaupantekoon. Asiantuntijat kaipasivat yrityksiltä kunnon pohjatöitä ja toimintaedellytysten kehittämistä kv-osaamisen parantamiseksi.

Pienestä yrittäjämäärästä sekä käytetyistä menetelmistä johtuen tutkimus tarjoaa vain rajoitetun "kuvakaappauksen" paikallisten yrittäjien näkemyksistä. Lisäksi kaikki yrittäjät joko suunnittelivat tai aktiivisesti harrastivat kv-liiketoimintaa. Yleistettävyyteen pyrittäessä tarvitaan tehokkaita, suuriotoksisia lisätutkimuksia aihepiiristä.

Kv-ongelman monitahoisuus huomioiden kehitysehdotukset pyrkivät vaikuttamaan ainakin keskeisiin tunnistettuihin ongelmiin; selkeät prosessit, helpompi tiedonsaanti ja järjestelmällinen valmiuksien kehittäminen voivat rohkaista kasvuhakuisia yrittäjiä ottamaan yhteyttä palveluntarjoajiin ja kehittämään yritystä tavoitteenaan kansainvälinen menestys.

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[1] Asiasanat: pienet-, keskisuuret- ja mikroyritykset, yrittäjät, kansainvälistyminen, ilkeät ongelmat, monimutkaiset mukautuvat järjestelmät

Preface

This thesis has been written so that anyone with zero knowledge of South Ostrobothnia* or Finland can get an idea of the business environment there.

Should the navigation panel be available for pdf readers, its use is recommended. A short Finnish summary will be published in the SeAMK online periodical for those who like their reading materials short and sweet.

Future reference

The different chapters and the Appendix section of this work contain a variety of materials that have been incorporated there as a rough guide for anyone either struggling to conduct and evaluate a qualitative, socially distanced study from the start to finish, or wishing to avoid copious amounts of trial and error in the process. The protocol for using FCM and the other methods can always be improved upon, so consider them a start. Good luck.

Acknowledgements

A word of thanks to:
- Dr Kirsti Sorama for getting onboard in 2018 and introducing me to FCMs;
  I hope you are enjoying the retirement.
- Dr Sanna Joensuu-Salo at SeAMK, who took over after the 2020 spring and supervised the latter part of the process.
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- Everyone else who's helped the work shuffle along at one point or another.

*The region famous for the Finnish platteland will certainly welcome tourists once the pandemic is over, as tourism counts as service exports in the national statistics.

Seinäjoki, April 2021

Eevastiina Hyvönen

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Pictures, Figures and Tables

Terms and Abbreviations

ABM	Agent-Based Model
Anti-reductionism	A scientific stance arguing that all properties of a system cannot be explained simply by investigating different parts of the system
AWU	Annual Work Unit
B2B	Business-to-business, as opposed to business-to-consumer
B2C	Business-to-consumer; business-to-customer
Black Swan event	A rare, highly unpredictable occurrence with severe consequences
Born-global	A business that pursues international markets from the start
Bounded rationality	Considers the person's ability as well as availability of time and information as limiting factors for fully rational decision-making
BF	Here: Business Finland
Ca.	Circa; approximately
CAP	Common Agricultural Policy, of EU agricultural policy
CAS	Complex Adaptive System(s)
Caveat	Here: limitations exist in relation to statements made
CEO	Chief Executive Officer
Cf.	Conferatur; compare to the indicated source
CIMO	Centre for International Mobility, Finland
CLLD	Community-led Local Development, relating to Leader groups
CMS	Content Management System

Core rigidities   Resources and processes that limit the company's agility and dynamism, may stem from past core competences

Covid-19   A disease caused by a novel coronavirus strain, 2019-nCoV

Critical mass   Here: point where growth shifts from linear to exponential and becomes self-sustaining; for example growth of the customer base

CRM   Customer Relationship Management

DC   Dynamic Capabilities, of resources that allow the company to renew its competitive advantage over time

DiVA portal   Digitala Vetenskapliga Arkivet; digital science archive of Sweden

EAFRD   European Agricultural Fund for Rural Development

EC   Here: The European Commission

EDFI   European Development Finance Institutions

EEN   Enterprise Europe Network

E.g.   Exempli gratia; for example

ENRD   European Network for Rural Development

ELY   Here: Finnish-based abbreviation for the Centre for Economic Development, Transport and the Environment

ERDF   European Regional Development Fund

ERP   Enterprise Resource Planning

Et al.   et alii; and others; and colleagues

Etc.   et cetera; and so on; and other things

EU   The European Union

EUR, €   Abbreviation and symbol for Euro (currency)

Expo	Here: Of large exhibition-type events; exposition
FCM	Fuzzy Cognitive Mapping
FFA	Finnish Food Authority
GDPR	General Data Protection Regulation of EU (2016/679), on data protection, privacy and transfer of personal information
GO	Growth-orientation
HC	Human capital
HR	Human Resources
I.e.	Id est; that is; in other words
In situ	On location (referring to a specific physical context)
Inter alia	Amongst other things; not a comprehensive list
Intl	International; internationalisation
IP	Intellectual property
IPM	Internationalisation Process Model; also used of Uppsala Model by Johanson & Vahlne (1977)
IT	Information Technology
KPI	Key Performance Indicator
Leader	Initiative by EU's European Network for Rural Development to support rural development through local action groups, abbreviated from French (Liaison entre actions de développement de l'économie rurale)
LL	Liikeideat Lentoon, a start-up coaching course offered by Into Seinäjoki as a municipal business development organisation
MBE	Multinational Business Enterprises, alternative term used by Vahlne and Johanson (2017)

MIMIC	Here: Multiple Indicators, Multiple Causes model of Dynamic Capabilities, from Barrales-Molina et al. 2013
MNC	Multinational Corporation
NB	Nota bene; please note
OBV	Opportunity-Based View of internationalisation
OECD	The Organisation for Economic Co-operation and Development
OLI	Ownership, Location and Internationalisation theory of internationalisation
POM	Product, Operation and Market strategy in international market entry
PPP	Public–Private Partnership
PR	Public Relations
RBV	Resource-Based View; emphasising the role of the company's resources instead of market conditions in business strategy
RDI; R&D	Research, Development, and Innovation; Research and Development
Red Queen effect	Having to constantly evolve and adapt to keep up with competition
ROI	Return on investment
Σ	Sigma, shorthand for sum of multiple terms
km²	Square kilometre; measure of land area, ca. 0.39 square miles
S.d.	Sine dato; time of publication unknown
SeAMK	Seinäjoki University of Applied Sciences
Sec.	Secundum; following in the sense of X
Sic	Sic erat scriptum; spelling as in the original work
SME	Here: Small, Medium (and Micro)enterprises

S.l.	Sine loco; place of publication unknown
SO	Here: abbreviation for South Ostrobothnia
South Ostrobothnia	A region consisting of 17 municipalities in Western Finland.
SWOT	Analysis of Strengths, Weaknesses, Opportunities and Threats
TE	Here: refers to the Finnish employer, jobseeker and business support services, TE referring to employment and livelihoods in Finnish
TF	Team Finland
UAS	University of Applied Sciences
UI	User Interface; user interface design
UK	The United Kingdom
UX	User Experience; user experience design
VAT	Value Added Tax
VRIO analysis	Assesses the Value, Rarity, Imitability and Organisation of a company's offering as potential sources of competitive advantage
VUCA	Volatile, Uncertain, Complex, Ambiguous
WFH	Working From Home; a flexible, socially distanced mode of working
WHO	The World Health Organisation
Wicked problems	Difficult to define and solve, consisting of multiple, interlinked issues involving a multitude of stakeholders with differing views and agendas
XaaS	Shorthand for 'anything as a service' business model; for example Software as a Service → Saas – no change of ownership usually takes place, as the vendor simply provides a service i.e. access to a software for a fee based on the terms of a service contract

1   INTRODUCTION

The work here aims to study the phenomenon of small-business internationalisation in South Ostrobothnia (later: SO) to have a better understanding of why the expansion to overseas markets from the region is still a relatively rare occurrence. Few academic studies have focused on SO specifically, and reliable quantitative data on the topic would seem scarce. The phenomenon is examined in the complex systems framework as a wicked problem, which typically are hard to define and difficult to solve conclusively. A qualitative mixed-methods research design with five key research questions is proposed for investigating the cognitions, perceptions, motivations, and the actions of the persons managing businesses in the region. The purposive sampling of the participants will target two groups: for a first-person view, local small-business entrepreneurs, and for a third-person view, the employees of municipal, regional, and national organisations who help local entrepreneurs pursue growth and internationalisation. A design thinking process is utilised in the ideation of practical solutions for speedier internationalisation. This chapter is followed by a literature review for an overview of the existing research related to the theme of the work.

1.1   Context

SO is a geographical area in Finland consisting of 18 municipalities with the city of Seinäjoki acting as a regional hub. The landlocked region (see Figure 1) is frequently recognised for its entrepreneurial spirit, and small and medium-sized enterprises (SME) are a major source of income and employment there (Prime Minister's Office 2019; Regional Council of South Ostrobothnia a; b; National Land Survey of Finland). However, while entrepreneurially active as a region, SO's low contribution to national exports has for some time stood out in various statistics and action plans.

In 2012 the number of exporting companies in the region was 381, and exports have consistently totalled less than 10% of production, hovering at around 1% of total Finnish exports. The 2014 edition of the SO internationalisation review noted that there was a dearth of dynamic, growth-seeking enterprises and local businesses were both small and not very internationalised (Regional Council of South Ostrobothnia 2014a, 9; Finnish Customs 2018a).
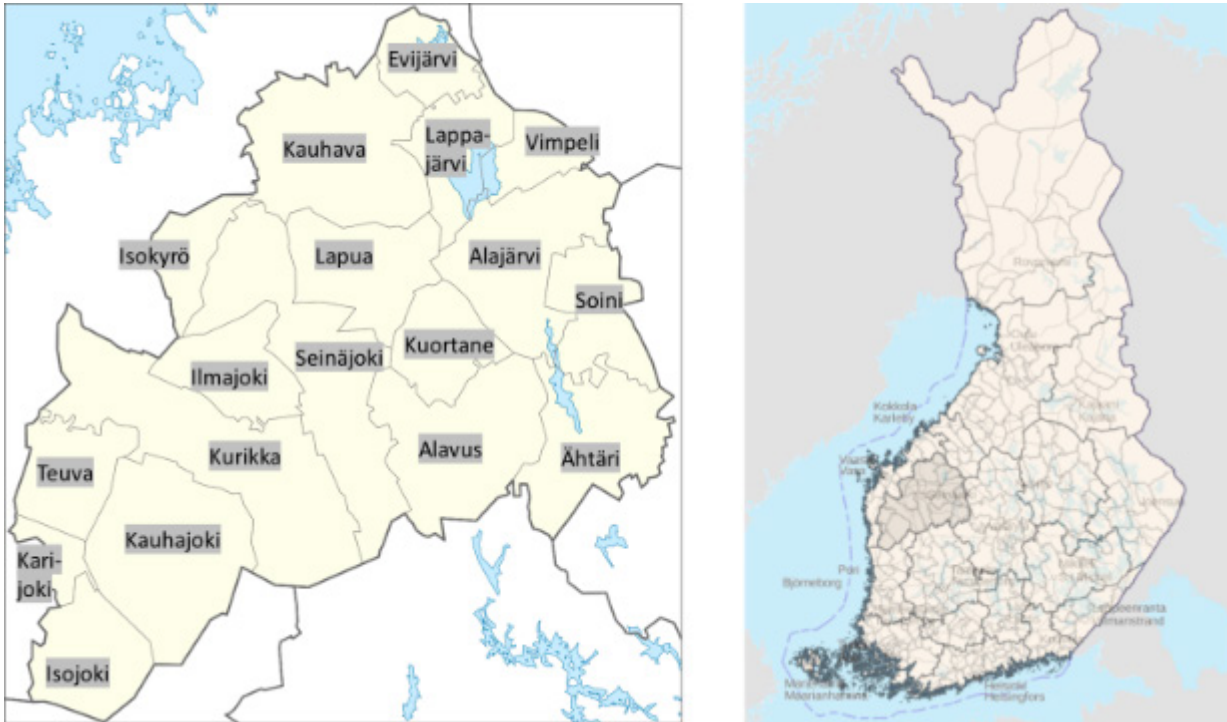
Figure 1. Geographical location of South Ostrobothnia (Source: composite image from Wikimedia Commons 2014 & National Land Survey of Finland 2021).

However, basic statistical and geographical features do not seem to explain all variability in the commonly used measures of internationalisation if for instance the figures are compared to those of the neighbouring Ostrobothnia region (Wuori & Vainio 2004; Finnish Customs 2018a). Furthermore, little up-to-date research seemed to exist on SO companies overall and thus the absence of a simple answer for low internationalisation set the work here in motion in 2018.

A research gap was identified, as only limited primary data or peer-reviewed academic research was found to touch on the topic of business internationalisation at the regional level. The paucity of quantitative data led to the research taking a more exploratory approach to the issue using qualitative methods.

1.2   Key concepts

A traditional way of defining internationalisation has been looking at it as "a process in which the firms gradually increase their international involvement" (Johanson & Vahlne 1977, 23). The definition of internationalisation has evolved over time and a closer look at this will be offered in the subsequent chapter.

Outward internationalisation

In this work the concept of internationalisation is limited mainly to what has been understood as "outward internationalisation" in the literature (Welch & Luostarinen 1993, 44), namely the process of companies entering foreign markets through a variety of means. There is an ongoing project in the SO region addressing the issue of limited "inward internationalisation", and as it is expected to run until February 2022 (Ministry of Economic Affairs and Employment of Finland), the inward direction of internationalisation is excluded from the work here.

The role of small business entrepreneurs

The role of entrepreneurs in determining the strategy for SMEs that they head, as well as their connection to the business ecosystem in which they operate was selected as the focus area for the research here. This was deemed practical due to the significant role of small businesses in the SO business ecosystem, long-term regional efforts to boost their level of growth and internationalisation as well as some idiosyncratic characteristics of local SMEs. These would include for example the generally high influence of the owner–entrepreneur vs no or low influence of external board members in strategy development, which has also been observed elsewhere (Statistics Finland; Felicio, Caldeirinha & Rodrigues 2012; Regional Council of South Ostrobothnia a; 2014a; 2019a; 2019b; Sorama et al. 2018; Kauppalehti 2019).

Wicked problems

The persistence of the internationalisation issue was an interesting early observation, and while the deliberation for the final research design was underway, it was concluded that framing the matter as a wicked problem might offer a way to understand what is happening.

Rittel and Webber (1973) gave wicked problems the following characteristics: they are deeply embedded into their environment and unique to it, due to their ambiguity and complicated causal chains they are difficult to exhaustively define and study, and any interventions irreversibly change the system yet they are not fully within the control of the people involved in the problem. Importantly, "one cannot understand the problem without knowing about its context" (Rittel & Webber 1973, 161–162), which is why the adoption of a complex systems paradigm felt appropriate.

1.3   Research paradigm and plan for empirical section

The view of a business environment as a complex adaptive system (CAS) has gained some popularity as research on internationalisation has moved to a more network-centric direction in recent times (Johanson & Vahlne 2009; Chandra & Wilkinson 2017a; 2017b; Vahlne & Johanson 2017). The latest iteration (2017) of the Vahlne and Johanson model included many features of a complex adaptive system yet remained at a very high level of abstraction. Meanwhile Chandra and Wilkinson have explicitly recommended (2017b, 698) supplementing high-level stylised models with more detailed Agent-Based Maps (ABM) of internationalisation in a complex adaptive system context.

From the complex systems viewpoint, it could be argued that internationalisation has been and is at a level that could be expected, given all the different interactions within the affected system – some of which simply are not currently recognised. Indeed, the advice from the late Donella Meadows (2008, 34) was to "…stop looking for who's to blame; instead you'll start asking, "What's the system?" The concept of feedback opens up the idea that a system can cause its own behavior" [sic]. Developing an understanding of the behaviour of the SO SMEs and the local business ecosystem, with internationalisation as their emergent outcome, will be the overarching goal of this work.

Should complete, multimodal real-time information and unlimited computing power for processing the data be available, complex adaptive systems as well as interactions within them could, in theory, be modelled so accurately that any discrepancies would be transient at worst (sec. Kosko 1986). However, the obscurity of countless data points creates blind spots, with their impact on the accuracy of any models magnified by time. The scope of this study is limited in ambition as it seeks to 1) sidestep the issues pertaining to (quantitative) Big Data analysis and, instead, 2) accumulate and integrate qualitative data from different sources and create a simple if also fuzzy model of the different dynamics at play when it comes to small business internationalisation.

Invariably, the characterisation of "low" internationalisation as a wicked problem emerging from the functioning of a multifaceted system requires one to be mindful of the context within which the small businesses operate. The conceptual model of the business ecosystem as a complex adaptive system of the work here follows the multi-dimensional model proposed by Fuller and Moran (2001, 54); the influence of the strictly biological level is largely excluded from the

discussion for the sake of brevity although it is recognised that physical wellbeing can be expected to exert significant influence on the mental states and activities of any individual. In the model (see Figure 2) attention is first paid to the cognitions, mental models and constructs of an individual, which are thought to influence the motivations and capabilities of the entrepreneur, and in turn their strategy, activities and relationships from the business level to local and more remote networks.
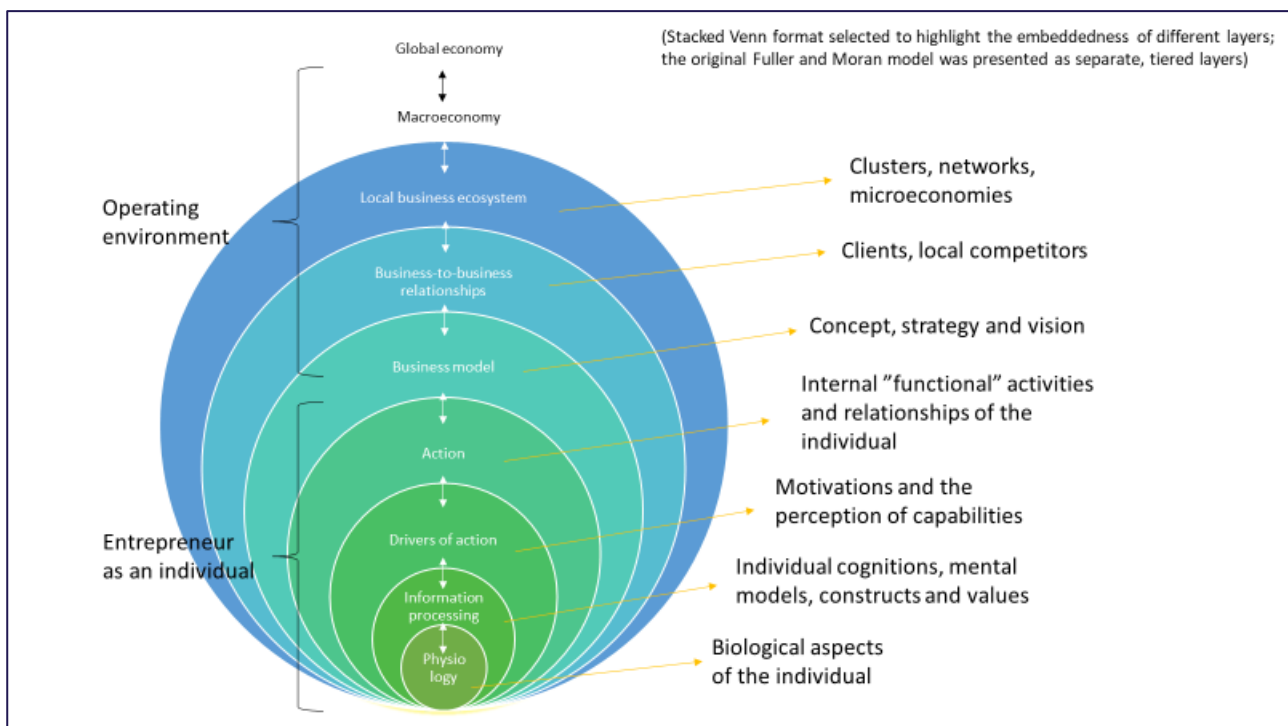
Figure 2. A bottom-up conceptual model of the business ecosystem as a complex adaptive system with multiple embedded layers; modified from a figure by Fuller & Moran (2001, 54).

The empirical part of the work seeks to understand what the idea of "internationalisation" involves for SMEs run by local entrepreneurs. The five research questions include:

1. How do the participants understand SME internationalisation in South Ostrobothnia as a whole?
2. What might motivate a local entrepreneur to internationalise i.e. (here:) pursue international markets?
3. What things are thought to inhibit such internationalisation?
4. What is the perception of the help offered?
5. What is the perception of the help required?

The data collection process employs a mixed-methods approach and the aim is to use triangulation to produce a more complete picture of the topic than any one method would have

on its own. Furthermore, participants in this study will involve both entrepreneurs as well as representatives of entities that local entrepreneurs would likely interact with if they were planning to pursue internationalisation.

The tools used in the empirical part will include:

- Fuzzy Cognitive Mapping (FCM; using a protocol modified from Özesmi & Özesmi 2004) to investigate how the entrepreneurs understand internationalisation in small enterprises. To get an idea of the context outside the local small enterprise, a group of regional internationalisation and business consultants is also interviewed as they represent various stakeholder groups interacting with the entrepreneurs.
- Open-ended questions, which are utilised to allow the participants to describe the status quo in the region as well as to share their ideas for solutions and/or improvements. Responses will be sought from both groups of participants.
- An additional tool, empathy mapping (von Thienen, Meinel & Nicolai. 2014; Gibbons 2018), is included for exploring the first steps of an internationalisation process with the entrepreneurs.
- Lastly, as exports have long been used as a rough measure of outward internationalisation (although this approach is not without problems; Regional Council of South Ostrobothnia 2019b; Ministry of Economic Affairs and Employment of Finland 2020), for practical value a simple export barriers survey will be piloted with participants to get an idea of the most pressing regional issues.

The process seeks to loosely follow the principles of a design thinking which have been employed in tackling wicked problems (Buchanan 1992; von Thienen et al. 2014; Santos et al. 2017; Gibbons 2018; Colchester 2019; Daniëls et al. 2019; Walls 2020), although here the design thinking process is limited to the first three of the five steps: 1) employing a beginner's mindset and empathising, 2) formulating a problem statement addressing the main issue, then 3) co-creation of ideas and some suggestions for potential solutions. Prototyping and testing is beyond the scope of this work. The literature review in the following chapter will expand on the theoretical basis of the work and pave the way for the chapters on research methodology, findings, and discussion.

2 LITERATURE REVIEW

This section aims to present a more in-depth overview of the themes discussed earlier. As the work highlights the role of entrepreneurs in local small businesses, the section starts with selected literature on that topic. Following entrepreneurship, internationalisation as a research subject is explored, with some limitations to the scope. After that the work moves on to the theory of complex adaptive systems and wicked problems. From there the attention shifts to SO in the subsequent chapter.

2.1 Entrepreneurship

Entrepreneurship as something that individuals engage in has existed for millennia, but its systematic research would appear to have been lagging for quite some time. At the European Union (EU) level the lack of entrepreneurship statistics and empirical data has been noted quite recently by the European Commission (EC), and data collection has been ramped up from the year 2013 onwards (Statistics Finland 2018, 7–8).

Prior to that, Shane and Venkataraman (2000, 219) found it problematic that entrepreneurship was frequently absent from theories of business, markets, organisations, and change, resulting in an incomplete picture of the functioning of business and economy. Brown and Thornton (2013, 403), as well as Holcombe (2007, 5) have expressed similar concerns regarding the issue of not including entrepreneurship in the mainstream analysis of growth and economy. However, Shane and Venkataraman (2000, 217) also criticised entrepreneurship research for its "hodgepodge" approach as well as the lack of explanatory and predictive conceptual framework, worrying that this would further limit researchers' understanding of various phenomena in that domain. This sentiment has been echoed for example by Bruyat and Julien (2001, 166–168) and Walter and Heinrichs (2015, 226–227).

Definition of entrepreneurship

Shane and Venkataraman considered focusing solely on an individual starting a business insufficient, and instead their definition of entrepreneurship (based on Venkataraman 1997) had two pre-requisites: profitable opportunities, and enterprising individuals ready to act on opportunities, so that entrepreneurship might occur where they meet. The two authors deemed entrepreneurship to be a vehicle for discovery, identifying inefficiencies in the society and

transforming the understanding of the situation into products and services that could be made available, mitigating the said inefficiencies. The creation of a new organisation was not necessary, as the authors pointed to case studies of intrapreneurship i.e. entrepreneurship within an organisation and other alternative forms of entrepreneurship as an example of this (Shane & Venkataraman 2000, 218–220).

Basic conditions for entrepreneurship

McGrath (2013) has argued that in a fast-paced, constantly developing business environment competitive advantage is transient, and companies will have to constantly reconfigure their business model, assets, and capabilities in a way that maintains both the stability and the agility of the company. Innovation and the recognition of opportunities must be expected at all levels, along with trainability and constant development to keep up.

Leaning on Schumpeter (1934) and the research preceding "creative destruction", Shane and Venkataraman (2000, 221; 223) considered it necessary for entrepreneurship that there is a continuous discrepancy in the distribution of information on how to add value and convert resources to a more costly form – over time the diffusion of information would increase competition and resource prices, reducing profits and subsequently the incentive to participate in the competition [see also Rogers (1962) and Robertson (1967) on diffusion of innovation].

The duration of these fleeting opportunities is influenced by the speed of information diffusion and opportunity recognition as well as access to any isolating mechanisms such as intellectual property protection or the rarity of the resources which would prevent or limit imitation. Individual differences would contribute to differing levels of information, perceptions of opportunities and risks involved in their utilisation. Shane and Venkataraman (2000, 223) point out that in addition to information levels, discrepancies also seem to exist in the perceptions of risk level and commercial potential of an identified opportunity, as most new businesses unfortunately fail.

Entrepreneurship research, then, would need to focus on "how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited" (after Venkataraman 1997, in Shane & Venkatamaran 2000, 218).

Sketching the profile of entrepreneurs

A related line of inquiry has looked at who becomes an entrepreneur from a variety of angles (for example Fonseca, Lopez-Garcia and Pissarides 2001; Plehn-Dujowich 2010; Poschke 2013; Burton, Sørensen & Dobrev 2016; Levine & Rubinstein 2017). For an overall view of common factors, Walter and Heinrichs (2015) sampled 131 studies spanning 30 years and looked at the entrepreneurs researched from the perspectives of 1) traits, 2) cognitions, 3) affect, 4) intentions, 5) learning and 6) economy.

One area that appeared to have been under-researched in the sample was the affect perspective (Walter & Heinrichs 2015, 232; 236–237) – positive or negative affect was thought to influence cognition and impact behaviour through that route, but there were few studies looking at the influence of feelings on the venture effort. The findings regarding the trait perspective were in line with other meta-analyses (Walter & Heinrichs 2015, 230–231; 234–236) – entrepreneurs typically were observed to possess the following traits: innovativeness and creativity, need for independence, need for achievement, risk-taking propensity and internal locus of control or the belief in events resulting from their own actions were found to correlate with the exploitation of given opportunities.

As for the learning perspective touching on social learning theory (Walter & Heinrichs 2015, 233; 237), the existence of roles models and their performance were found to be important influences on entrepreneurs. Somewhat unflatteringly, from the cognitive perspective the study reported that many entrepreneurs were susceptible to underestimating the risk involved in starting a new venture and be slow to change their initial assessment due to overconfidence (Walter & Heinrichs 2015, 233; 237). On the other hand, this might help explain the relatively high failure rate for new ventures as noted by Shane and Venkataraman in 2000.

From the intentions-perspective leaning on the theory of planned behaviour, the following were found to have a positive relationship with entrepreneurial tendencies: self-efficacy i.e. a positive assessment of one's ability and the propensity to act, as well as the perceived desirability and feasibility of entrepreneurship as a career choice (Walter & Heinrichs 2015, 232; 236–237). Meanwhile the assessment of studies from an economic perspective found that entrepreneurial, work and management experience, education and vocational qualifications seemed to correlate with entrepreneurship as a career choice. Limiting factors were high income from salaried employment, while unemployment and the lack of alternative income appeared to increase entrepreneurial tendencies. Another supporting factor was the access to

necessary financial resources (personal or family wealth exhibited the clearest relationship in the sample; Walter & Heinrichs 2015, 233; 237).

Entrepreneurs and growth

Unhappy with trait-focused entrepreneurship research, Moran (1998) explored the connection between personality characteristics and growth orientation. The English owner–managers in his sample were profiled using a variety of psychological tests and exercises into three groups: high growth-orientation, medium growth orientation and low growth-orientation. Moran's focus was especially on high growth-orientation (GO) entrepreneurs.

Participants in the High GO category were characterised by the following features:
- Energetic strategist
- Strong leadership orientation
- Strong drive, action orientation
- Liking for constant decision-making
- Tend not to enjoy purely administrative roles;
  do not want to be "conventional managers"
- Intuitive perception: patterns and relationships

They enjoy:
- Action, change, an opportunity for constant decision-making, being in charge and innovating constantly.

According to Moran (1998) the practice of profiling entrepreneurs could assist in increasing self-reflection and assist in the development of the business where it would reveal training and development needs.

Finnish research

In Finland abductive, stylised frameworks appear popular – on the other hand their ability to compress and communicate information succinctly is evident. Tornikoski et al. (2011, 28) have developed a framework describing SME growth in SO (Figure 3). The research design was a qualitative case study including 7 SMEs working with either metal or plastics. Content analysis was applied to interview content and themes discovered through abduction. The reliability and validity were substituted in the qualitative study with an assessment of evaluability and

credibility. Themes rising from the material were willingness to grow, ability to grow, barriers to growth and risk as well as management of growth. The growth process was examined from the viewpoint of the entrepreneur, the enterprise and the environment, and the key influences in the process were mapped into the matrix created.
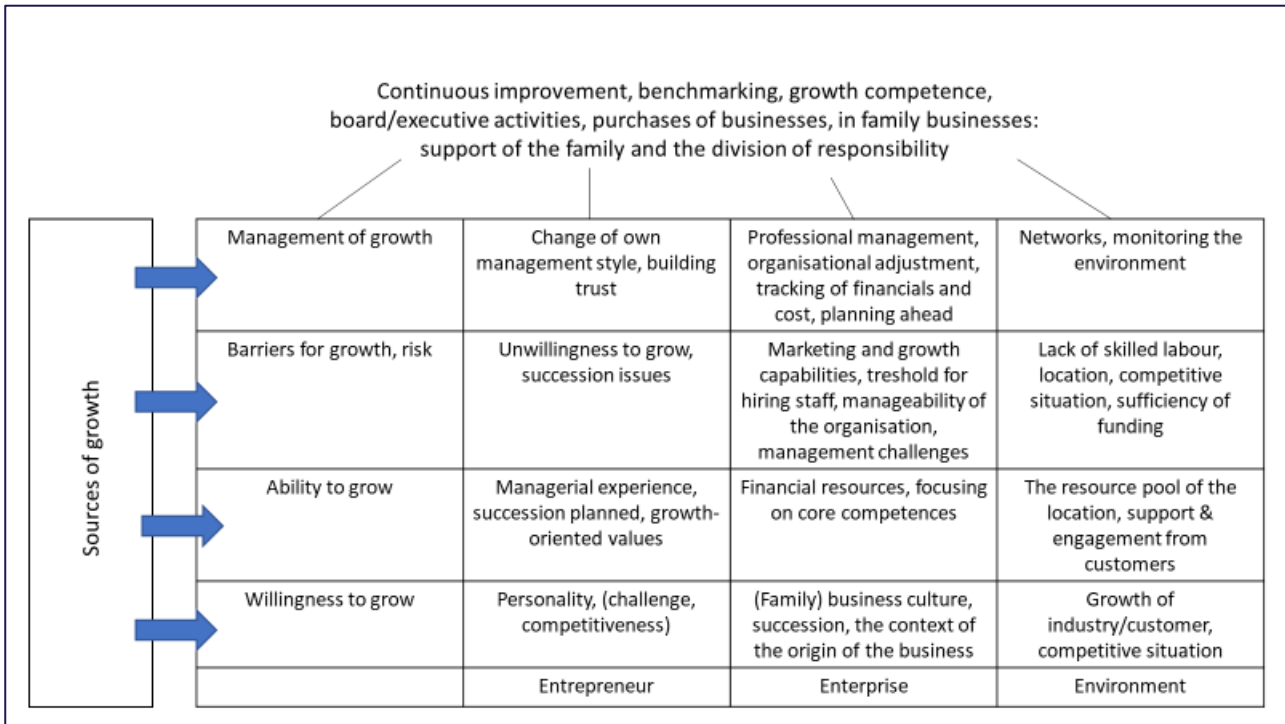
Figure 3. Framework for growth, South Ostrobothnian SMEs (translated from Tornikoski et al. 2011).

Sorama et al. (2015) published a study of SO growth enterprises, consisting of 1) a longitudinal (2005–2011) survey of businesses identified in 2006 as growth enterprises; 2) focused interviews with growth enterprises; and 3) identification of new growth enterprises between 2009 and 2012. According to the findings, with change being constant, success required management with information, systematic monitoring of the environment, a close connection to the markets and investment into exploration and the company board. This also was very much in line with the Tornikoski et al. (2011) findings regarding management of growth.

The SO businesses included in the dataset tended to grow slowly, but they did grow profitably (Sorama et al. 2015, 214–219). The authors further introduced a framework for profiling growth enterprises based on their growth motivation and growth opportunities so that development services and measures could be better targeted to their needs. The framework containing five different business types was further amended by Sorama et al. (2018) regarding potential dynamics of businesses over time and is presented in Figure 4.
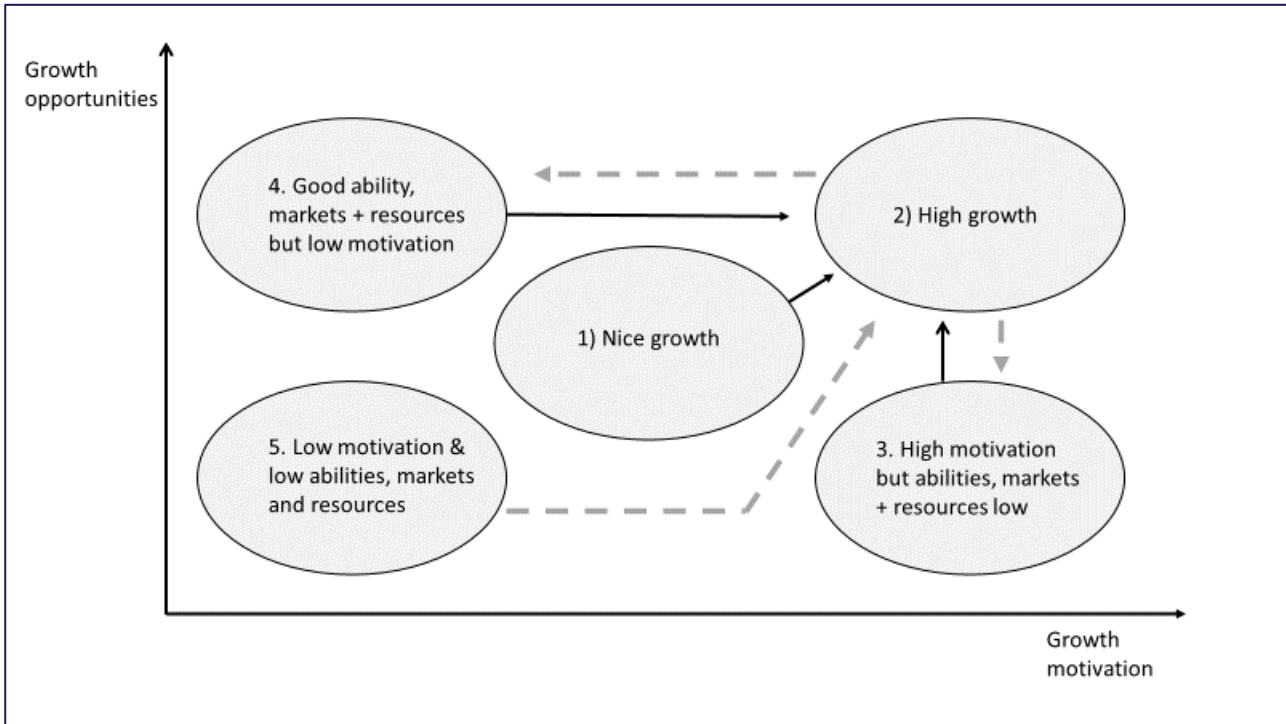
Figure 4. Profiling model for growth enterprises by growth motivation and growth opportunities (translated from Sorama et al. 2015, 219 and Sorama et al. 2018, 174).

Prior research work in SO has also focused on issues limiting growth, with Sorama et al. (2015) and Sorama et al. (2018) presenting a theoretical model of bottlenecks in growth entrepreneurship (Figure 5). Certain problem areas block growth paths and can prevent the unlocking of organisational potential as well as growth. The bottlenecks identified from the research included lack of entrepreneurial orientation and competence; appetite for calculated risk; managerial competence to get the growing organisation to move in the same direction through leadership, monitoring and control plus networking; utilisation of information in decision-making, and executive-level strategy development with the board as well as active competence development (Sorama et al. 2015; Sorama et al. 2018).

Figure 5. Bottlenecks of growth entrepreneurship (translated from Sorama et al. 2015, 217 and Sorama et al. 2018, 31).

Albeit not a peer-reviewed work, a Finnish-language Master's thesis from Kangas (2018) reported interesting findings from a study on SME entrepreneurs and their (un)willingness to grow – the sample consisted of SME owner-managers based in the Kanta-Häme (Tavastia Proper) region and the research design used was factor analysis using material from a quantitative online survey with 101 responses, supplemented by regression analysis as well as analysis of variance (Kangas 2018, 47–63).

All entrepreneurs were highly committed to entrepreneurship and trusted their abilities. However, two separate groups were identified during the analysis: growth entrepreneurs and entrepreneurs in a static phase, each with three sub-categories. For growth entrepreneurs the categories were, translating from Finnish, "responsible successor", "dynamic developer", "proactive ideator" and for the static-phase entrepreneurs "confident extrovert", "enterprising expert" and "networking development-optimist" (Kangas 2018, 114–117).

The responses from the entrepreneurs in the static phase group indicated greater-than-average insecurity, which was thought to further reflect on the perceptions of the state of the enterprise and the future (Kangas 2018, 116–117). The appetite for risk was lower in this group as was the willingness to set goals. Uncertainty, safety orientation and the risks of the growth process as well as the expected negative consequences for the income and personal values

limited willingness to grow. The participants were also frequently interested in things other than purely financial goals and values.

Kangas (2018, 122) further noted that the concept of unwillingness to grow didn't seem to properly describe the situation in the no-growth companies, and that the phenomenon of no growth would seem to be more complex. Although the results are not generalisable or peer-reviewed, the findings were interesting considering previous research and replication of the study in the SO region at a later stage might yield interesting new data.

2.2 Internationalisation

Initially much of the academic internationalisation research has looked at large Multinational Corporations (MNC). Although SMEs are far more numerous than large companies or MNCs and form the backbone of economies everywhere, findings from the latter company types dominated research (Sidik 2012, 374; Dabić et al. 2019) until the incompatibility of contemporary theory and empirical findings when it came to family businesses, smaller SMEs and "born-globals" eventually started to attract more attention (Kampouri, Plakoyiannaki & Leppäaho 2017).

To start with, Johanson and Vahlne's influential Uppsala model (1977) also focused on large industrial companies, which sought business growth from abroad in a gradual fashion. This early work of Johanson and Vahlne posited that internationalisation was the outcome of a series of business choices and depended on the "gradual acquisition, integration and use of knowledge about foreign markets and operations" (1977, 23). The classic model has since evolved significantly over time to look more into the role of networks and the entrepreneurial process in the issue (Johanson & Vahlne 1990; 2006; 2009, Schweizer, Vahlne & Johanson 2010; Vahlne & Johanson 2013; 2017), but the process ontology of the model remains and continues to highlight knowledge development and resource commitment. Furthermore, the focus continues to be on larger Multinational Business Enterprises (MBE).

In the Finnish context, Luostarinen (1982) and Welch and Luostarinen (1993) have looked at the process of internationalisation in a similar fashion. Luostarinen (1982, 134) suggested that local companies not only had push factors such as small market size and the need to improve competitiveness, but also pull factors such as the openness of international markets and opportunities created by international demand. According to that line of thinking, an

internationalisation strategy would need to address three different facets of foreign market entry (abbreviated as POM) – 1) what, guiding Product strategy, 2) how, guiding Operational strategy and 3) where, guiding Market selection. Later Welch and Luostarinen (1993) have also turned their attention from outward internationalisation to inward internationalisation, and their relationship in business development and public policy.

Over time a somewhat different type of company started to find its way into research literature: a born-global (Mathews & Zander 2007). The newer entrants sought foreign markets from their inception and appeared to skip or accelerate parts of the internationalisation process, leveraging networks, partnerships, developing information technology (IT) systems and harmonisation of business regulation globally. Furthermore, they attracted more research into entrepreneurship, identification of opportunities, cognitive properties and individual differences of the entrepreneurs (Shane & Venkataraman 2000; Mathews & Zander 2007).

At least four different theoretical approaches to internationalisation have evolved, namely Ownership, Location and Internationalisation (OLI) theory, Internationalisation Process Model (IPM), Opportunity-Based View (OBV) of internationalisation and the Relationships and Networks theory; a review of these is offered by Chandra and Wilkinson (2017b, 691) as they propose a network-centric complex-systems perspective to internationalisation. Their work had evolved from the OBV perspective that considers internationalisation to require entrepreneurialism and innovation so that international market opportunities can be found, developed, and exploited. They opined that the use of Agent-Based Models can help guide real-world research, managers, and policymakers, though a realistic ABM would require detailed maps of business networks and the development of an understanding of causal mechanisms driving behaviour and responses in the system, in addition to development, testing and validation over time (Chandra & Wilkinson 2017b, 698).

Small businesses as an organisation type have also attracted increasing amounts of research attention. Rodriguez (2007) reviewed inward and outward internationalisation approaches of SMEs in Mexico, Finland, France, the United Kingdom (UK) and Australia, including market entry modes and reasons for internationalisation. The method was a quantitative survey developed from initial interviews and translated into different languages. Exporting of products was the most common market entry mode, followed by service exports. Main reasons included growth, following customers, fully exploiting production capability. Shrinking domestic demand

was an additional motivation mentioned by many of the participants in all countries (Rodriguez 2007, 310; 312; 313).

Although an SME may be a legal entity, it does not have a mind of its own – people drive the business activities of an SME; most notably the entrepreneur running the company (Sidik 2012, 374). In Portugal Felício et al. (2012) had highlighted the importance of the entrepreneur's role in internationalisation in their study, investigating the construct of "global mindset" in entrepreneurs and various characteristics associated with it. However, when it comes to the entrepreneurs of South Ostrobothnia, little local data could be found on what they thought of internationalisation and what their mindset regarding it is, or how they understood the concept.

Barriers for exports

Much of the current research on SME export barriers is founded on the model proposed by Leonidou (1995; 2004, 283). These barriers consist of internal (related to the business) and external (related to the environment) issues impacting the ability of the business to effectively pursue international markets.

Researchers from various countries have used the Leonidou model; a comprehensive global review of the research on this front can be found from Narayanan (2015, 108–110). Below is an overview of three studies (Table 1); especially the New Zealand literature could be of interest for Finns as the country is even further away from anywhere.

Table 1. Barriers for exports from three SME internationalisation studies.

Researchers	Pinho & Martins 2010	Kahiya 2013	Shaw & Darroch 2014
Country	Portugal	New Zealand	New Zealand
Main barriers observed	Lack of market knowledge Lack of experienced export personnel Lack of product/ service suitability Foreign competition	Knowledge & expertise Risk & return Market development obstacles Foreign restrictions & standards	Finance Costs Limited market knowledge Lack of government incentives Company size Location/distance

Different types of surveys have commonly been utilised by researchers studying export barriers, with some variation observable in the questions based on the country in which they were used and how they were analysed. Much of the research in this front has been quantitative, using large samples.

Studies from Finland

Overall, much of the recent Finnish-language SME and internationalisation research would appear to consist of bachelor's and master's theses from various Universities of Applied Sciences (UAS) in addition to various institutional research reports, the former two being a majority. The same would seem to apply to Swedish-language materials as the few studies from Finland discussing SME internationalisation tended to be very limited bachelor's theses, most often from the same UAS in Ostrobothnia region. Some recent Swedish-language material was available from Sweden, but many of these were also non–peer-reviewed studies available from the DiVA portal (the digital science archive of Sweden). No searches were done in other languages. Most of the peer-reviewed SME and internationalisation research has been published in English, and the topic of SMEs seems to be attracting increasing quantities of interest.

The contents of three Swedish-language bachelor's theses were reviewed out of interest, to get an idea of the research conducted in the coastal areas of the neighbouring region which, according to customs statistics, have tended to do better with exports. The studies were not peer-reviewed or very extensive, and mostly used qualitative or using simple quantitative methods, affecting their power and generalisability.

- Brandt (2018) ran a survey with an 8% response rate and 60 responses, focusing on export and internationalisation of the SMEs of Central Ostrobothnia. Of the 60 businesses taking part, 60% were not exporting and 21% did not intend to. Help was needed with marketing, translations, financing and access to consulting and advice. Main perceived barriers included no need to internationalise, finding customers and financial reasons.
- Grahn (2016) had submitted a qualitative study looking at success factors of internationalised family businesses, consisting of interviews (6 questions) and a survey (14 questions), with 4 businesses as participants. Success factors included customer service, staff competence and product quality. Personal selling, the curiosity and motivation of the management, the workforce as well as investment in

quality and products were deemed important in the process. The Central
Ostrobothnia region with its long coastline had long traditions of international trade,
export, and self-reliant entrepreneurialism. Companies had internationalised to
pursue growth beyond the small Finnish market, and bilingualism was considered a
competitive strength, along with the good range of logistics solutions available.
Sweden was the main market of many companies, followed by other Nordic
countries, EU, Asia and North America.

– Nivukoski (2017) looked at SMEs' interest in doing business over the Gulf of Bothnia
both in the Swedish and Finnish coastal areas, with material collected from 34
qualitative interviews. Attitudes were generally positive, but the Swedish companies
found legislative, cultural and language differences difficult, along with transport
costs and staff availability. Finnish companies had found no interest from Sweden
for their products and competing on price was difficult in Sweden especially in the
absence of reliable logistics partners.

Studies looking at related issues (entrepreneurship, growth) and internationalisation in other
regions can offer some pointers for the current research. Based on the literature review, the
research gap concerning SO SME internationalisation seems real, which adds novelty value
to the current study. Furthermore, studies taking a systems approach to internationalisation
would seem to be a newer phenomenon.

2.3   Complex Adaptive Systems

The paradigm of complex systems has made its way from the studies of the biosphere (Levin
1998) to the studies of the business ecosystem (Peltoniemi & Vuori 2004; Foster 2005;
Markose 2005). Fuller and Moran (2001) describe complexity science as an interdisciplinary,
evolving field. As a paradigm, complex adaptive systems can be defined through how it
understands reality, knowledge, and ways to acquire it (Table 2).

CAS as a paradigm

Complex systems theory recognises dynamism, impermanence, uncertainty and imperfection
of circumstance, as complete knowledge cannot be assumed at any time (critical realism).
When it comes to information processing in a complex system, the assumption of perfect
rationality frequently falls apart as complexity increases and trade-offs between speed and

accuracy can occur (Arthur 1994, 406–407) – problems become fuzzy and determining a result with obvious logical steps becomes challenging.

Table 2. Complex Adaptive Systems as a research paradigm.

Philosophical question	Approach	Descriptions
Ontology: What is the nature of reality;	Critical/scientific realism	"Truth and universal laws exist but discovery of these truths is near impossible ... discoveries are only partial segments or approximations of truth" (Levers 2013, 3) "Knowledge … is socially constructed, and therefore fallible" (Fuller & Moran 2001, 49)
Epistemology: How can I know anything	Post-positivist (objectivist)	"…Need for rigour, precision, logical reasoning and attention to evidence is required … not confined to what can be physically observed" (Crossan 2003, in Levers 2013, 3) "Causality ... does not carry the same construct of being generalizable that the notion of causality carries in social positivism." (Fuller & Moran 2001, 49)
Methodology: How to discover knowledge?	Systemic, anti-reductionist	"Let complexity science inform our methodologies for investigating the social sciences." (Fuller & Moran 2001, 50) "Theorizing, conceptualizing and abstracting meaning is model-centred." (Fuller & Moran 2001, 60) "Iterations between experimental forms of scientific analysis … grounding of emergent or evolving theories" (Fuller & Moran 2001, 47)

This issue has been addressed in papers on fuzzy logic (Kosko 1986, 65; 67) and in the literature on bounded rationality (Arthur 1994; Sarma 1994; Conlisk 1996; Gigerenzer & Goldstein 1996; Camerer 1998; Dequech 2001; Kahneman 2003; Manson 2006; Lee 2011). The fuzziness of causality and knowledge also makes generalisations and predictions difficult – iterating and model development over time enables the incorporation of any emergent theories (Fuller & Moran 2001, 47–60).

At the level of methodology and methods used in the current research, the work relies most on methods that in previous research have been used in understanding and interacting with complex systems and can assist in creating an understanding of internationalisation as an issue. Sources of information are not rejected simply because they have not frequently been used in business research – after all, an interdisciplinary disciplinary approach is typical for complex systems. These will be further reviewed in the Methods section.

Mallampalli et al. (2016, 9–10) have reviewed a variety of different methods that can be used in translating complex qualitative scenarios into quantitative assessments; these include causal loop diagrams visualising system dynamics, agent-based modelling, fuzzy cognitive maps and fuzzy sets, pairwise comparisons, Bayesian reasoning and networks, role playing games, surveys and semi-structured interviews as well as literature reviews.

Due to the "theorizing, conceptualizing and abstracting" (Fuller and Moran 2001, 60) and the qualitative approach selected, there is some overlap with more interpretative orientations and the author is also mindful of criticisms levelled at CAS research, including accusations of it being "a garbage can model" (Ratnatunga & Romano 1997, cited in Fuller & Moran 2001, 49). The latter term appears to be a meme with a life of its own, as Ratnatunga and Romano themselves used and analysed the fitness of the expression in response to its use in Martin's (1982) work. The aim here, however, is integration of information from various sources into a whole, rather than dumpster diving.

Key characteristics of complex adaptive systems

What are the hallmarks of a CAS, then? According to Foster (2005, 874) CAS is a system that takes in information from its environment and processes it into stores of knowledge which can aid action – learning happens. The following list includes some other key characteristics of a CAS at various levels of observation:

1. Novelty arises through adaptation and emergence (Markose 2005, F160);

2. The properties of a system or its trajectory over time, likely linked or embedded to other systems, cannot be simply deduced from its parts and for example any synergies of co-action are emergent properties (Markose 2005, F161)

3. A CAS typically has a multitude of separate components with localised interactions but also potentially numerous connections to other components (Foster 2005, 874);

4. The system has an autopoietic or self-organising dynamic as the outcomes of local interactions feed an autonomous selection process through "creative destruction", co-evolution, adaptation and emergence (Foster 2005, 874; 876; Markose 2005, F160; 168);

5. A CAS exists the "edge of order and chaos" (coined by Langton in 1990) where the "forces that maintain order coexist with forces pushing a system towards disorder, allowing both flexibility and structural integrity" (Foster 2005, 876) – structure can develop while there is some semblance of balance in the system, but it is temporary at best, as a Red Queen dynamic linked to co-evolution of other components can turn adaptation into an evolutionary arms race (Markose 2005, F178);

6. Over time the system exhibits non-linear path dependency with irreversibility and sensitive dependence (Levin 1998, 433; Fuller & Moran 2001, 51; Bishop 2011, 108; 111–112) i.e. the trajectory of the system is unidirectional and dependent of its history, yet the future behaviour of the system may vary greatly because of only small changes to existing conditions;

7. There is a relationship between the uncertainty or fuzziness of the system details and the knowledge acquisition/processing trade-off linked to this (Kosko 1986, 65; 67) – not only are elaborate models difficult to process, but complexity also frequently means loss of predictability over time as uncertainty tends to grow exponentially (Bishop 2011, 109; 116);

8. Conversely, fuzzy heuristic-type representations of a system are easy to acquire, but as the lack of detail translates into uncertainty in a model, the predictability of any trajectories at the face of increasing uncertainty is also fuzzy at best (Bishop 2011, 117). With the local, small-scale interactions invisible at a higher level, phenomena seem to emerge from nowhere.

Businesses and entrepreneurial ecosystems as CAS

The complex systems paradigm and system dynamics thinking have gained traction in the past decade especially when it comes to the study of entrepreneurship, internationalisation and

ecosystems research. Organisational change has been investigated from the CAS perspective for almost 30 years, while later resilience studies aim to complete the picture from the sustainability viewpoint.

– CAS model of organisational change: Dooley 1997;
– Small business as a CAS: Fuller & Moran 2001;
– CAS in economics and markets: Foster 2005; Markose 2005;
– Internationalisation as a systematic process: Jones & Coviello 2005; Chandra & Wilkinson 2017b;
– Interdisciplinary, integrative business research: Amaral & Uzzi 2007;
– Dynamic capabilities (DC) in the systems context: Barrales-Molina, Bustinza & Gutiérrez-Gutiérrez 2013;
– Dynamic systems, mental models and modelling in entrepreneurship research: Groesser & Schaffernicht 2012; Zali, Najafian & Colabi 2014
– Complex systems, crisis events and organisational resilience: Limnios et al. 2014; Saunders, Gray & Goregaokar 2014;
– Internationalisation as an emergent property: Chandra & Wilkinson 2017a;
– Business ecosystems theory with CAS: Peltoniemi & Vuori 2004; Jacobides, Cennamo & Gawer 2018; Roundy, Bradshaw & Brockman 2018

In their exploratory work on applying the CAS framework to business, Fuller and Moran (2001, 54) proposed a number of different, interlinked contexts for the small business entrepreneur – it is worth noting that their list was limited to only rather obviously business-related contexts, expanding from 1) the biological individual level to 2) cognitions, mental models and constructs to 3) motivations and capabilities, 4) activities and relationships, 5) SME business model, 6) business-to-business relationships, 7) relationships in the local networks and clusters, 8) relationships at the macroeconomy level all the way to global business level. One aspect seemingly missing from the model was the wider social context and its influence on the business side of things, in addition to the influence of the physical environment.

Chandra and Wilkinson (2017) have considered internationalisation an emergent property of the network-centric business ecosystem, while Roundy et al. (2018) have proposed the same of entrepreneurial ecosystems. According to complexity theory (see point 2 in the earlier list) these cannot be understood without interacting with the entire system, but on the other hand

the mere interaction with the system might change it as small changes may yield unforeseen downstream effects.

Stylios and Groumpos (2004), Özesmi and Özesmi (2004) and Markose (2005) inter alia have demonstrated how computation could be utilised in complex system simulations, which could be useful where the level of detail in the model would start to exceed human processing capability. Nair and Reed-Tsochas (2019) saw potential in the application of the CAS perspective to operations and supply chain management, as the paradigm and its methodology could help understand both the process and outcomes in many situations. An interesting application they raised involved investigating manufacturing system performance with the aid of entropy flow dominance. In the design reported, information could be operationalised as the energy expended in obtaining, processing, storing, and communicating information, with the total understood as isomorphic to negative entropy in the system (Nair and Reed-Tsochas 2019, 88–89). In other words, energy (E) could be defined as the ability to do work – calculated from the rate at which work i.e. information processing is performed (power, P) multiplied by time (t) – which can be thought to reduce the amount of disorder in the system and modelled in scenarios.

The development and integration of complex systems theory to business theory remains work in progress (Fuller & Moran 2001; Nair and Reed-Tsochas 2019). Barrales-Molina, Bustinza & Gutiérrez-Gutiérrez (2013) have reconciled DC generation (referring to a malleable set of business competences, as conceptualised by Teece, Pisano and Shuen in 1997) with the complex systems model, understanding it as emergence in action. Addressing uncertainty, vulnerability and resilience in a volatile, uncertain world has shown especially in the work of Dooley (1997), Berkes (2007) and Bristow and Healy (2013; 2014; 2015). Westley et al. (2013) proposed "transformative agency" as the strategic antidote for any perceived powerlessness as a system participant: although one might not be able to manage or control the system to the extent that traditional risk managers would like to, a variety of engaged change agents might well be able to transform the system by working to change stakeholders' beliefs, challenging existing frameworks and integrating local knowledge while mobilising social capital in their networks. Waddock et al. (2015) have also looked at the role of change agents in achieving large-scale organisational change and strived to integrate the theories of complexity and wicked problems in their work.

2.4   So what's the problem: tackling wicked problems

A concept influenced by and overlapping complex systems is "wicked problems", which are hard to define, difficult to fix conclusively and therefore very stubborn; "at best they are only re-solved – over and over again" (Rittel & Webber 1973, 160; Waddock et al. 2015, 996–998). Originally Rittel and Webber (1973, 160) listed 10 key properties for wicked problems, and the list has been developed and debated since.

The following things are characteristic of wicked problems:
1. A wicked problem lacks a definitive formulation.
2. The problem cannot be conclusively solved; there is no stopping rule.
3. Solutions can be good or bad, but not true or false.
4. There is no way to test or immediately determine how good a solution to a wicked problem is – it can turn out to be bad.
5. Interventions irreversibly change the system, so each implemented solution is a "one-shot operation" (creating problems where one might have considered taking an iterative approach).
6. The number of potential solutions or interventions to a problem cannot be exhaustively determined due to complexity of the system and emergence.
7. There has never been an identical wicked problem like the one you have now, and there will never be one – they are unique in their context.
8. Each wicked problem is a symptom of another wicked problem.
9. The discrepancy representing the problem can be described in a variety of ways.
10. "The planner has no right to be wrong" – interventions have consequences (see point 5), and thus they are not mere thought experiments or hypotheses offered for refutation.

Levin et al. (2012) expanded on the original concept, highlighting "super wicked problems" that have four distinct features: 1) when it comes to the window of opportunity for solving the problem, time is running out; 2) the entities causing the problem are also attempting to offer a solution; 3) there is a weak or non-existent central authority who could decisively address and fix the problem and 4) responses are pushed into the future thanks to biased, irrational discounting. In touching on super wicked problems, Peters (2017, 389) raised the point that frequently, the public sector of many multilateralist democracies does not excel at dealing with longer-term issues, not least because policy changes disrupting continuity are often the result

of changes in partisan control and party politics rather than any other material change in the circumstances pertaining to the issue. However, in that regard one might argue that the political dimension is very much a key part of the system whereby changes in that dimension will affect the functioning of the system even if nothing else will, and this reality would need to be recognized when planning any measures.

In their insightful if also non-academic popular science article Walls (2020) noted that another feature of a wicked problem consisting of a jumble of "social, economic, and political factors and value conflicts" is that not addressing the problem is also a viable option – even though that is often increasingly difficult, especially if the time is running out. Although not all problems have an event horizon, so to say, delaying action can threaten the resilience and sustainability of a system over time.

Waddock et al. (2015, 1004–1004) suggest that while no entity can be expected to single-handedly control or change an entire system where the wicked problems are embedded, broad-based development of small, coherent "nudges" that transform social norms, mobilise stakeholders and shift the system in the desired direction can effect sustainable change as long as 1) critical mass is engaged for sustained momentum, 2) the outcomes are constantly reviewed and 3) the nudges refined to ensure that the system's evolution continues to shuffle in the general direction of desired ends. As the system keeps on changing nevertheless, there is no stopping rule and therefore shepherding system change and nurturing emergent positive developments are ongoing processes.

While a comprehensive, integrated theoretical framework is yet to be developed (Waddock et al. 2015, 1008), the concept of wicked problems has ended up being an influential construct in policy research as Crowley and Head note in their 2017 review. The approach has of late gained popularity especially in attempting to frame and solve climate change-related issues; possibly ad nauseam, as for example Peters (2017, 286) has criticised some contemporary policy researchers for turning wicked problems into a "fad", as well as for abusing the concept by applying it to situations that strictly speaking do not fit the definition, thus diluting its precision and usefulness in discourse. Although the approach selected here is open to debate, it is deemed that internationalisation can indeed be defined as a wicked problem without stretching the concept beyond recognition.

3   SOUTH OSTROBOTHNIA AS A BUSINESS ECOSYSTEM

A quick review of entrepreneurship in SO begins this chapter and an overview of the regional business ecosystem and previous SO internationalisation research is offered. As the national policies and frameworks also influence activities in the region, the work also looks at the planned future directions for growth and internationalisation at the governmental level and the existing support network for internationalisation, concluding with the key arguments for the current investigation. The research methodology and the related theory are discussed more thoroughly in the later Methods section.

3.1   What is known about the entrepreneurs of South Ostrobothnia?

Overall, Finland had about 300,000 entrepreneurs in 2017 (Statistics Finland 2018, 20). Statistics frequently sub-categorise entrepreneurs into three distinct categories: agricultural entrepreneurs, self-employed with no staff, and employer entrepreneurs. Of these, self-employed form the majority (54%; Statistics Finland 2018, 20). Drilling down to SO more specifically, 89% of the established companies in the region employed zero to four people (2018 data; Statistics Finland), indicating that the size of most established companies in the region would be rather small.

SME prevalence is not unique to SO. SMEs constitute 99% of the businesses across the member states of the Organisation for the Economic Co-operation and Development (OECD) as well as 99% of businesses within the EU while SMEs form a majority also in Finland (OECD 2019; European Parliament 2020). Statistics Finland's 2016 retrospective indicated that 98% of the national enterprise stock of 357,000 is made up of SMEs (Statistics Finland 2017).

National entrepreneurship statistics

As local data was scarce over the course of the research process, national statistics were looked at to get an approximate idea of the different demographics involved. The 2017 data presented in the entrepreneurship review of Statistics Finland indicated that Finland had approximately 316,000 entrepreneurs, of which 172,000 were self-employed (54%), 88,000 were entrepreneurs who also employed staff (28%) and 56,000 were agricultural entrepreneurs (18% as per Statistics Finland 2018, 20 – the source contains an error in the table re: reported total vs sum of parts; this was corrected and entrepreneur family members are excluded from

the total). Only about 15% of the employer entrepreneurs employed more than 10 persons in 2017 (Statistics Finland 2018, 21). Of the total of all entrepreneurs, 62% were over the age of 45 and notably 11% of Finnish entrepreneurs were between 65 and 74 years of age. More men than women were found to be entrepreneurs (roughly 200,000 vs 100,000; Statistics Finland 2018, 13; 20).

The education levels varied somewhat in Statistics Finland data (2018, 20; some inconsistency in rounding of figures as their total exceeds 100%) – 15% of entrepreneurs had not pursued formal education after comprehensive school, 46% of the entrepreneurs had an upper secondary qualification and 41% had a tertiary education degree.

The educational level attained could be thought to influence the choice of industry, as some differences are observable from the data: tertiary degrees appeared to be common among entrepreneurs working in the fields of specialist information work, culture and creative work as well as healthcare, commerce and knowledge work (80%, 49% and 63%, respectively; Statistics Finland 2018, 21), while in the groups of entrepreneurs working in the traditional service industry and construction or manufacturing upper secondary qualifications were more common (62% and 65%).

3.2 The outline of South Ostrobothnian business ecosystem

The population figure for the SO region was 188,685 in 2019, which is just under 4% of the total population of Finland. The area covered by the region totals 13,444 square kilometres (km²), and thus the average population density is relatively sparse at ca. 14 people/km². Based on the classification system used by the Centres for Economic Development, Transport, and the Environment (ELY), significant parts of the region are rural due to their population density, with only the central parts of Seinäjoki classed as urban. This has implications for some businesses, as urban areas are excluded from specific rural development subsidies; businesses based in urban areas are still eligible for other types of support (ELY 2015, 16; Regional Council of South Ostrobothnia 2014b; 2020).

The 2018 statistics recorded 17,864 registered businesses in the region. It was not clear whether this figure would also include sole proprietorships operating on a trade name basis. The ratio of businesses per 100 people has remained significantly higher in SO when compared to the national average – in 2014 that ratio was 8.2 for SO versus 5.9 for the country overall.

However, SO businesses are typically small and one-man operations are common (Regional Council of South Ostrobothnia 2014b; 2020).

Agriculture is a significant industry in the region (see Table 3 below; Statistics Finland), and in 2018 just over a third, or 34% of the local enterprises of any size were engaged in agriculture, forestry, or fishing. Other top industries by number of enterprises were wholesale and retail trade (12%; also including repair of motor vehicles) and construction (11%).

When measured by personnel engaged by the businesses, the top 3 looks slightly different with manufacturing topping the list with 29% of the total workforce engaged by different industries, followed by wholesale and retail (15%) and construction (10%). It is noteworthy that the table based on Statistics Finland data below does *not* include public sector employees as part of the total workforce.

Manufacturing in the region also generates the most gross value production (51%), while construction created second-most gross value (12%), then followed by wholesale and retail (9%). Some data was missing from the online table for the financial and insurance activities. Production value-add is largely similar as gross value, with manufacturing being the largest contributor (35%), wholesale and retail the second (15%) and construction third (11%; Statistics Finland).

Table 3. South Ostrobothnian industries in 2018, enterprises of all sizes, excluding public sector (PxWeb database of Statistics Finland).

Year	Industry	No. of enterprises (all sizes)	% of total	Personnel for enterprises (person-years)	% of total	Gross value of production (€1,000)	% of total	Value added of production (€1,000)	% of total
2018	*All industries*	17,864	100%	47,178	100%	8,652,997	100%	2,865,458	100%
	A Agriculture, forestry and fishing	6,156	34%	4,250	9%	118,232	1%	45,231	2%
	B Mining and quarrying	139	1%	326	1%	99,268	1%	30,165	1%
	C Manufacturing	1,383	8%	13,595	29%	4,378,753	51%	989,398	35%
	D Electricity, gas, steam and air conditioning supply	93	1%	263	1%	165,024	2%	66,358	2%
	E Water supply; sewerage, waste management and remediation activities	89	0%	315	1%	108,616	1%	42,264	1%
	F Construction	1,887	11%	4,902	10%	1,000,638	12%	318,490	11%
	G Wholesale and retail trade; repair of motor vehicles and motorcycles	2,162	12%	7,240	15%	784,175	9%	425,921	15%
	H Transportation and storage	877	5%	3,971	8%	643,849	7%	243,823	9%
	I Accommodation and food service activities	398	2%	1,488	3%	152,825	2%	63,722	2%
	J Information and communication	190	1%	664	1%	108,528	1%	56,972	2%
	K Financial and insurance activities	236	1%	837	2%	(data missing)	(data missing)	(data missing)	(data missing)
	L Real estate activities	1,301	7%	534	1%	270,210	3%	124,478	4%
	M Professional, scientific and technical activities	899	5%	1,787	4%	223,508	3%	119,390	4%
	N Administrative and support service activities	415	2%	2,379	5%	156,544	2%	101,512	4%
	P Education	112	1%	188	0%	18,599	0%	8,394	0%
	Q Human health and social work activities	650	4%	3,305	7%	315,073	4%	179,245	6%
	R Arts, entertainment and recreation	211	1%	502	1%	56,552	1%	22,804	1%
	S Other service activities	664	4%	629	1%	52,555	1%	27,256	1%
	Unknown	2	0%	1	0%	49	0%	35	0%

The role of SMEs

The work here uses the EU recommendation 2003/361 for distinguishing between micro, small and medium enterprises in the SME category (Table 4; European Union Commission 2003), although this does cause some compatibility issues with the Statistics Finland data as different break-off points and categories are used there. Mainly this issue affects the data presented in Table 5 further below.

Table 4. Definitions of different European small business entities (European Union Commission 2003).

Enterprise category	Headcount: annual work unit (AWU)	Annual turnover	OR	Annual balance sheet total
Medium-sized	<250	≤ EUR 50 million	OR	≤ EUR 43 million
Small	<50	≤ EUR 10 million	OR	≤ EUR 10 million
Micro	<10	≤ EUR 2 million	OR	≤ EUR 2 million

Based on the EU recommendation, the micro enterprise category includes businesses with fewer than 10 employees or a turnover/annual balance sheet total of 2 million Euros [€, EUR] or less. The small business category includes businesses with a headcount of less than 50 people or an annual turnover/balance sheet total of €10 million or less. Medium-sized businesses must have a headcount of under 250, annual turnover of no more than €50 million or annual balance sheet total of no more than €43 million.

In the 2018 data available for the SO region, 94.64% of all businesses in the region were micro-enterprises and the smallest companies employing 0 to 4 people formed the single largest group of businesses (89%; see Table 5). Micro and small enterprises were significant employers as measured by headcount, and their combined gross value or value-add exceeded that of other types of businesses.

The Solo Entrepreneur Survey by the Federation of Finnish Enterprises (Hämeenniemi, Hellsten & Ketvel 2019) reported that many SO solo entrepreneurs were operating under a trading name as a sole proprietorship, which would not show up in the national statistics the same way as limited liability companies. Industries in which many solo entrepreneurs operated involved retail and construction, with services being slightly less common in the SO region. A

low level of income was prevalent among sole proprietors, with 58% reporting gross income of less than EUR2,000 per month. Another problem observed was the difficulty of finding shift cover if required, with only 16% of the entrepreneurs reported having a substitute available, and many had been working for over a week while sick in the past 12 months. Tight finances and limited resources seemed to thus characterize the smallest companies in the region.

Table 5. South Ostrobothnian small, medium and micro enterprises in 2018 with key indicators (Statistics Finland).

Size of business	No. of businesses in category	No. of personnel	Gross value of production (€1,000)	Value added of production (€1,000)
All businesses	17,864 (100%)	47,178 (100%)	8,652,997 (100%)	2,865,458 (100%)
Micro enterprises (<10 employees)*	16,907 (94.64%)	18,581 (39%)	2,366,595 (27%)	1,031,121 (36%)
Small enterprises (10–49 employees)	850 (4.76%)	15,934 (34%)	2,810,909 (32%)	1,046,355 (37%)
Medium-sized enterprises (**50–199 employees)	92 (0.52%)	7,878 (17%)	1,703,511 (20%)	481,056 (17%)
**Enterprises with 200+ employees	15 (0.08%)	4,785 (10%)	1,771,981 (20%)	306,926 (11%)
(The Statistics Finland table does not separate 2018 data for largest medium enterprises and large enterprises. The 2003 EU recommendation for definitions classifies businesses with <10 employees as micro, 10–49 employees as small, and 50–249 employees as medium)				
* Enterprises with 0–4 employees	15,926 (89%)	12,247 (26%)	1,561,616 (18%)	686,007 (24%)

Growth orientation in the region has been reported to be low (Sorama et al. 2018). One of the recurring questions of the SME survey which is released every spring and autumn by The Federation of Finnish Enterprises looks at growth orientation of participating businesses; the data for the 2017–2021 surveys can be seen in Table 6. A minority of the businesses had a strong growth orientation, and most companies seemed to be happy with maintaining their

position in the market, although about a third of the respondents had some plans for growth. Having no growth target whatsoever was also common in the surveys.

Table 6. Growth orientation of South Ostrobothnian enterprises, quota-based randomised sample. (Source: The Federation of Finnish Enterprises 2017a & b; 2018a & b; 2019a & b; 2020a & b; 2021a).

Survey measure	2017		2018		2019		2020		2021
	A	B	A	B	A	B	A	B	A
Number of responses	298	240	291	271	253	323	252	279	411
Growth orientation, %									
Strong growth orientation	8	8	7	6	7	4	5	5	4
Growth-oriented	34	34	35	35	30	27	30	28	30
Maintaining position	36	34	37	33	36	36	38	38	39
No growth target	19	21	18	23	24	28	25	25	25
Closing down	3	2	3	3	4	5	2	5	2

A= Spring, B= Autumn

3.3   Research on internationalisation – South Ostrobothnia

Guiding development in the area, the Regional Council of South Ostrobothnia has focused on increasing internationalisation from 2009 and had moving up four places in the national export statistics as one of the goals of its internationalisation programme from 2014 (2014a; 2019a).

As noted earlier, while research contemplating SMEs and internationalisation has increased over time, most Finnish studies have examined the topic at the national level, focused on other regions or at best neighbouring provinces (the coastal Ostrobothnia region), and many have been non–peer-reviewed Bachelor's or Master's theses. Any papers published in academic journals have commonly had a more transregional focus (Kontinen & Ojala 2012; Jokela, Niinikoski & Muhos 2017; Joensuu-Salo et al. 2018). Only one study, a Bachelor's thesis submitted by Kiuru in 2018, looked at internationalisation in SO SMEs specifically, but only regarding 12 tourism businesses. Tourism from overseas also contributes to the regional export figures, and thus tourism promotion has a role in the regional export promotion strategy although its regional significance at the level of employment and value-add is relatively small (Statistics Finland; Regional Council of South Ostrobothnia 2019b).

A significant challenge for the study of businesses in SO is the lack of access to comprehensive, up-to-date enterprise data – while some reports can be purchased from Statistics Finland, dedicated regional entrepreneurship reviews are published infrequently, and it would appear that no entity in the region knows the exact number of enterprises in operation when sole proprietorships are included (Sorama et al. 2018, 2018). Both qualitative and quantitative data are scarce: since the typical regional SME employs fewer than 10 people and many are not incorporated, little information is readily accessible beyond mandatory data contained in the Companies Registry – businesses that are run as sole proprietorships are excluded from the Voitto+ registry maintained by Suomen Asiakastieto Oy, as they are not required to submit annual financial reports (Suomen Asiakastieto; Wuori & Vainio 2004, 28; Kettunen et al. 2015; Sorama et al. 2018).

Measuring internationalisation – the issue of exports

The draft version of the 2019 regional internationalisation programme as well as the 2014 version focused a lot of the attention on exports as a Key Performance Indicator (KPI) of internationalisation (Regional Council of South Ostrobothnia 2014a; 2019a) but operationalising internationalisation as "products shipped and sold overseas" is problematic.

The Finnish Customs uses Intrastat export notifications to compile statistics on exports by region where the figures are based on which region was registered as the origin of goods (Finnish Customs 2018a; 2018b). Although the Customs does manually adjust some of the information in cases where the company operates in several regions and the province of production is different from that of the company's Head Office, much of the subcontracting output originating from SO would be assigned to other areas if the final product is assembled elsewhere for export.

Subcontracting is a significant source of business for local SMEs, and thus the outputs of vendor contracts would naturally not show up in the statistics (Regional Council of South Ostrobothnia 2014b; 2019a). Furthermore, the Customs statistics do not include trade on services, leaving out other parts of the picture. This would include for example service-based subcontracting using a XaaS model (anything as a service) where the clients are abroad.

The biannual SME survey by The Federation of Finnish Enterprises (see Table 7 for a summary) has consistently indicated that a noteworthy portion of the sampled SO enterprises

have been engaged in export of services, as well as export or other international activity (The Federation of Finnish Enterprises 2017a; 2017b; 2018a; 2018b; 2019a; 2019b; 2020a; 2020b; 2021a). As it is compiled and published regularly, the SME survey is one of the better sources of local information when it comes to internationalisation intentions and activities,. However, the data reported in the surveys is from a quota-based, weighed random sample, and thus it does not contain time series data from the same people or businesses.

Table 7. Internationalisation data for South Ostrobothnian enterprises, quota-based randomised sample. (Source: The Federation of Finnish Enterprises 2017a&b; 2018a&b; 2019a&b; 2020a&b; 2021a).

Survey measure	2017		2018		2019		2020		2021
	A	B	A	B	A	B	A	B	A
Number of responses	298	240	291	271	253	323	252	279	411
Internationalisation									
Has export or other business activity overseas, %	18	17	17	20	20	15	18	18	16
Of these (participants could select more than one):									
Direct export of services, %	(61)	33	(61)	31	20	24	24	44	19
Direct export of goods, %		59		40	44	48	40	27	60
Foreign joint venture or subsidiary, %	10	17	14	9	13	12	2	12	10
Contract manufacturing or foreign subcontractor, %	9	4	7	7	5	1	16	1	7
Licensing or franchising, %	2	5	1	0	3	3	0	7	2
Other, %	29	10	28	29	26	32	32	21	24
Investment in internationalisation in the course of next year	[No data for 2020, 2021]								
Increases, %	14	11	10	9	4	9	-	-	-
Remains the same, %	69	75	63	66	68	66	-	-	-
Decreases, %	17	14	27	25	28	25	-	-	-

A= Spring, B= Autumn

Making data-driven business or service development decisions in the South Ostrobothnia region could be deemed difficult for the time being. Some light can be seen at the end of the tunnel, as the issue of data availability is reportedly being addressed by the national Export and International Growth Programme (published by the Ministry of Economic Affairs and

Employment of Finland on 19 October 2020), and increasing trade on services as well as improvement of data collection and analytics are on the government's agenda for the 2020–2023 period. A variety of organisations will be involved in the mobilisation of the strategy.

New directions: Linking internationalisation to regional sustainability and resilience

The Regional Council of South Ostrobothnia has, since the latest version of the internationalisation plan (2019b) highlighted the impact and importance of internationalisation also on the long-term viability of the region. Another key term in regional planning also stems from complex systems theory: resilience.

Resilience is defined as the system's capacity to absorb recurrent disturbances (Berkes 2007, 283; Bristow & Healy 2013) – leveraging transformative agency (Westley et al. 2013), learning to live with uncertainty and continuous change as well as fostering diversity while building linkages, networks and knowledge can help build resilience and reduce the risk of system failure even in the presence of complex system dynamics and wicked problems (Berkes 2007, 283; Waddock et al. 2015, 1006–1007).

Although the concept was initially used in the context of regional future planning, decreasing birth rates and general worry over the vitality of rural areas (The Regional Council of South Ostrobothnia 2014b; 2019b; 2020; Ministry of Economic Affairs and Employment 2020), the Covid-19 pandemic has added a new twist to any regional development plans as it has served a definite shock to the system.

3.4   The Export and International Growth Programme – the way forward

The Ministry of Economic Affairs and Employment launched a national Export and International Growth Programme in late 2020, where the following focus areas were identified for the 2020–2023 period: 1) demand-driven ecosystems, 2) development of internationalisation services, 3) diverse domestic and international supply of funding and its more efficient utilisation and 4) climate solutions (Ministry of Economic Affairs and Employment 2020, 11–16).

The first two sections aimed to leverage national Research, Development, and Innovation (RDI) investment tools to develop solutions and their capabilities. The second point also included a) the expansion of Business Finland (BF) networks overseas, b) support for capability

development in Finnish businesses, c) clarifying and streamlining of service offering for internationalisation services as well as a d) growth and internationalisation programme spearheaded by ELY centres, and finally e) an exploration of the situation with service exports.

The development of funding instruments as part of point 3 would support the measures introduced in point 2, while the point 4 aimed to lift the national profile as a country of low-carbon innovation and circular economy. The programme also listed bottlenecks at the company level, at the level of the operating environment and in accessing internationalisation services (Ministry of Economic Affairs and Employment 2020, 33–34) that the programme means to address over time.

3.5   Support services for internationalisation

The new internationalisation programme aims to address several issues that have been raised for some time by internationalisation professionals in the SO action plan. For the uninitiated, the ecosystem of different stakeholders and service providers may be a lot to take in at the first look (Figures 6–8).

The figures presented have been drawn based on the information available on the Export and International Growth Programme, the various organisations' websites, as well as the Team Finland website and the entities identified during the course of the research (Academy of Finland; Finnish Food Authority a; d; Finnish Immigration Service 2021; Finnish National Agency for Education a; Ministry of Economic Affairs and Employment 2019; 2020; Ministry of Education and Culture; Ministry of Finance a; Ministry of Foreign Affairs of Finland a; b; Ministry of the Interior; Ministry of Transport and Communications; Team Finland; TE-services; The Association of Finnish Local and Regional Authorities).

Various ministries have their own focus areas, with the Team Finland (TF) partners designated to head different internationalisation programmes and instruments. BF, under the Ministry of Economic Affairs and Employment, shares the main responsibility of different interventions – together with the network of embassies and other missions working under the Ministry of Foreign Affairs.

However, for example the Ministry of Education and Culture have their own joint programmes with the earlier two ministries. The Ministry of Agriculture and Forestry coordinates and

oversees the funding of various EU programmes with the Finnish Food Authority (FFA), their aim being the developing and internationalisation of rural areas and increasing their resilience over time. The Ministry of the Interior houses The Finnish Immigration Service, which deals with immigration and residence permit issues together with designated TE-centres (Finnish employer, jobseeker and business support entities) working under the Ministry of Economic Affairs and Employment, and the Finnish missions abroad working under the Ministry of Foreign Affairs; the Ministry of Economic Affairs and Employment has been in charge of the special skills permit process and work-based immigration since 2020.

The development of the data collection and analytics at Statistics Finland, which the new programme (2020) aims to address, currently resides under the Ministry of Finance, along with some other mass data generating functions such as tax administration and digital and population data services. The transport and communication agency as well as the cybersecurity agency, however, reside with the Ministry of Transport and Communications. Another entity which might also have dealings with internationalising, data-processing Finnish businesses is the Office of the Data Protection Ombudsman, which monitors compliance with EU's General Data Protection Regulation (GDPR). The office of the ombudsman works under the Ministry of Justice, but due to space constraints it was excluded from the figure below (Figure 6).
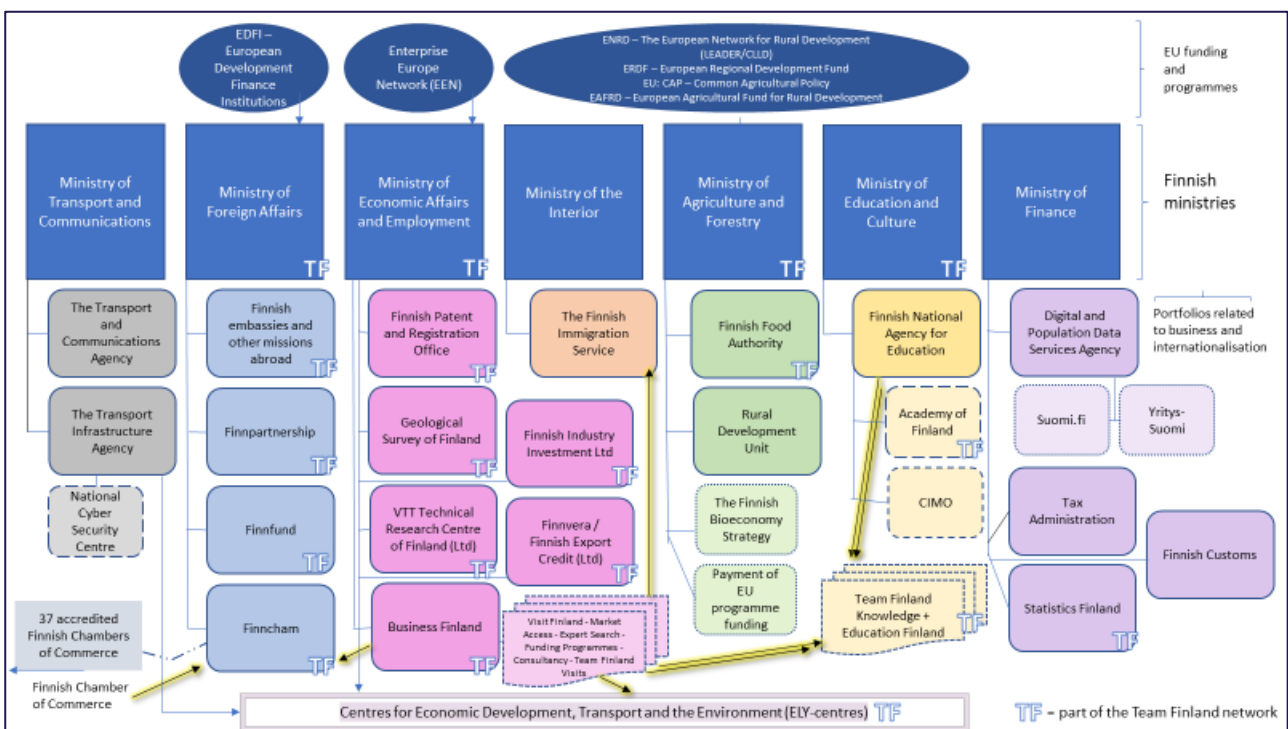
Figure 6. The who's who of internationalisation: national government level.

At the regional, SO level (Figure 7), there is also a network of various entities linked to the national level through various routes. The Regional Council of South Ostrobothnia is the umbrella organisation of the different municipalities in the region, overseeing the development of the region with the support of the national Association of Finnish Local and Regional Authorities. The regional agenda includes internationalisation as per the action plan, together with ELY centres and the TF network.

Some of the regional municipalities also have their own economic development offices that offer internationalisation services to local businesses and stakeholders. There are also secondary and tertiary education institutions offering RDI services and consulting (including Seinäjoki University of Applied Sciences), public–private partnerships for start-up services (Uusyrityskeskus), speciality consultancies (ProAgria for agricultural businesses, MDI for regional development), private consulting companies (Xport) and cross-regional service providers (Viexpo from coastal Ostrobothnia).

The recent internationalisation and growth plan aims to clarify the role of those municipal offices as well as the services offered under Ministry of Agriculture and Forestry through the Leader programme to prevent overlaps or duplication of services (Ministry of Economic Affairs and Employment 2020).
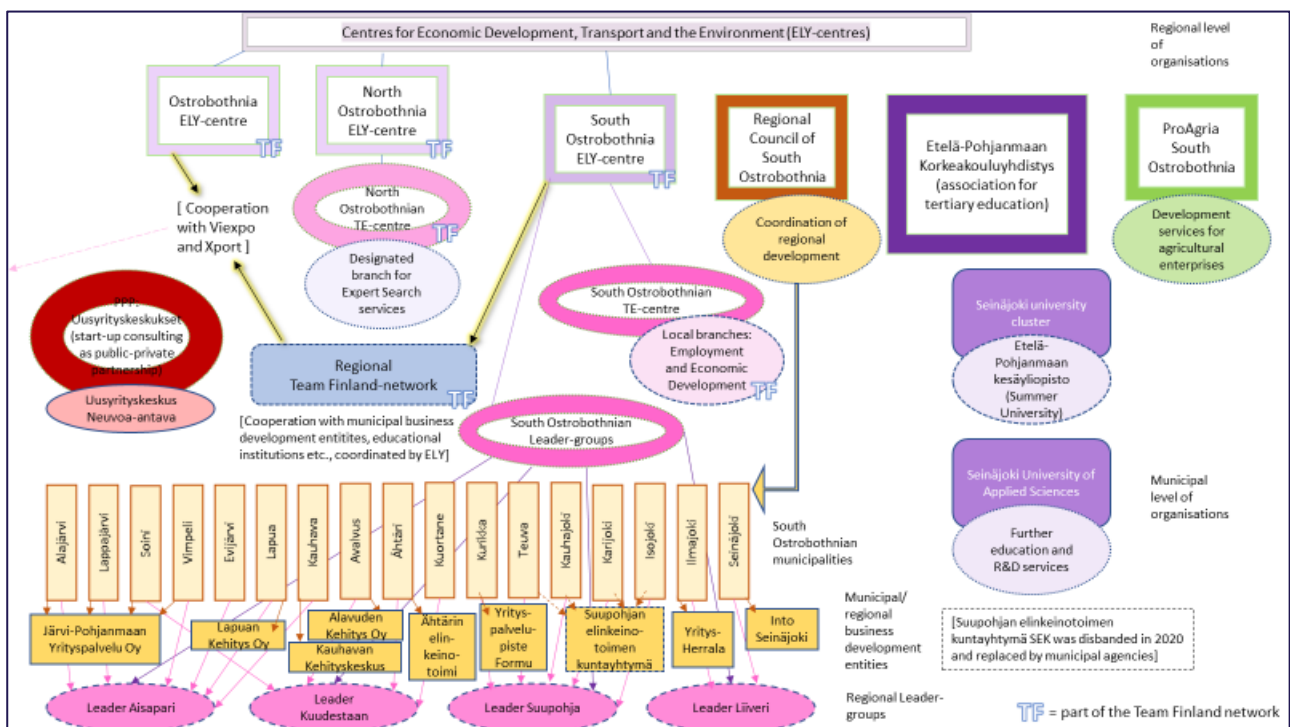
Figure 7. The who's who of internationalisation: local government level.

Additionally, the major private sector organisations such as the Confederation of Finnish Industries and Federation of Finnish Enterprises work with the governmental TF entities to increase the capabilities of their member organisations and help them grow their business domestically and internationally (Figure 8).

The Federation of Finnish Enterprises has a SO regional chapter, as well as smaller, local chapters in various municipalities. Some work is done to increase the board professionalism in small businesses through the organisations and their partner association, Pohjanmaan Hallituspartnerit Ry.

The Chambers of Commerce, under The Finland Chamber of Commerce, link to the Finncham team under Team Finland, but also assist businesses locally through the South Ostrobothnia Chamber of Commerce with export development, documentation, mentoring and consultancies.
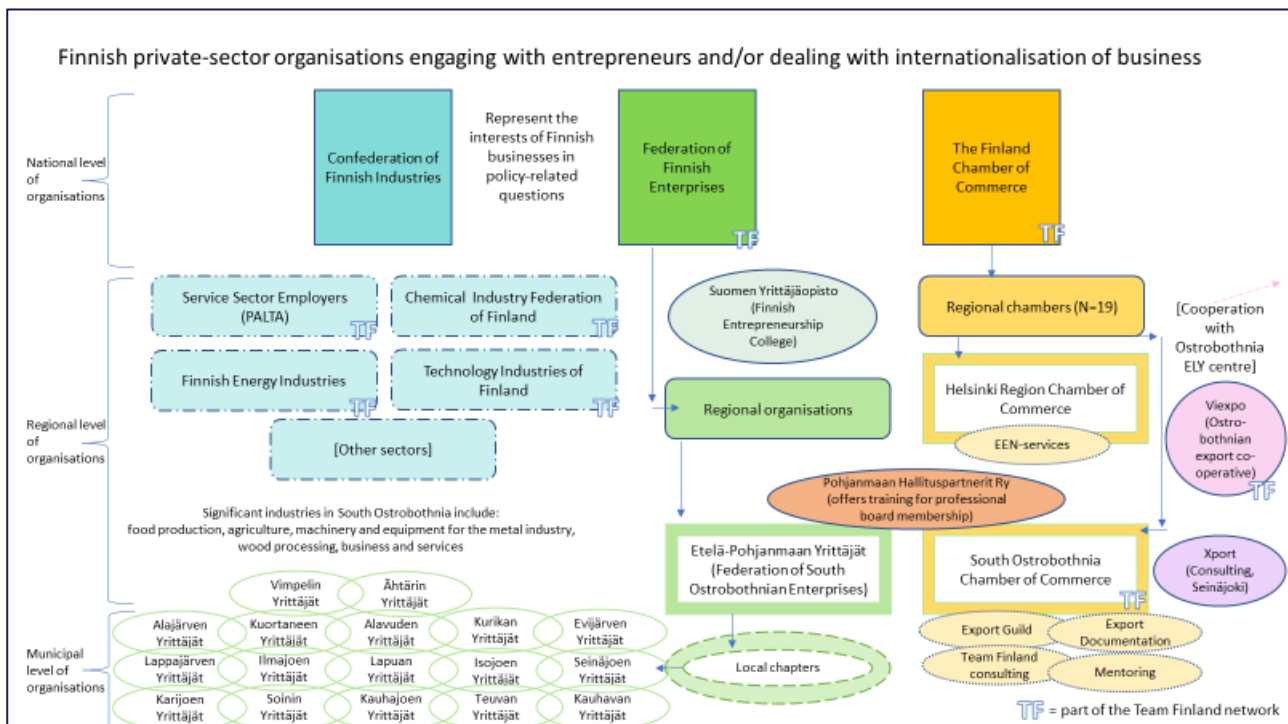
Figure 8. The who's who in internationalisation: private sector entities.

When it comes to service utilisation, it is worth noting that 90% of the SO businesses included in the 2020 autumn edition of the local SME survey reported that they had not used any internationalisation services available to them (The Federation of Finnish Enterprises 2020b, 13). Only 8% of the respondents had used BF funding services, and it was not clear from the data whether that aid included any of the business relief funding that had been distributed by

BF in the first wave of the pandemic for capability development. A further 5% had used Finnvera's services, and 2% of the respondents had utilised internationalisation services offered by BF.

The question about service use was included in the 2020 edition of the SME survey, taking stock of the situation in the country and the influence of the Covid-19 pandemic on business activities. It was of interest that although there would seem to be a sprawling network of business development, growth and internationalisation services in existence and with funding available, the take-up is still low. Why is that?

3.6   Why is it worth finding out more about entrepreneurs and internationalisation?

The starting point for the empirical part is that small business internationalisation exhibits characteristics of a wicked problem and can be thought to be an emergent outcome from the current complex system. The internationalisation issue has been on the regional agenda from 2009, yet various interventions have consistently yielded limited results (Regional Council of South Ostrobothnia 2014a; 2014b; 2019b; 2020). With a wicked problem that sort of outcome can be expected.

Studying complex adaptive systems and trying to address wicked problems seems to be a rather thankless task: "no matter how fine-grained we make our model [state space]… there will always be more target system states than there are model states" (Bishop 2011, 117), i.e. it is not possible to create models that would be able to correctly predict every outcome. The best one can hope for is gradual, piecemeal improvement of one's model and – with some luck – the desired kind of system change through different interventions. If one can expect the outcome of a project to be flawed from the start, why bother?

In the systems context even piecemeal improvement can have bigger repercussions down the line due to sensitive dependence, and therefore small improvements to the current system can be considered worth pursuing. The Export and International Growth Programme of Ministry of Economic Affairs and Employment (2020) mentioned the complexity of different customer pathways currently in existence as something that ought to be investigated, and therefore design thinking tools such as Empathy Mapping might prove useful in getting more data on the status quo. As few entrepreneur-centric studies of the experience from different

internationalisation services have been reported, the study here aims to generate insights from the data for the discussion.

Additionally, the Covid-19 pandemic has complicated the picture worldwide as plans, predictions and forecasts have been drawn up, quickly revised, or abandoned altogether. Business services, travel and logistics continue to experience challenges. Peculiar hoarding behaviours have been observed, causing spikes in demand. Social distancing and lockdowns have been pushing people and businesses to accelerate digitalisation and embrace remote working, which all affect consumer behaviours as well as business cashflows and the employment situation of many entrepreneurs (for more, see for example Bartik et al. 2020; Seetharaman 2020; Sheth 2020).

Considering the mounting cost of the pandemic to the economy, it would seem to make sense to study the local system as it currently exists, focus on a manageable number of system facets and see if any low-hanging fruit or new "nudges" could be found to help push the economic development of the region in the desired direction. The process of interviewing different stakeholders is thought to not only be essential for knowledge-building but might also assist in the co-creation of interventions and build resilience in the region in the face of disruption, Red Queen dynamics and (arguably) Black Swan events.

4   METHOD

The study incorporates four complementary research methods to explore the research questions detailed in the introduction. Fuzzy Cognitive Mapping is used to acquire representations of small business internationalisation in its local context, and the open-ended questions and the export barriers survey look to enrich the data collected in the cognitive map. An empathy map aims to represent the subjective, affective experience of entrepreneurs looking for information about internationalisation and interacting with different systems. As an exploratory study the work does not aim to explain or predict different phenomena, but rather to describe them in different terms. The results will be presented in the subsequent chapter, and the data will be compared to previous studies of internationalisation and SMEs.

4.1   Researching CAS exhibiting wicked problems

It is acknowledged here that the complex systems approach or the FCM method proposed are not without problems, and the inherent philosophical issues as well as limitations of the approach are extensively reviewed for example in Kosko (1986), Özesmi and Özesmi (2001), Fuller and Moran (2001) and Bishop (2011).

Albeit not an unproblematic approach, it was considered that the framework would able to integrate different theoretical considerations, handle complexity to a useful extent and could form a basis for the exploratory, qualitative research here. Mills, Bonner and Francis (2006, 2; cited in Levers 2013, 3) have noted that "…To ensure a strong research design, researchers must choose a research paradigm that is congruent with their beliefs about the nature of reality", and neither a strictly positivist orientation nor a social constructivist approach used by for example Söderman (2014) seemed like a comfortable fit when planning the research and dealing with the subject matter of systems and cognitions. In the absence of technology for examining the formation of cognitions in situ (i.e. the brain), more descriptive methods based on self-report will have to suffice. It could be argued that one could conduct the same study using a constructivist grounded theory approach, but the denial of objective reality as part of the paradigm is considered a bridge too far here.

Özesmi and Özesmi have noted (2004, 59–62) that cognitive maps are snapshots only, time-sensitive and heavily affected by sensitive dependence; they cannot handle transient behaviours, and a small change to the network they describe can change the functioning of the

system altogether. Furthermore, any biases or ignorance that the participants might have get encoded into the maps, while combined maps may exhibit emergent properties and no inferential statistics can be comfortably extracted. The research takes this into account and incorporates other methods into the design to improve the credibility, evaluability, and dependability of the results as well as an audit trail. A translated version of the protocol used, and the audit trail are included in the Appendix (1 and 5).

Fuzzy Cognitive Mapping

The FCM method was selected as it can be used to model perceptions and fuzzy ideas of how things work, it can comfortably accommodate both local-level and expert knowledge, and it gives qualitative results with some speed, although no quantitative predictions can be attempted (Özesmi & Özesmi 2004, 59; Gray, Zanre & Gray 2014). Finding step-by-step instructions for data collection with FCM proved more time-consuming than initially expected, but one such description was eventually found from Özesmi and Özesmi in an ecological modelling journal.

Mental Modeler software (used with permission from Steven A. Gray; Gray et al. 2013), tabulates an adjacency matrix for the concepts following the process in Özesmi and Özesmi (2004, 50–52; see also Gray et al. 2014). This allows for the analysis and comparison of results between individual maps and different participant groups, as well as for the creation of a social cognitive map from all resulting maps.

The analysis of the maps will include the following aspects (following Özesmi & Özesmi 2004, 52–53; Gray et al. 2014, 37):
  – The number of components, for the conceptual content of the map;
  – The number of connections, to get an idea of the connectivity of the map;
  – C/N score as a gauge for system connectedness, calculated from connections divided by concepts;
  – The density of the map represented by an index of internal connectivity, calculated by comparing the number of connections to the number of all possible connections;
  – Average connections by component;
  – The number of transmitter/driver components, which influence other components, but are not affected by any other component;

- The number of receiver components, which are influenced by others but by themselves have no effect;
- The number of ordinary components, which both influence and are influenced by the other components;
- Complexity of the total cognitive map, calculated as the ratio of receiver components to transmitter components and used as an indicator of complex systems thinking;
- Outdegree and indegree of the components, denoting the type and strength of their connections based on the direction of the arrow (outgoing or incoming);
- Centrality of the components, based on the absolute value of its influence.

The outcome of the analysis will be reported for each stakeholder group, and for all groups in total, and those will be subjected to further analysis (following Özesmi & Özesmi 2004, 52–53):

- Measure of similarity i.e. the proportion of same variables in the map;
- Shared variables (cumulative and average)
- New concepts per participant (cumulative and average)
- Most central variables;
- Creation of a condensed cognitive map through qualitative aggregation of variables

On devising the research design, it was hoped that by interviewing different entities and stakeholders involved in the internationalisation process, a better understanding of the entrepreneurs' mental models, constructs and cognitions as well as some idea of motivations and perceived capabilities could be acquired, corresponding to the lower tiers of the systems model of Fuller and Moran (2001). It, along with the subsequent methods, also aimed to explore more of how the entrepreneurs interact with the local business ecosystem they are embedded in. The responses could also be utilised in the latter stages of research when it comes to creating a problem statement and solution ideas. Additionally, Stylios and Groumpos (2004), Özesmi and Özesmi (2004) and Markose (2005) have demonstrated how computation could be utilised in complex system simulations where appropriate equipment is available for advanced modelling work.

Empathy Mapping

Following further in the footsteps of the local entrepreneurs, empathy mapping is a user-centric qualitative method that aims to create an understanding of the entrepreneur as a support service user, identify needs and aid in decision-making (Buchanan 1992, Gray 2017a, Gibbons

2018, Dam and Siang 2020). Different empathy maps can be aggregated to give a rough overview of how certain people would approach a matter and what they'd say, think, do, or feel along the way. Following the pilot phase, the aggregation approach was deemed most useful as the individual maps seemed rather sparse.

The format of empathy maps varies significantly from the most basic form including what the user sees, does, thinks and feels (Gibbons 2018), to more elaborate models where the research subjects' needs, expectations, influences, pain points and gains are also listed (Gray 2017b, Daniëls et al. 2019; Cairns et al. 2020). While the method has been much used and developed in the practice of user experience research and design, empathy mapping does not seem to have attracted much attention from academic researchers in other fields until very recently (Remondes & Borges 2016, Neubauer et al. 2017, Daniëls et al. 2019, Cairns et al. 2020) although it has been used in the experiential research literature at least since the 1990s (Buchanan 1992).

Open-ended questions

This section was incorporated in the pilot phase of the study as it became apparent that it would be useful to get participants to elaborate on their perceptions of the system in their own words, outside of the FCM methodology framework and the empathy map. It seemed possible that both the somewhat "robotic", repetitive process of eliciting and evaluating concepts on the FCM, and the time pressure during the interview kept the FCM and empathy map responses rather curt. To alleviate the problem, it was thought that allowing the participants to have a proper break before responding to the open-ended questions in their own time would give them a better opportunity to reflect on their experiences. Furthermore, expert input from the end-users of the support system as well as its other stakeholders would support the endeavour of creating diverse suggestions for improvement. The questions were formulated based on the pre-understanding of the subject gained during literature search and support ecosystem mapping and aimed to be as neutral as possible except where the elicitation of an emotional response was a specific goal. As the question (final question on the entrepreneur form asking participants to comment on a statement) differed little from the others regarding the level of emotion expected, no separate research ethics review was conducted.

The questions for the entrepreneurs included motivators and inhibitors for internationalisation, where they would first seek help and why, as well as their familiarity with the support network,

type of help needed and ease of accessing it, what sort of information they would like to see more of and how they would develop the services for entrepreneurs. The potentially more affect-inducing questions about the general atmosphere in the region as well as their response to a statement about insufficient internationalisation were included last.

The entrepreneurs' questions differed in some regards from those addressed to the group consisting of regional business development experts, later referred to as 'stakeholders' based on their organisations' interest in increased internationalisation of SMEs. The latter group's questions explored the role of their organisation and cooperation with other stakeholders to get an idea of how the ecosystem (mapped out earlier) works in practice. Other organisation-specific questions included typical queries, the service path of clients, homework required and the development of activities. Questions overlapping with entrepreneurs' questions were contributors to and inhibitors of successful overseas expansion and the resources needed to succeed, both current and hypothetical.

For the analysis of the results, the entrepreneur responses would be compared to stakeholder responses where their topics overlap. Additionally, should the information from the entrepreneurs overlap with the aspects investigated in the empathy map (thinking, feeling, doing, seeing/saying, etc.), the responses could be used to supplement that section. The information received from the participants would also be reflected on in relation to the business ecosystem map drawn earlier to see how the system would appear to work.

Surveying barriers to exports

The items in the online survey developed for the study here are based on earlier studies by Shaw and Darroch (2004), Crick (2007) as well as Camra-Fierro and colleagues (2012), which all included different lists of hypothetical export barriers. In its current format it is not expected to have statistical power to speak of due to the planned sample size being so small, but it is thought to make a simple, no-fuss tool template for any other entities wishing to look at Finnish export barriers with a bigger sample.

With exports being the most common method of foreign market entry based on past SME surveys (The Federation of Finnish Enterprises 2017a – 2021a), getting a rough idea of the local pain points might identify areas where quick wins could be gained, or where further study

would be warranted. The national SME survey does address general pain points of the entrepreneurs but doesn't normally go very deep into export barriers themselves.

The survey will use a 5-point Likert scale, with ratings valued from zero to four. Significance here does not refer to statistical significance, but to the perceived influence of the item. The ordinal scale was construed as follows:

- Rating: 0 = I can't say / no experience
- Rating: 1 = Not significant
- Rating: 2 = Somewhat significant
- Rating: 3 = Very significant
- Rating: 4 = Extremely significant

This sort of scoring was deemed to keep the analysis of the results simple, as the influence of an individual barrier would be calculated as a cumulative total of all ratings – a low total would indicate a low significance as a barrier, whereas a high total would indicate high significance. As noted, this does not equal to statistical significance. Extensive statistical analysis was omitted due to the small sample size (non-parametric testing was not considered to add value due to low expected power) and the survey is simply used as a qualitative blunt instrument for gauging the consensus on what things are seen as the main problems in the area. The result cannot be said to be representative of all entrepreneurs and business development experts in the area, rather it acts as a basis for further study.

4.2   Research protocol used

The interview process was drafted in the spring of 2020, with the process resuming in 2020 autumn. The questionnaires were piloted with a local entrepreneur in an in-person interview and the feedback used to adjust the questionnaires and the interview protocol. However, due to the worsening Covid-19 situation in the autumn of 2020 as well as the subsequent work-from-home (WFH) recommendation it became necessary to move to a plan B and implement a remote protocol for interviews.

The toolset available was not entirely optimal (a laptop with a small screen) and a decision was made to not try to draw the maps on a computer screen during the interview. Instead, the researcher used paper to allow the conversation to flow without a fear of technical issues, with the maps later transcribed with Mental Modeler software. The difficulty with this was that as the

participants did not see what was on the paper, the maps tended to become quite elaborate when it came to the number of concepts, but the connections between the concepts were sparser and, in some cases, due to lack of time (with the duration of the interview reaching a 90-minute mark) not all the concepts were connected. This is discussed further in the Limitations section under Conclusions, and in the quality review in Appendix 4.

To limit the influence of the context on the interview, the overarching aim of the remote protocol was to allow the collection of information but keep the process as convenient and technically simple for the participants as possible.

- An easy-to-use, privacy-friendly online meeting web application, Whereby, was selected as the platform for the remote interviews as there was no cost or time limit on meetings and no account registration was necessary.
- The instructions for the interview as well as the questionnaire materials were transferred to Google Forms so that they could be easily shared with the participants and participants would not have to worry about saving documents and emailing them back [See Appendix 1].
- A designated Google account was created for managing anonymous electronic research materials and kept separate from the researcher's personal and university accounts.

Remote interviews were scheduled with the participants, and the Whereby meeting link including the instructions for joining the interview were emailed to participants ahead of the time. In the case of two participants from the stakeholder group, technical difficulties lead to the interview being conducted on Microsoft Teams instead.

Interview process

At the start of the interview the interviewer went through the process of the interview. The duration was capped at 120 minutes – of this the fuzzy cognitive mapping section took 45–90 minutes, depending on the participant.

In summary, the process for the map-creation was run as follows:
1. To familiarise the participant with cognitive maps, the interviewer would start by demonstrating the process with an unrelated model sample and highlighting the key points of the procedure. Permission would be sought from the participants verbally

for making a recording of the first section to ensure that concepts would not be missed from the maps. These recordings were later destroyed for privacy reasons, as their processing including storage is regulated by GDPR.

2. The interviewer would then start exploring the topic under investigation with the participant using open-ended questions that yield material for the cognitive map. The opening question is to follow the example in Özesmi & Özesmi (2004, 47–48): "As a warm-up, when I mention '[theme under investigation]', what things come to your mind?" The phrasing used as the theme will be "internationalisation of South Ostrobothnian SMEs" and the scope would be explicitly limited to exclude inward internationalisation.

3. The items mentioned by the participant would be listed to a large piece of paper (A3) by the interviewer. The initial part of the interview aims to generate a list of the most important things related to the theme, and get the process moving.

4. Once the participant would have listed the concepts that they could immediately think of the interviewer would explain to them that next they would like to look at how the different things might connect to each other. For context, the interviewer would first run through a table containing pre-set verbal and numerical values for the weight and direction of an FCM relationship and leave it visible on the shared screen for the participant to be able to reference it throughout. The influence of one item to another was assumed to be either negative (denoted with -) or positive (+), with total influence ranging from -1 to +1. To keep the scale and the increments of the influence uniform across the interviews, the participant would be asked to assign the influence value using a scale from 25% to 100% (or 0.25 to 1); if there was no influence from one item to another, there would be no connecting line between them.

5. As the participants would have no direct visual of the developing map due to the remote format, the interviewer would have to run through it concept by concept. The phrasing used would be "When you think about [concept], can you see it having influence on some other things? Does it increase or decrease something else?". The direction of any relationship would be denoted by an arrow on the map and the strength of the relationship with a numerical value based on the assessment by the participant. This would be continued until all concepts had been discussed.

Originally the protocol contained a break between the FCM and the subsequent sections, but another approach evolved early on: participants preferred to skip the break, run through the

electronic questionnaire with the interviewer while present in the online meeting "room", and then end the meeting and fill out the remaining parts in their own time. As this was deemed to increase the comfort of the participants and filling out the questionnaires on camera was not considered to add value to the responses, participants were offered this alternative. However, the downside of this was that in some cases no responses were received afterwards; as participation was voluntary, chasing up responses repeatedly was deemed unproductive.

There were two versions of the protocol: an entrepreneur version and a 'stakeholder' version. The cognitive mapping section was the same for all participants. The entrepreneur version of the protocol contained an additional empathy mapping section, and the subsequent open-ended questions differed by group (entrepreneurs/stakeholders). The final section with a Likert scale numbering task was the same for all participants.

4.3 Sampling and participant characteristics

For arranging the interviews, the Chief Executive Officers (CEO) of 12 SO SMEs were invited to take part in November 2020. Of these 6 accepted and following one cancellation a total of 5 entrepreneur interviews were held between November 2020 and January 2021. The sample was a convenience sample. Instead of selecting any SME enterprise at random, a deliberate decision was made to focus on businesses which, based on publicly available information, were entrepreneur-led and not against doing business overseas. The third shortlisting criterion was that the company would need to fit into the EU SME category, including microenterprises due to their local significance.

The candidates were shortlisted using a combination of sources: Kauppalehti Menestyjät listings (and from there the listings of growing SO enterprises using filtering; Kauppalehti a), the Knowhow from Seinäjoki Region directory (a brochure showcasing local businesses open to exploring foreign markets; Into Seinäjoki 2020) and local news articles highlighting local small enterprises (articles not named here to maintain the anonymity of the respondents). For screening purposes, the most recent financial and staffing details were cross-checked from public sources (Kauppalehti b). The company history was also researched during the shortlisting process from other media and company websites, as the aim was to identify entrepreneur-led companies.

In the final sample most companies were family businesses and in all but one case – where the CEO was the founder of the business – the company had undergone at least one generational change. The businesses included in the dataset were therefore relatively well-established and belonged mostly to the small business category within the broader SME group (see Table 8).

Table 8. Key characteristics of the participants in the entrepreneur group.

Participant ID	E1	E2	E3	E4	E5
Sex	Female	Female	Male	Female	Male
Participant age	40+	20+	30+	50+	50+
SME sub-category	Small	Micro	Micro	Micro	Small
Turnover (2019)	€2.3M	€0.5M	€0.8M	€0.4	€2.9M
Years of experience in current business	5–9 years	<5 years	10–15 years	<5 years	25–30 years
Company board has external members	Yes	No	No	Yes	Yes
Employee count	<50	<10	<10	<10	<50
Location	Rural	Rural	Urban	Urban	Rural
Sells online	No	Yes	No	Yes	Yes
Industry	Manu-facturing	Manu-facturing	Manu-facturing	Wholesale and retail	Manu-facturing

Interview invites were also sent to various SO 'stakeholder' organisations. This group was mostly linked to the training and coaching; mentoring and support systems; and funding sections of the ecosystem participant map in Sorama et al. (2018, 32). The shortlisted organisations were identified during the background research stage where the intention was to map out the local "internationalisation ecosystem" of the region, i.e. identify which organisations currently did B2B-type of work related to internationalisation or could be expected to show interest in the research based on their mandate where the entity was part of

the public sector. In this sense some links also existed to stakeholder salience system described in Mitchell, Agle and Wood (1997, 874).

The 'stakeholder' group included private, municipal, (sub-)regional and national business and export development organisations from different parts of SO. They might be able to influence the company and its outcomes significantly, but they generally do require the company representatives to contact them first. Originally representatives from 16 different organisations were invited, and of these 12 accepted the invite and took part in the interview (see Table 9).

Table 9. Organisational context of the participants in the stakeholder group.

Stakeholder type	Private organisation	Municipal organisation	Sub-regional organisation	Regional organisation
Definition	B2B not directly linked to a local municipality, sub-region or national entity	Focusing on businesses within a specific municipality	Focusing on businesses within a specific sub-regional unit	A South Ostrobothnian branch of a national organisation or a regional entity
Participant IDs	S3	S5, S6, S7	S4, S8, S9	S1, S2, S10, S11, S12
No. of participants	1	3	3	5

The two participant groups naturally approach internationalisation from different viewpoints – an entrepreneur has a business to run, while the stakeholders aim to assist entrepreneurs succeed in their endeavour. However, whereas one could expect the first-person view of a single entrepreneur to be influenced heavily by their own business and the industry in which it operates, the stakeholder organisations tend to interact with multiple different businesses from various industries and might thus be able to offer a third-person view to supplement the total picture.

Similarly, it was deemed important to recruit participants from both rural and urban areas to get a full understanding of the issues in the region, hear a multitude of viewpoints and to reduce any potential Seinäjoki-centricity of the research as many of the regional branches of national organisations were located in the capital city of the region while many of the entrepreneurs they served resided elsewhere in the province.

5 RESULTS

The results from the 5 entrepreneur interviews and 12 stakeholder interviews are reported starting from the fuzzy cognitive maps, followed by entrepreneur empathy maps, a summary of the open question responses and the export barriers survey results. The results will also be compared against each other to assess the level of agreement or potential convergence contained therein. The subsequent Discussion section will contain a further summary of the findings and compare these to previous findings.

5.1 Fuzzy cognitive maps

A total of 17 maps was included in the analysis. The maps were split into groups and transcribed with Mental Modeler, which also gave the key values from the tabulated information. The average key values of all maps in their unprocessed form are reported below, by group (Tables 10, 12 and 14).

During the interview colour coding was employed to highlight the most salient concepts, and the researcher summarised the overall interpretation of the map at the end of the section based on the most connected concepts plus the most significant routes of influence. The participants did appear to agree with these summaries and did not protest the interpretations made from their descriptions. Where the participants were shown the maps created (this was done in the first few instances), no extra input was received and this practice was omitted as it relied on taking a digital photograph of the map, e-mailing it to the participant and waiting for comments during the allotted interview time. The image quality of the video meeting web camera was too low to show any meaningful detail from the map, and thus a more laborious method had to be developed.

The idea of the resulting maps had been demonstrated to the participants as a part of the protocol using simple examples in the beginning, but the appearance of the final maps did not seem to say much to the participants, possibly due to their complexity as even an A3 sheet did not seem to be enough in some cases. This phenomenon was observed already during the pilot and may have contributed to an oversight in the design, as it created an assumption that agreement was automatic, and no time was allocated to the confirmation of overall interpretations from various methods later down the line. This issue is discussed in depth in Discussion – Limitations and the quality assessment in the Appendix.

Entrepreneur group

The average sum of concepts in the entrepreneur group maps (Table 10) is influenced by one participant who had a relatively elaborate, complex map compared to other maps; compared to its peers it was more like stakeholder maps, both based on its metrics as well as the content.

Table 10. Key metrics from entrepreneur maps, non-condensed data.

Matrix metrics	E1	E2	E3	E4	E5	E-Average
Σ Components (C)	22	26	24	42	28	**28.4**
Σ Connections (N)	26	41	42	72	38	**43.8**
Density	0.06	0.06	0.08	0.04	0.05	**0.06**
C/N	1.18	1.58	1.75	1.71	1.36	**1.52**
Σ Driver components	19	7	11	11	9	**11.4**
Σ Receiver components	4	3	3	8	4	**4.4**
Σ Ordinary components	8	16	10	15	14	**12.6**
Complexity score	0.44	0.43	0.27	0.73	0.44	**0.46**
Highest indegree	1.75	5.50	4.50	4.75	2.50	
Component	Sales beyond EU	Increasing recognition	Costs	Inter-nationalisation	Sales; Business Finland services	
Highest outdegree	2.75	3.75	1.75	3.25	2.50	
Component	Personality	Inter-nationalisation trainings	Market research; Staff	Strategic management	Growth-orientation	
Top centrality: 1st	2.75	6.50	5.00	6.50	4.25	
Component	Payments, insurance (problems); Sales beyond EU; Personality	Increasing recognition	Workload	Lead generation	Contacts abroad	

Concepts with a high indegree would be those which had a lot of incoming arrows denoting influence, while concepts with a high outdegree would be those which had numerous outgoing arrows. The concepts with high centrality figures were of particular interest, as they stand out with their multitude of connections within the maps. Two of the maps had concepts indicating problems (problems acquiring payment and insurance arrangements; workload) as concepts with highest centrality, while three other maps had more neutral concepts score the highest centrality figure.

Before the aggregation of maps, concepts which had been mentioned but for which no influence value had been assigned were excluded from the analysis. The sum of concepts in the combined maps was therefore slightly lower than the sum of concepts from raw, individual exports from Mental Modeler, as the programme allowed the inclusion of unconnected concepts and tentative connections but assigned a zero value for them.

The maps were aggregated in the matrix format by selecting the map with the highest number of concepts and connections as a starting point (see Discussion regarding this choice). Subsequent matrices were processed one by one as illustrated in Table 11 – shared and new concepts were first highlighted. Where maps shared the same concept, the reported values for influence were averaged to eliminate the occurrence of values not between 1 and -1. If the map had a new concept that previous participants had not mentioned, a new column was added for it, and the values recorded to the combined matrix.

Table 11. Shared and new concepts by participant, entrepreneur group.

Participant	E5	E2	E1	E3	E4	Average
Same concepts	-	5	5	8	13	6
New concepts	28	21	17	16	29	22
Total concepts	28	26	22	24	42	28

A mistake was made in the process of aggregation when it came to keeping track of the individual shared concepts in relation to total concepts beyond their number in individual maps, and therefore the exact proportion of same/new concepts could not be calculated. This also influenced the determination of most mentioned concept. As a fix to the problem the role of centrality was increased in the analysis.

Stakeholder group

The amount of data contained in the raw stakeholder maps (Table 12) was typically larger, and they contained both more concepts as well as more connections between concepts, which also influenced the metrics calculated from these characteristics. This was determined both at the point where only 5 stakeholder maps had been assessed – to correspond with the 5 entrepreneur maps – and at the overall level, with all stakeholder maps considered. The stakeholders, who all worked for business development organisations either on the public or private sector, tended to highlight competitiveness, strategy, and product development in their maps (seen on indegree, outdegree and centrality figures). The following concepts also gained high centrality figures: customer understanding, enterprise groups, business growth, sales and willingness to internationalise.

Table 12. Key metrics of stakeholder maps (entities servicing entrepreneurs).

Matrix metrics	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S-Avg
Σ Components (C)	44	56	43	24	32	67	30	43	25	30	29	24	39
Σ Connections (N)	58	82	66	36	47	86	58	83	43	52	45	44	61
Density	0.03	0.03	0.04	0.07	0.04	0.02	0.07	0.05	0.07	0.06	0.06	0.08	0.05
C/N	1.32	1.46	1.53	1.5	1.47	1.28	1.93	1.93	1.72	1.73	1.55	1.83	1.59
Σ driver components	13	16	12	10	9	7	4	13	6	8	6	5	10
Σ receiver components	9	15	7	2	9	8	3	5	3	2	4	5	6
Σ ordinary components	18	16	17	10	12	3	22	22	16	19	10	14	16
Complexity	0.69	0.94	0.58	0.2	1	1.14	0.75	0.38	0.5	0.25	0.67	1	0.64
Highest indegree	6.75	2.75	6.75	5.0	4.25	2	6	6.75	3.25	3.75	4.5	3.25	4.58
Component	Competitive product/ service	Sales; Competitiveness	Business growth	Owner's strategy	Market info about target, market opportunities	Competitiveness	Sales	Own development work	Intl competencies; Entrepreneur's strategic vision	Development work	Product development	Inter-nationalisation is hard	
Highest outdegree	3.0	2.75	3.75	3.0	4.5	2	4.75	2.5	3.75	2.75	3	2.25	2.92
Component	Competitive product/ service	Cultural differences, style	Developing business competencies	Motivated personnel	Enterprise groups, consortia	Business age, history	Attitude	Motivation	Commitment from entrepreneur	Functioning company board	Funding (availability)	Low financial resources	
Top centrality: 1st	9.75	4.75	6.75	7.25	4.5	4	7.5	7.5	6.25	5.25	6.75	4.5	6.24
Component	Competitive product	Customer understanding	Business growth	Owner's strategy	Enterprise groups	Competitiveness	Sales	Own development work	Owner's strategic vision	Development work	Product development	Will to inter-nationalise	

The stakeholder maps were processed the same way as the entrepreneur maps were. The number of new and shared concepts was calculated (Table 13). As noted before, the raw maps also included concepts for which some sort of influence had been indicated, but due to lack of time the weightings had not been assigned to all concepts as in some cases the FCM section had to be capped at 90 minutes to allow for time for the rest of the sections. When combining maps, any concept with zero influence recorded would be omitted from the final version, as the number of connected concepts already made the maps very elaborate and expansive.

Table 13. Shared and new concepts by participant, stakeholder group.

Participant	S8	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	Average
Same concepts	-	2	8	20	15	17	35	27	16	24	20	22	19
New concepts	43	40	48	23	9	15	32	4	9	5	9	2	20
Total concepts	43	42	56	43	24	32	67	31	25	31	29	24	37

On average, stakeholder maps included more concepts (Σ Components) and more connections (Σ Connections), which would also show in the density and connections by component figures; this would seem to be independent of the number of stakeholders taking part, as the same phenomenon was observed when only five maps had been processed from both groups. However, no tests of statistical significance were conducted, and the finding could have been the result of chance variability. In the sample collected, the entrepreneur maps had more driver components, i.e. concepts which influenced others but there was no influence on them, as well as receiver components (components that are only influenced by other concepts, but do not themselves influence others) whereas the stakeholder maps had more concepts where the influence went both ways, indicated as ordinary components. The complexity score of stakeholder maps was also somewhat higher overall.

Generating a map representing all participants

In the processed form, the maps lost their unconnected concepts (with zero assigned value) and some of the closely related concepts were combined to reduce the size of the maps to some extent. The protocol used for processing the maps can be found from Appendix 2. The matrices resulting from the combination of all entrepreneur and stakeholder maps, as well as a matrix created from the previous two matrices, were re-uploaded to Mental Modeler for analysis and visualisation. A summary of the results is reported in Table 14. The indegree, outdegree and centrality are absolute figures of all influences working on the top concepts, including both negative (reducing) and positive (increasing) influences.

As an expectation based on Özesmi and Özesmi's work (2004), a plateau was expected at about 300 concepts, after which the number of concepts could not be expected to increase significantly, and saturation could be assumed. This pattern was broadly confirmed during the analysis, as the number of new concepts per map tended to taper off towards the end of the sample in both groups, and before data cleaning and condensing the total number of concepts mentioned by all participants was just below 300 at 293. In the entrepreneur group, due to its eventually small size, the number of concepts reached just over 100 – the proactive inclusion of stakeholders in the total sample was deemed advantageous for reaching saturation. The proportion of shared concepts between groups was 48.5% (out of 101 concepts, the entrepreneurs had 52 novel concepts added to the combined matrix, in addition to the influence values of 49 shared concepts). Although in the final combined matrix the number of concepts was 235, the stakeholders came to dominate the content of the combined map to an extent.

Table 14. Top metrics from the combined maps.

Matrix metrics	Entrepreneurs, combined		Stakeholders, combined		All participants	
Σ Components (C)	101		185		235	
Σ Connections (N)	180		509		675	
Density	0.02 (0.018)		0.02 (0.015)		0.01 (0.012)	
C/N	1.78		2.75		2.87	
Σ Driver components	35		51		70	
Σ Receiver components	13		21		20	
Σ Ordinary components	53		113		145	
Complexity	0.37		0.41		0.29	
Top indegree						
#1	Workload	9.25	Sales	11.75	Sales	18.25
#2	Costs	8.00	Product dev	10.50	Workload	11.57
#3	Sales	7.50	Total capabilities	9.75	Costs	11.25
Top outdegree						
#1	Expo & trade show participation	6.25	Will to inter-nationalise	9	Market research	9.88
#2	Clear intl strategy	4.00	Financial resources	7.50	Good partner network	9.25
#3	Market research	4.00	Strategic vision of owner	7	Will to inter-nationalise	9.13
Top centrality						
#1	Workload	12	Product dev	16.63	Market research	19.88
#2	Increasing recognition	9.60	Total capabilities	15.25	Good partner network	19.01
#3	Costs	8.00	Will to inter-nationalise	15.13	Sales	18.25

Visualising the combined maps proved difficult. When a combined entrepreneur map was computer-generated from the matrix data, one could gain an idea that already the number of

total components had increased significantly. Due to its size the map also became somewhat hard to read, and it has been included in A3 size in Appendix 6. A similar issue was noted with the combined stakeholder map, with an even greater number of concepts making it hard to process in the matrix format, and the problem was aggravated in the map format. As above, the map has been included in Appendix 6 in A3 size.

A combined map was generated for all participants by uploading the matrix data to Mental Modeler, but spatial re-positioning of concepts in the auto-generated map for better legibility had to be abandoned as the online application crashed repeatedly. An unedited version of the map is included in the Appendix 6 in A2 size. The issue vividly illustrated in concrete terms points 7 and 8 of complex systems characteristics, namely that elaborate models indeed were difficult to process, and that simplification of the model would introduce uncertainty into the representation, which would also grow further over time. They also increased the file size of the final report despite substantial compressing of images.

The following things could be interpreted from the key metrics of the maps:
- The combined stakeholder map was almost twice as large as the entrepreneur map, contained almost 300% more connections, and twice as many ordinary components which were both influencing others *and* influenced by yet others at the same time. The C/N score and the overall complexity rating were also higher. Then again, the stakeholder group was also much bigger, with a higher diversity of opinions.
- For entrepreneurs, based on their centrality figures, the main issues with SME internationalisation in SO were workload, the need to increase recognition, and costs. For stakeholders, the central issues were product development, total capabilities, and willingness to internationalise. All combined, the top issues were the need for extensive market research, a good partner network and sales.
- The indegree figures highlighted concepts which were influenced by many different things. In the entrepreneur group the top concepts were workload, costs, and sales. In the stakeholder group the top "it depends on so many things" items were sales, product development and total capabilities.
- The concepts with top outdegree and thus most influence on other concepts, were expo and trade show participation, clear internalisation strategy and market research in the entrepreneur group; willingness to internationalise, financial resources and the owner's strategic vision in the stakeholder group, and market research, partnership networks and the will to internationalise at the overall level.

The issue of poor map legibility was bothersome but also hard to solve in a practical manner. Application of the Pareto principle to the combined map to create a smaller map by only incorporating the top 20% of the most central concepts was considered, but this was also abandoned after a brief attempt. Firstly, there was no guarantee that the top concepts would explain 80% of the issue in a complex system (see also Chen, Chong and Tong 1994), and selective inclusion of concepts from the highly interlinked matrix meant that the resulting map would not resemble the original to any meaningful extent. Qualitatively, the voice of the entrepreneurs appeared to "drown" in the concepts originating from stakeholder maps as their order and influence changed noticeably once the smaller tributaries to the key concepts were excluded. Out of top 20 central concepts included, 11 were only from stakeholder maps, 5 shared in both maps, and 4 only seen in entrepreneur maps, the four key entrepreneur concepts being the workload of the entrepreneur, costs, growth, and internationalisation.

Grouping of concepts and their interpretation

To make the dataset more manageable and tease out higher-level themes from the aggregated data, concepts in the matrices were categorised. To an extent simplification using categorisation goes against the spirit of dealing with complex systems but interacting with the system might also help one understand it.

In the process used the concepts were divided into groups based on what was deemed the simplest way to describe or try to understand the function of the concept. The resulting categories included: resources, capabilities, positive attitudes, boosters, negative attitudes, blockers, drivers of activity, neutral properties of the (sub)system, outcomes, and activities. Here the term 'blocker' is not an entirely accurate descriptor of the concepts in that category, as very few of them block progress altogether. Rather, they largely slow down progress and another way to think about them could be "spanners in the works" – their individual effect can be thought to be manageable, and the blocker effect cumulative. Bottleneck might be another way to think about it.

For example, small business size, costs, risks, fragmentation of support network, competition, cultural differences or workload (all concepts mentioned in the interviews), do not stop anyone from pursuing internationalisation as such and the entrepreneurs interviewed appeared to be consummate problem-solvers. However, an accumulation of multiple blockers might slow down progress unless the issues are tackled systematically.

There is a high degree of subjectivity involved in the grouping of concepts, and an exhaustive categorised list cannot be deemed practical here. A handful of these is presented in Table 15 for the sake of illustration.

Table 15. Conceptual categories proposed based on the FCM concepts.

Resources	Capabilities	Neutral properties	Drivers	Outcomes
Financial Personnel Time [Total resources]	Contractual and regulatory competence Marketing and sales competence Management competence International competence Product development competence	Type of the product Company type Reach of support measures Product features Age of business	Vision of the entrepreneur Chance/luck Societal pressure Need for market research Need for development	Awareness of services Inter-nationalisation Sales Customer understanding Customer acquisition
Positive attitudes	**Negative attitudes**	**Boosters**	**Blockers**	**Activities**
Courage Commitment Receptiveness to cooperation Willingness to grow Growth-orientation	High psychological threshold; fear of internationalisation or uncertainty General negativity Disinclined business culture/atmosphere Illusion of self-sufficiency/omnipotence Low ambition	Access to external finance Peer support, mentoring Good partnership networks Consulting services Subsidies	Workload Costs Difficulties in organising payments and insurance Risks Poor scalability	Market research Customer relationship management Exploiting changing circumstances Creating trust Enhancing efficiency

A very basic description of the interaction between various categories, based on the understanding accumulated during interviews, is presented in Figure 9. Content-wise, for example the concepts in resource, capability and booster categories appear very close to each other but were separated as boosters appeared to "fast-forward" progress that normally would

have taken more time. It might also to be possible to turn any property into a blocker or a booster where it is perceived to have a positive or negative influence on the process, and over time outcomes would seem to turn into drivers, properties or for example boosters and influence activities, motivation or speed of progress. The satisfaction with the outcomes of activities would generally depend on one's expectations.
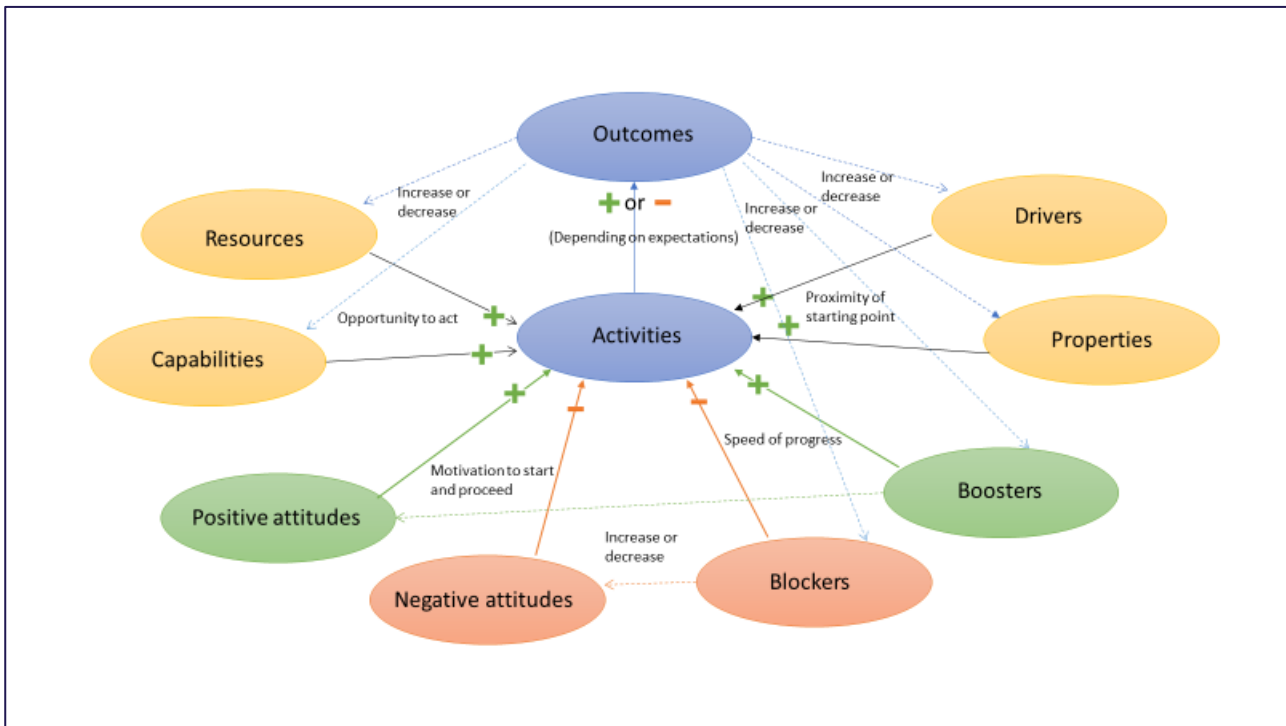
Figure 9. Influence of different sub-categories on outcomes.

On a practical level, the figure could help in identifying and targeting categories and concepts where interventions might be required. While attitudes can be expected to be harder to shape, influencing access to resources, the speed of progress or moving the proximity of the starting point closer might yield quick wins. In this attending to the central concepts raised by participants – with special attention paid to issues reported by entrepreneurs themselves, based on their own experience – could serve as a guide.

As visual assessment of the different maps in their final form was not practical especially as the output did not display the weightings of the connections, focusing on the central concepts ranked by their numerical values was deemed a more workable solution at the overall level. Of interest was also which aspects the entrepreneurs and other parties perceived as most influential (as per their outdegree scores). Here less attention was paid to the high indegree scorers, but their existence ought not to be completely ignored, as these consist of concepts

affected by multiple different things, to a different extent, which is also important to consider where one was to plan potential interventions or nudges.

Comparison of central concepts and their interpretation

To start with, the idea of comparing entrepreneur perceptions to stakeholders' perceptions was to gauge the level of consensus regarding what internationalisation is and to identify potential problem areas as well as priorities. Further assessment of the most salient concepts on the aggregated maps served to highlight similarities and differences between groups, and some of the main items were colour-coded to quickly visualise the differences.

The ratings given to different concepts by the participants were, fundamentally, fuzzy measures of perceived causality. The rating scale of influence used in the research can be seen in Table 16. Each individual concept could, at most, be rated +1 or -1, but the more concepts any one concept influenced or was influenced by, and the stronger the influence, the higher its overall indegree/outdegree/centrality score became, depending on the direction of influence.

Table 16. The scale used for influence ratings on the FCM.

Decreases				X	Increases			
-1	-0.75	-0.50	-0.25	0	+0.25	+0.50	+0.75	+1
Very much, always	Much, usually	Quite a lot, often	Some-what, occasio-nally		Some-what, occasio-nally	Quite a lot, often	Much, usually	Very much, always
-				X	+			

Centrality was the absolute total of all influences (inbound and outbound, positive and negative) linked to a concept. For example, while workload, increasing recognition and costs were highly central concepts on the entrepreneur maps, they did not feature at all in the stakeholder top 10 (Table 17) and were no. 4, 25 and 13 on the combined list, respectively. On the other hand, the entrepreneur top 10 contained no mention of product development or total competences. Sales were highly rated with entrepreneurs and on the combined list yet were at the tail-end of the top 10 for stakeholders. This, with a pinch of salt, could be a hint of a difference in the order of priorities between the entrepreneur and stakeholder groups.

Table 17. Top centrality scores by participant group.

Group	Entrepreneurs	C_e	Stakeholders	C_s	Combined	C_c
#1	Workload (high)	12	Product development	16.63	Extensive market research	19.88
#2	Increasing recognition	9.63	Total know-how & capabilities	15.25	Good partnership network	19.01
#3	Costs	8	Will to internationalise	15.13	Sales	18.25
#4	Sales	7.5	Strategic vision of the owner	14.38	Workload of the entrepreneur	17.20
#5	Market research & analysis	7.5	Competitive own product/service	14.13	Product development	16.63
#6	Lead generation	7	Good partnership network	14	Will to internationalise	15.26
#7	Contacting (outbounding)	7	Willingness to grow	13.63	Total know-how & capabilities	15.25
#8	Contact network	6.5	Competence development	12	Strategic vision of the owner	14.38
#9	Expo/trade show participation	6.5	Credible, concrete long-term planning	11.88	Competitive own product/service	14.13
#10	Visibility in different channels	5.76	Sales	11.75	Willingness to grow	14.01

Comparison of outdegree scores and their interpretation

Based on the outdegree scores (Table 18) there were noticeable differences in how the participants in the different groups thought about the ability of certain concepts' ability to influence other parts of the map. The concepts themselves could have a positive or negative expression in addition to influence, so that small size of the company was here perceived as a negative, while a good partnership network was viewed as a positive. Consequently, a reduction of a negative concept (reduction in small business size, i.e. increase in business size) would yield a different semantic outcome than reduction of a positive concept (a decrease of the good partnership network value would equal it becoming "less good"). For the sake of clarity, certain negative concepts had been marked with a (-) in the maps and in the matrix to ensure that any influence on them was correctly interpreted.

Table 18. Top outdegree scores by participant group.

Group	Entrepreneurs	deg+ v_e	Stakeholders	deg+ v_s	Combined	deg+ v_c
#1	Expo/trade show participation	6.25	Will to internationalise	9	Market research	9.88
#2	Clear inter-nationalisation strategy	4	Financial resources	7.5	Good partnership network	9.25
#3	Market research & analysis	4	Strategic vision of owner	7	Will to internationalise	9
#4	Inter-nationalisation trainings	3.75	Concrete long-term planning	6.88	Concrete long-term planning	8.88
#5	Personality	3.5	Personnel as resource	6.88	Personnel as resource	7.94
#6	Courage	3.25	Willingness to grow	6.75	Financial resources	7.5
#7	Visibility in different channels	3.13	Small size of the company (-)	6.38	Expo/trade show participation	7.13
#8	Lead generation	3	Motivation	6.25	Strategic vision	7
#9	Increasing recognition	2.75	Product development	6.13	Growth orientation	6.88
#10	Targeting of measures	2.75	Good partnership network	6	Motivation	6.5

The assessment of the different pathways from the maps was somewhat problematic (see Appendix 6), as the specific influence ratings were invisible and only the + or – aspect of the connection between concepts was visible. Furthermore, trying to make the different labels legible by shifting them began to twist the structure of the maps which had been generated from the adjacency matrix. The matrix format was a simpler way of looking at the data but too large to be included even in the Appendix section.

To contextualise the main findings in a clearer, manageable way, it was decided that the components of top 3 outdegree values from the combined participant maps would be tabulated to give an idea of some of the main pathways leading to the high values – basically, the process of the map analysis went from the raw data to the aggregated top-level data, and then took a step backwards to look at the connections between top concepts. These could be acquired

from the rows linked to each concept on the matrix and have been presented in Table 19. This also seemed like a good end point for the map analysis.

Table 19. Concepts contributing to the top outdegree figures in the combined map.

Concept	deg+v_c	Linked concepts (influence on them)
Market research →	9.88	business growth (+0.5), workload (+0.75), costs (+0.75), in-house development activities (+0.75), good partnership network, agents etc. (0.63), total resources (-0.25), knowledge of target market (+1.00), service offering of business support entities (+1.00), overall product development (+0.75), lack of information (-0.75), progress with starting exports (+0.50), will to internationalise (+0.50), clear internationalisation strategy (+0.75), exploiting changing cirumstances (+0.25), targeting of measures (+0.75)
Good partner-ship network →	9.25	sales abroad (+0.75), small size of the company (-0.75), marketing work (+0.25), costs (-0.5), competitive own product (+0.50), export (+0.75), competence development (+0.50), know-how & competence: procurement (+0.75), sales (+0.50), market research (+0.75), owner's strategy (+0.50), sparring (+0.50), product/IP protection (+0.25), know-how & competence: regulation & contracts (+0.25), challenges getting on international markets (-1.00), lead prospecting (+0.50)
Will to inter-nationalise (intent) →	9	search for information (+0.75), high psychological threshold to internationalise (-1.00), peer support, mentoring (+0.75), motivation & commitment of entrepreneur (+1.00), internationalisation (+0.63), export (+1.00), "homework" preparation (+0.75), progress with starting exports (+1.00), [committing to] additional investments (+0.75), making use of the market knowledge and language skills of international students (+1.00), appetite for risk (+0.50)

The entire matrix contained the same kind of data for another 232 variables, so invariably the analysis had to be focused on the most salient factors. However, a model for a rough simulation could be constructed from the data for exploring the different relationship pathways, and how a change in one variable would influence others. An adequately powered computer ought to have no trouble with this, but it appeared that a basic laptop started to have trouble with the more complex FCMs, and no simulations could be attempted.

5.2 Empathy map

The map below (Figure 10) was drawn based on the responses received from the entrepreneurs in that section (5), as well as the responses left in the open-ended question section (3) and interviewer's notes made during the recorded interviews where an interesting anecdote had been shared.

USER: South Ostrobothnian SME-entrepreneur; between 30 and 60 years of age, runs a manufacturing business of the micro- or small variety

GOALS: - Wants market research information for finding target markets, resellers and customers and how to reach them
- Wants an answer to a question: incoterms, customs, freight, legal, logistics, regulations, value of orders

THINKS
"It's difficult & challenging to go abroad"
Doing business motivates
"I'll either find or not find the info I need"
"Damnit, where do you start looking?!"
Would like to soundboard
"Have to start calling"... "I don't know where to call"
"I don't know how we'll get ahead with internationalisation"
"Can you trust the information online?"
Know there might be demand (enquiries)
"Is it right to put this much investment into export development?"

FEELS
Stressed (busy)
"The upcoming amount of work creates anxiety before it's acute"
Uncertain
"It's implied that a business that doesn't export is nothing"
"Easy work"
¯_(ツ)_/¯
Frustrated, annoyed (confusing website)
"Internationalisation is overrated"
Excited; driven
Disillusioned (satisfied with the help offered but disappointed with the results/ROI)
Determined; not giving up

DOES
First checks online
Phones TE-centre and finds the international matters coordinator
Will google it
Will google it
Will google it
Tries to find trainings or export projects in nearby areas
Googles:
- Resellers
- Distributors
- Freight
- Regulations
Phones people
May ask mom (family business)
Reaches out to own network - other entrepreneurs - accountant - contact in AmCham

SAYS
"[Entity A] knows nothing, you have to know yourself"
"There's been no such info that I've needed but haven't managed to find yet"
"Those who have to fill out the papers know"
"Is this now definitely correct?"
"[Entity B] people can't find info though they work in the place that created the website"
"Are there other (more secure) ways?
"It would have been more profitable for the company to focus on domestic market"
"Alright, onwards"

PAIN
Would like to focus on sales and contacting; is most motivated by that
Some trouble getting info from certain places; takes time as does finding the right channels
Variety of regulations, some ad-hoc
Delays in business deals/deliveries due to outdated or incorrect information, instructions or paperwork supplied by some entitities
Time lost running around; opportunity cost
"Would need help for general business development, it doesn't feel that it's in as ample supply as help for internationalisation"

GAIN
Got the information they needed to proceed with whatever they were working towards
Doing business motivates, creates excitement and motivation; "typical entrepreneur characteristics"
Gets a "kick" from success
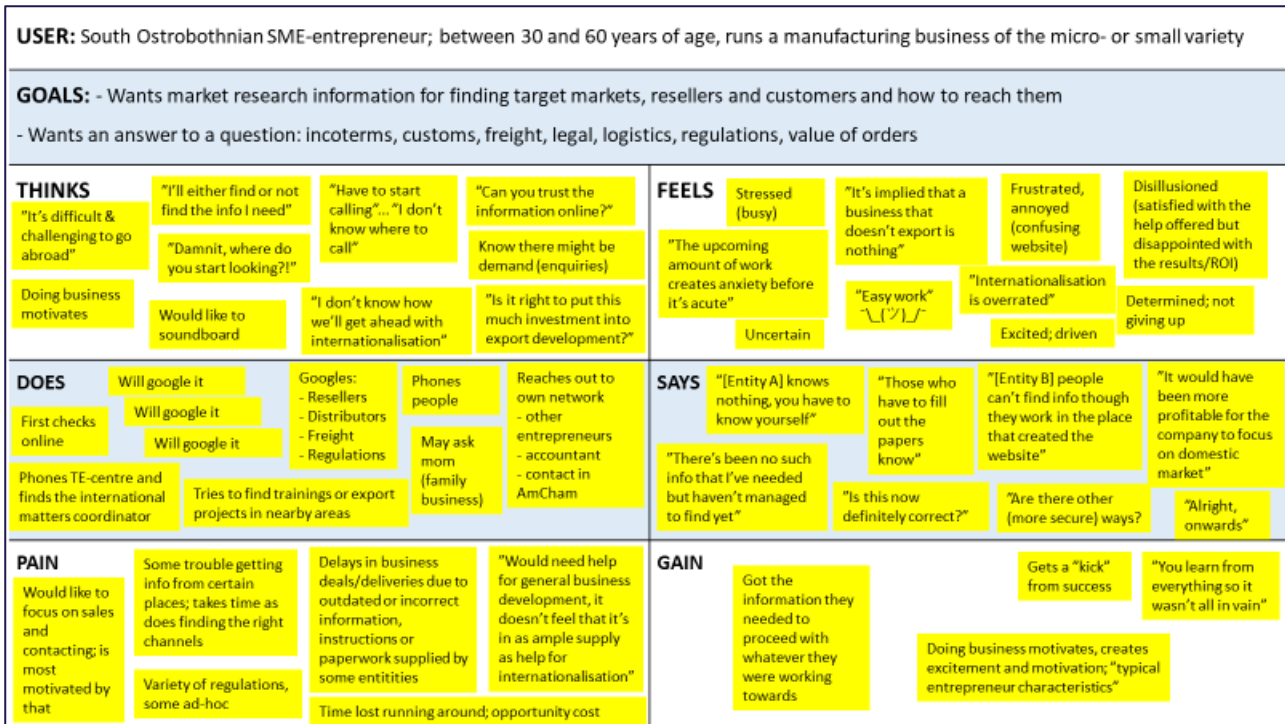"You learn from everything so it wasn't all in vain"

Figure 10. Empathy map from the responses of 5 entrepreneurs.

The responses in this section indicated that driven by the goal of advancing their business, the entrepreneurs were very motivated to find the information even if it was a bit difficult. In all but one cases where the first instinct was to phone someone who knows, Google search was the first place they'd look for the information, and even for many of the Google-users their next step would have been to make a phone call and speak to someone to get the answer. Personal networks offered shortcuts, either for getting the information first-hand, or for getting in touch with someone who would be able to help.

Outdated, inaccurate information annoyed two entrepreneurs who had had trouble finding the right information through the usual channels and entities for closing a deal with a foreign client. One of the entrepreneurs noted that one thing frustrating them was that they would often receive better or worse service or information based on who they were dealing with inside the entity, which made the customer service process feel like a lottery. Also, if they had to choose between receiving no information from a support entity and receiving incorrect or outdated

information, they would prefer the former option. The expectation was that the specialised internationalisation support entities dealing with businesses ought to have accurate, up-to-date information quickly available for entrepreneurs.

The entrepreneur who had been in the business for the longest time had the most relaxed attitude of the participants. For context, the same entrepreneur also appeared to have the largest organisation and frank views on the need for delegation where necessary.

5.3   Summary of open-ended questions

Here the answers to the central questions are reviewed first, after which a more thorough run-though of the responses is offered. This section suffered somewhat from the dearth of responses from actual entrepreneurs. With only three responses to go by, the results hardly give a very diverse view from the entrepreneur group. Similar types of surveys might be useful for eliciting more feedback from an important target user group for business services.

Inhibiting factors

The stakeholder group weighed in extensively on the inhibiting factors (Table 20): it was noted that many businesses focus on subcontracting or operate in low-growth, low-productivity industries which require a relatively low level of education but also translate into small business size, lack of resources and limited competencies for business development.

Table 20. Examples of responses regarding inhibitors of internationalisation.

What things inhibit or reduce motivation to internationalise?	
Entrepreneurs	Stakeholders
High costs	*Attitudes*
Not enough knowledge	*Lack of faith*
No time; workload	*Lack of ambition*
Finding experts that fit the needs of business; need hand-holding and practical help	*Low appetite for growth*
	(Not) Daring to invest in growth
International inexperience	*Low language proficiency, education*
Attitude	*Gaps in awareness regarding opportunities*
	Lack of resources (employees, money, development capabilities

The entrepreneurs included in the study were likely more growth-oriented and with international ambitions than the average SME owners that the stakeholders would normally encounter. Some frustration could be detected in the stakeholder group regarding unwillingness to grow; a local meme was mentioned by at least three different participants, namely that a local SME stopped growing once the entrepreneur had a Mercedes-Benz and the wife had a mink stole.

The lack of systematic planning and the entrepreneur's time often being taken up by operations were frequently seen in the stakeholders' cognitive maps, and they also featured in the open-ended questions. Some participants also elaborated on what they deemed "international business competence", which had shown up in the cognitive maps: language proficiency, management as well as sales and marketing competence, all of which make interacting with foreign customers and staff as well as the running of domestic operations more challenging. Gaps in the knowledge would also put blinkers on the scouting for new business opportunities.

A lack of ambition was commented on by a few respondents, exhibited as a home-bound attitude and an unwillingness to invest in pursuing foreign markets by acquiring the resources for it and getting the product ready for sales by adjusting it slightly for a new audience if need be. Some attributed this to the unwillingness to grow overall, while others suspected that age might have something to do with it, in that older entrepreneurs would be more interested in maintaining their position before selling the business and retiring, whereas the growth would come from the younger entrepreneurs hungry for new opportunities.

According to some respondents, a culture of entrepreneurship where international matters mattered little – or even those of the neighbouring province – did nothing for expanding the currently sparse international networks. In addition to critiques of an inward-looking business culture, the cooperation between businesses was also deemed to require work.

The entrepreneurs did seem to agree to an extent but also expressed some frustration with the support services and the attitudes there ("less consulting chitchat, more actual doing together" was a common message). Especially the participants from the regional branches of national organisations in the stakeholder group did agree that there was still some way to customer centricity in public services, as the status quo was influenced by existing structures, mentality, and politics.

The entrepreneurs were also asked how they felt or what they thought about the statement "SMEs should be more active in pursuing internationalisation". Not one of the entrepreneurs

was too impressed with the claim, for various reasons. While one entrepreneur was generally disillusioned with internationalisation, thought the resources would be better spent elsewhere and reckoned there was no point in it for most businesses, another noted plainly that internationalisation as such was pointless if there were no other goals linked to it. Another entrepreneur could relate and agree to an extent, but somewhat wistfully added that they would like to see the experts from the stakeholder organisations come and plan internationalisation projects while also actively engaged in running the business. The workload and the time constraint were considered to stand in the way of achieving the level of "activity" desired by public entities.

Finding support

When it came to looking for support (Table 21), the important advisory role of TE centres for the rural entrepreneurs came as something of a surprise to the researcher, but this is likely a result of naïveté, living in the regional capital and not having interacted with a TE centre since 2004. Interestingly the entrepreneurs based in the same urban area also seemed to approach either the municipal business development organisation or ELY, rather than a TE centre.

Table 21. Examples of responses regarding information sources.

How do people (entrepreneurs) find out about the support available?	
Entrepreneurs	Stakeholders
Google for details	*Website*
TE centre first point of contact for the rural businesses due to good service experiences	*Other organisations, banks, municipality*
	Outreach, public events
ELY forwards to other points of contact	*Online & social media*
	Word of mouth via networks

One participant noted that they were genuinely "really happy" with the work of their local TE centre and the advice and the encouragement received from the experts there, as the employees of the centre occasionally did site visits and phoned the entrepreneur to check in.

In retrospect, due to the high importance of Google in the entrepreneur group, it would have been of interest to find out how many of the entrepreneurs follow any of the stakeholder organisations through various social media channels, how keenly the different stakeholder

organisations look at their website traffic sources and how well their sites and the content there are search engine optimised for discoverability.

Accessing support

The different views on accessibility of services and the functionality of the support ecosystem were compared within group and across groups (Table 22). The questions, albeit different, aimed to identify any stumbling blocks in the system. The current support system is very focused on funding, advisory and facilitation. From the entrepreneurs' point of view this was all very well and good, but as they were pressed for time and did not have too many extra pairs of hands, they noted that they would appreciate concrete doing together with the consultants.

This sentiment was expressed in various forms in three out of five interviews as well as in the written responses – the anecdotes shared by one of the dissenting entrepreneurs implied (this being a subjective interpretation) that if they wanted something done correctly, they would have to do it themselves. They had had some bad experiences regarding incorrect advice given by certain for-fee support entities, which had created issues with the required paperwork. They also seemed to have a generally high workload.

Table 22. Examples of responses regarding accessibility and functionality of support network.

Entrepreneurs: How easily do the entrepreneurs get the help they need | Stakeholders: How well does the support network work?	
Entrepreneurs	Stakeholders
"You get help if you ask for it" (2/3 participants shared this view)	*Roles and cooperation models need development and coordination*
"Would want more practical help though and not just tips and verbal sparring"	*Unclear role of municipal business development agencies in the national framework – how do they fit in*
	GDPR makes information transfer between entities difficult
	Local, municipal services are familiar with the entrepreneurs' situations and have a low threshold for making contact so they can quickly investigate the needs, create an action plan and escalate

The 9 out of 12 stakeholders who answered the question extensively had plenty of insights about the need for development and seemed motivated to improve the service, co-operation,

and the organisations for the benefit of entrepreneurs. One specific obstacle for information sharing was GDPR; the regulation places limits on what can be done with personal data, and the rights of the data subjects must always be considered. In a separate remark it was noted that more cooperation, rather than competition was required from municipalities in the area as formation of cliques could not be deemed resource-efficient or conducive for general progress.

Help and information requirements

When it came to the information requirements of the entrepreneurs, the point of interest was whether the entrepreneurs sought help to all the issues, and whether there currently was help available for the kinds of problems the entrepreneurs stated they have. Based on the responses received (Table 23) there would seem to be limited overlap, but that could also be related to the limited sample size in the entrepreneur group. From the stakeholder list it seemed that there already was plenty of help available, but that possibly there still were gaps in the support cover regarding practical matters – it was hard to immediately pinpoint which organisation would be the best fit for some of the points mentioned by entrepreneurs.

Table 23. Examples of responses regarding information requirements.

Entrepreneurs: What things would you want more info on? | Stakeholders: What questions typically bring SME entrepreneurs to your organisation?	
Entrepreneurs	Stakeholders
How to devise an internationalisation plan	*R&D project finance*
Practical matters: logistics, negotiation skills, shipping	*Export/internationalisation subsidies*
	Start-up support
Standards & regulations	*Help with (application) content design, application drafting for projects*
Finance	
People who know operating procedures	*Sales leads, potential partners*
Scoping potential early on	*First steps in selling abroad*
Help with everyday operations and troubleshooting during the internationalisation process	*Business plan updates, calculations*
	Provisions and regulations
	Practical documents: permissions, certificates
	Cover for risk, payment arrangements, guarantees, working capital, finance
	Help with investment planning
	Problem-solving

Helpful and effective forms of support

As before, when looking at the most helpful and effective support measures (Table 24), practical help was important to entrepreneurs, but it could not be clearly identified from the list mentioned by the stakeholders who also weighed in on the question. The stakeholders' list included sparring, subsidies and consulting, assistance with the paperwork and partnership search, group finance and education, training and coaching. Internationalisation buddies, an initiative by the Chamber of Commerce Export Guild was also mentioned. One respondent reckoned that people needed information that helps entrepreneurs prepare for the process so that they can be pointed further in the right direction for financial and networking support.

During the interviews, the entrepreneurs (especially the ones based in rural areas of SO) noted that they preferred to talk to an actual person, not correspond via email and they appreciated a good relationship with the support entities as well as their proximity to the business. One entrepreneur said that getting the feeling that the support service providers "genuinely seem to want to see the business succeed" meant a lot to them.

Table 24. Examples of responses regarding important types of help.

Entrepreneurs: What help is important for SME entrepreneurs? | Stakeholders: What support resources have the biggest impact?	
Entrepreneurs	Stakeholders
Practical help, presence in everyday operations	*Subsidies and consulting from ELY, Leader, Business Finland*
Knowledgeable people who know the operating procedures of the target country	*Paperwork assistance from Chamber of Commerce*
Assessment of opportunities/potential	*Group finance from Leader*
	Sparring for business development
	Partnership search through EEN
	Education, training, and coaching
	Internationalisation buddies from Chamber of Commerce Export Guild
	"Information about what it takes, financial support, pointing out networks, access to expert help"

Development of services and new types of support

The participants were also quizzed about service development (Table 25). The stakeholder organisations, save for four of them, reported separately of the use of a wide array of resources for developing their services: they used financial and quality indicators, customer feedback, sparring and feedback from external consultants and process stakeholders, the staff's competence and know-how, the exploration of new opportunities via networks, annual strategy updates and research material, surveys and statistics in the work.

Regarding co-creation of solutions, both groups were excellent sources of ideas and it seemed that in some areas there was agreement; if the support entities were prepared to "spoon-feed" information to businesses and engage in some hand-holding at the grassroots level, the entrepreneurs appeared to have the appetite for it as they wished to see more basic, practical support. A more customer-centric approach to services was also called for.

Other needs raised by the stakeholders were support for hiring key personnel, subsidies for marketing and sales activities abroad, and upskilling of staff. Some such assistance would seem to be available at least for training, but for example support for hiring has been reduced according to one stakeholder and marketing costs are often excluded from subsidies.

Table 25. Examples of responses regarding development of service offering.

Entrepreneurs: How would you develop service offering to SMEs? | Stakeholders: What sort of help would be still needed?	
Entrepreneurs	Stakeholders
"I wouldn't" *More actual doing if one wanted to take part in an export programme* *Concrete services targeted directly to business*	*Better coordination and customer service journey thinking; holistic centralised solutions* *Cheap of free grassroots development projects* *Practical business "attendants" spoon-feeding information and helping businesses along* *Support for hiring key personnel* *Subsidies for overseas marketing and sales* *Upskilling staff on export and international operations* *Peer support* *Reporting on success stories and increasing willingness to develop*

One thing that a few stakeholders mentioned both in the interviews and in the responses to the open-ended questions (group funding) was group projects. Conversely the entrepreneurs did not mention these in any way, despite some of the participants having taken part in group-based projects according to online sources. It seemed that businesses wanted targeted assistance, which as an idea would seem to clash somewhat with the idea of working in a group of enterprises. No clear answer was found to the question arising from this observation, namely how the stakeholders planned to systematically develop the group project frameworks (or whether they expected the businesses to take the initiative with this) so that they worked for the businesses and created value and synergies while they also offering funding parties (government, taxpayers) economies of scale–type benefits? References to this could not be found from the Ministry of Economic Affairs and Employment (2020) plan either, as it did not seem to give Leader groups any role in the TF ecosystem.

Some further comments on the open-ended questions

As the stakeholders emphasised the importance of the entrepreneur's own "homework" in their FCM maps, it was fortuitous that they were also asked about this in the open-ended questions. The consensus was that preferably the clients would come prepared with at least the basic plan as well as material about the business which would help the stakeholder organisation's consultants quickly understand the current situation and assess the alternatives.

Looking at all the responses, the homework would include:
- an up-to-date business plan with goal-setting, strategy and a realistic SWOT analysis (strengths, weaknesses, opportunities and threats);
- a clear understanding of what product will be offered to overseas clients and why it will be attractive to them – as well as an idea of who one's competition would be;
- A summary of the resources available for internationalisation (financial, staffing, competences) and how the current organisation can support the project;
- Reports on financial performance and the company's financial autonomy ratio (basically, recent financial report documents);
- Which contacts or networks could be utilised for cooperation partners;
- What help is required from the stakeholder organisation.

For formulating a broader plan, the following would need to be drafted out:
- Intent and goals, timelines;
- Selection of a target country or a market, and potential customer segments;

- The planned mode of entry;
- Inventory of resources and capabilities, market research plan;
- Investigation of the requirements for realising the strategy, plan for actioning the strategy in operations;
- Risk assessment and mitigation plan.

When the former are made available by the entrepreneurs, the work with the consultants can get off to a smoother start and the entrepreneurs can leverage the resources of the support organisation in higher-level planning (for example with market research and organisational development).

Service pathway

The pathway for accessing services varied from one organisation to another, but it was broadly described as follows:

- The entrepreneur was expected to prepare by identifying a problem, their intent, and goals – and have their homework ready before contacting the services.
- Based on this, the expert would familiarise themselves with the situation, analyse the need for services and plan the service path with the entrepreneur based on the options available.
- This might include sparring, additional analyses or development activities, enterprise group support, subsidies for investments ranging from equipment to expo trips along with other funding applications, or a more comprehensive overhaul of the business to lay a foundation for its internationalisation capabilities by ensuring that its capabilities and resources are aligned to support internationalisation. Where assistance is required from multiple entities, the entrepreneur would be supported in making contact with various organisations.
- Once the entrepreneur was ready to proceed to new markets, the process would move through market evaluation, segmentation, and the selection of a market entry mode; regulatory evaluation; risk assessment and planning of logistics to scoping and selection of partners.
- A marketing pilot could be conducted, and a systematic implementation plan drafted.
- If the pilot proves successful, expansion to the selected market caould begin with the commencement of operations, marketing and contacting for sales, with an option to expand later to new markets to support the growth of a customer base.

Some of the stakeholders noted that where the filling of applications and the homework felt difficult, the entrepreneurs could contact their local business development agency or TE centre for help. What was not as clear was how aware the local entrepreneurs were of the processes used by the organisations, as it seemed that many of the individuals requesting help contacted the organisations without the homework or a concrete goal, or a clear idea of the capabilities of their organisation when it came to internationalisation.

Views on the application process

One forthright view from the stakeholder group, first expressed during the interviews was that the processes would need to be made easier for the businesses so that the entrepreneurs would not feel like they were being bullied and made to jump through hoops for asking for help or funding for development; "hazing" might be another fitting translation for the metaphoric expression used, implying that currently the process required help-seekers to grovel in order to receive help, and that this was leaving a sour taste in the mouth of some entrepreneurs and entities supporting them.

On this point there was some disagreement within the stakeholder group depending on the organisational context of the respondent – one participant representing entities which administer funding applications noted that it was important that the rules were the same for everyone and that the process was fair to ensure that the money (which at the end of the day would come from the taxpayers, although it would have been cycled through the bureaucracy after that) doesn't get distributed "frivolously".

On the other hand, another participant who expressed frustration with the process asked rhetorically whether it was possible that Finland was maybe a little too enthusiastic in enforcing the rules and regulations, and that not all EU countries took the same rules as seriously, potentially leaving Finnish companies at a disadvantage if other countries are laxer with their funding criteria. This was an interesting comment, especially as the interview took place a few weeks before a reportage was published in a Finnish periodical (Salovaara & Laitinen 2020) about the allegedly lax criteria applied to some EU funding projects and lack of oversight in Finland, for which there was little to show for afterward. It can only be assumed that the SO region does not have a similar problem, thanks to a strict vetting process.

Interaction with the support network

The stakeholders' perception of the important parts of the support ecosystem seemed to correspond to the pre-understanding about it. The TF network had evolved over the past 10 years in one stakeholder's experience from the old Finpro-based system to the current model, information was starting to flow better between entities and the TF network including BF and its partners were known to most. When it came to political decisions shaping the activities of the network, continuity was requested.

ELY centre, TE centres, the Start-up Centre, Leader-groups, entities belonging to the SO business service network including Into Seinäjoki and other municipal business development centres, South Ostrobothnian Chamber of Commerce and the Export Guild, South Ostrobothnian Federation of Finnish Enterprises, Viexpo, Xport, SeAMK and the regional university cluster plus the Entrepreneurship college were all namechecked by the participants (these could be found from the local ecosystem map and from the map with private organisations; figures 7 and 8). Cooperation with the Finnish Forestry Centre was also reported in one rural municipality, Sedu i.e. a Seinäjoki-based vocational education institution was included in the picture along with SeAMK, and banks granting business finance were mentioned as a key cooperation partner for funding services.

Furthermore, one stakeholder pointed out the role of the Ministry of Foreign Affairs and embassies which appeared to be generally less known – entrepreneurs could access to country-specific information and networks through embassies. The relationship with embassies was still developing as they had not been as tightly linked to the TF network in the past, but according to the participant the cooperation was moving in the right direction.

The stakeholders emphasised, time and time again, the importance of doing one's homework and having a proper foundation in place before expanding overseas. This foundation was deemed to include the following: motivation driving a growth strategy, networking that will assist in the search for partners; commitment to systematic planning of operations, sales, and marketing; utilising research on the market conditions; adequate financial resources; and competence development by staffing, training or outsourcing.

Also needed were competent board members and a business culture that fostered internationalisation, while international experience was also considered invaluable. Getting used to cooperation was deemed not to hurt. All in all, many wished nevertheless that the entrepreneurs contacted support organisations early on and made use of all the services

available efficiently. It was deemed that the acquisition of the first, trustworthy client was a major step for the business, and many would require help with that to get going.

Motivation to internationalise and contributors to success

The two groups were also asked about things that might be conducive to internationalisation. The entrepreneurs all thought the general atmosphere and the mood towards internationalisation in the region was good (even too encouraging according to one participant, who lamented the lack of similar development networks for domestic expansion).

The younger participants in the entrepreneur group explicitly expressed ambition and felt that pursuing international business was somehow necessary to "show" everyone that they had made it, although one of them had become somewhat disillusioned by their experiences and no longer thought internationalisation offered all that much value for the business. Although the other younger entrepreneur mentioned professional pride and the opportunity to showcase Finnish competence areas in addition to increasing recognition of the business as motivators, the national trade balance or government concerns in that regard did not seem to motivate any of the entrepreneurs if internationalisation did not bring actual value to the business. The same entrepreneur, still in the planning phase, further wondered whether internationalisation would work as a backdoor strategy if there was a decrease in domestic demand. Incidentally, in the stakeholder group two respondents warned businesses of considering overseas markets an "emergency solution" for falling domestic demand and low profitability; according to them exporting would likely not save the day.

The older entrepreneurs were more growth-focused, and wished to locate cheaper supply channels, competence and realise growth in sales and profits. The entrepreneur who did not submit an electronic form mentioned during the interview that they had aimed overseas from the word go as the Finnish market was too small for the business to thrive. Another participant said similarly that overseas was where most of their business came from, Finland simply did not have enough big-enough customers for them.

5.4 Barriers for exports

The evaluations entered onto the electronic form by the participants were exported from Google Forms to Microsoft Excel and tabulated. Top barriers were identified here simply by using the cumulative totals from both participant groups; no statistical analysis for

ordinal data with such a small sample was attempted. The process was kept simple as the tool was meant to be a simple gauge of the general level of agreement and used in conjunction with the other methods.

Entrepreneurs

The number of responses in this group was 4, so the data based on which the interpretations are made is very limited. Top barriers in the entrepreneur group (Figure 11) were perceived to be the lack of experience from foreign operations and the lack of distribution networks. Following those, extra administrative work, and difficulty of collecting overseas claims were perceived as a problem. Furthermore, the lack of knowledge of foreign business opportunities as well as market information, and the lack of time to search for such information were considered notable hurdles for SME export activities. Meanwhile, issues such as insurance, exchange rates or incentives were not perceived to present significant barriers for SME export activities.
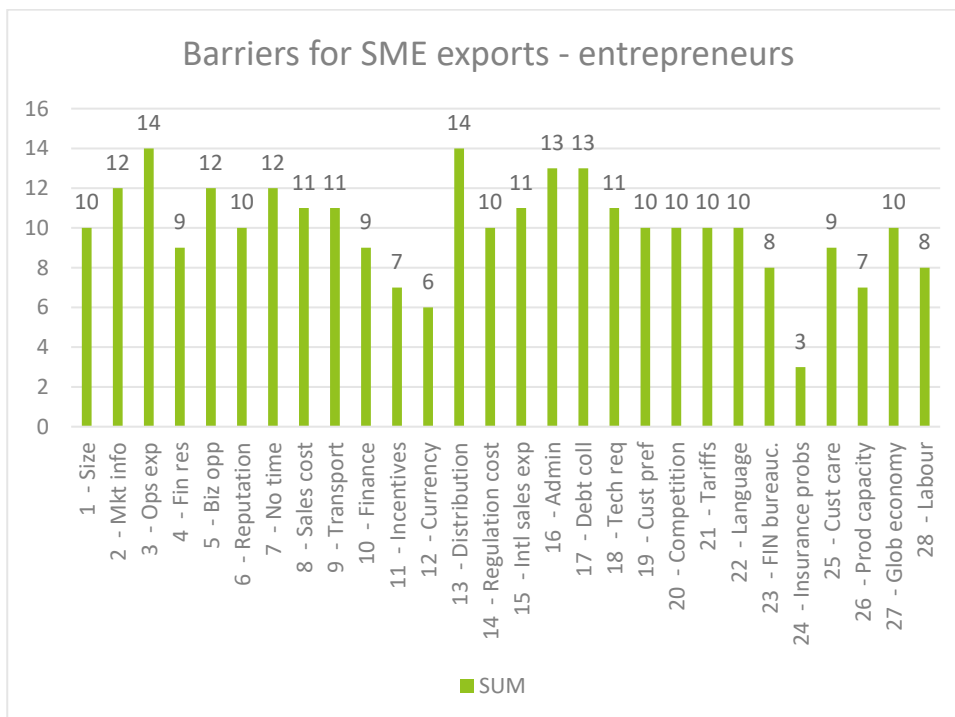

Figure 11. Perceived export barriers in the entrepreneur group (4 responses).

Stakeholders

The number of responses in the stakeholder group was 12. In this group (Figure 12) the greatest perceived barriers for SME exports were the lack of financial resources and time. Furthermore, tough competition along with lack of experience from selling to overseas

customers paired with language and communication problems worried domain experts. The small organisation size, lack of market information or experience from foreign operations were also perceived as limiting factors. Conversely, exchange rate fluctuation, tariffs or insurance acquisition were not perceived as significant barriers. The tail end of the rankings thus resembled the entrepreneur rankings to a good extent.
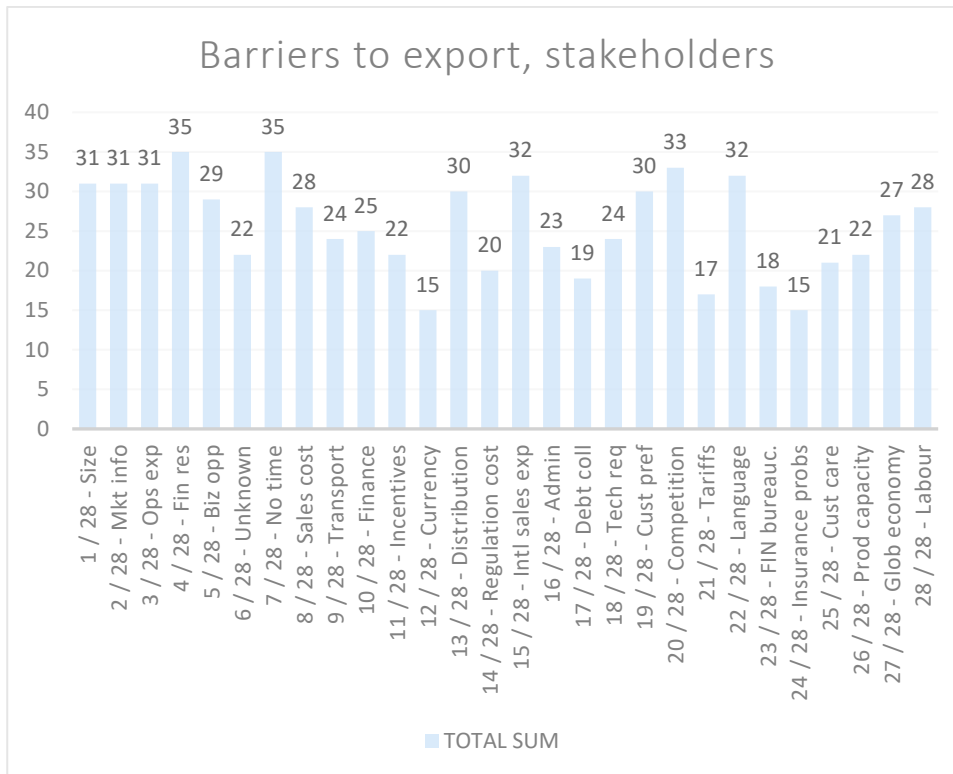

Figure 12. Perceived export barriers in the stakeholder group (12 responses).

Combined

Due to the small sample size, ordinal rating scale and qualitative approach, the various ratings were only tabulated and summed up to see which factors received the highest cumulative scores and thus appeared to be significant barriers for SME exports according to the participants (Figure 13). The word factor here does not refer to factor analysis, but to individual barriers included in the survey.

When the cumulative totals of ratings in the sample were assessed (Table 26; see Table 27 for full names of each factor), lack of time was found to have the highest score, followed by lack of experience from operating overseas and lack of financial resources as well as distribution networks. Furthermore, lack of information regarding foreign markets, lack of experience from selling to foreign customers and tough competition were also considered

problematic. Conversely, access to insurance, exchange rate fluctuation, domestic bureaucracy or tariffs did not seem to cause much worry overall.
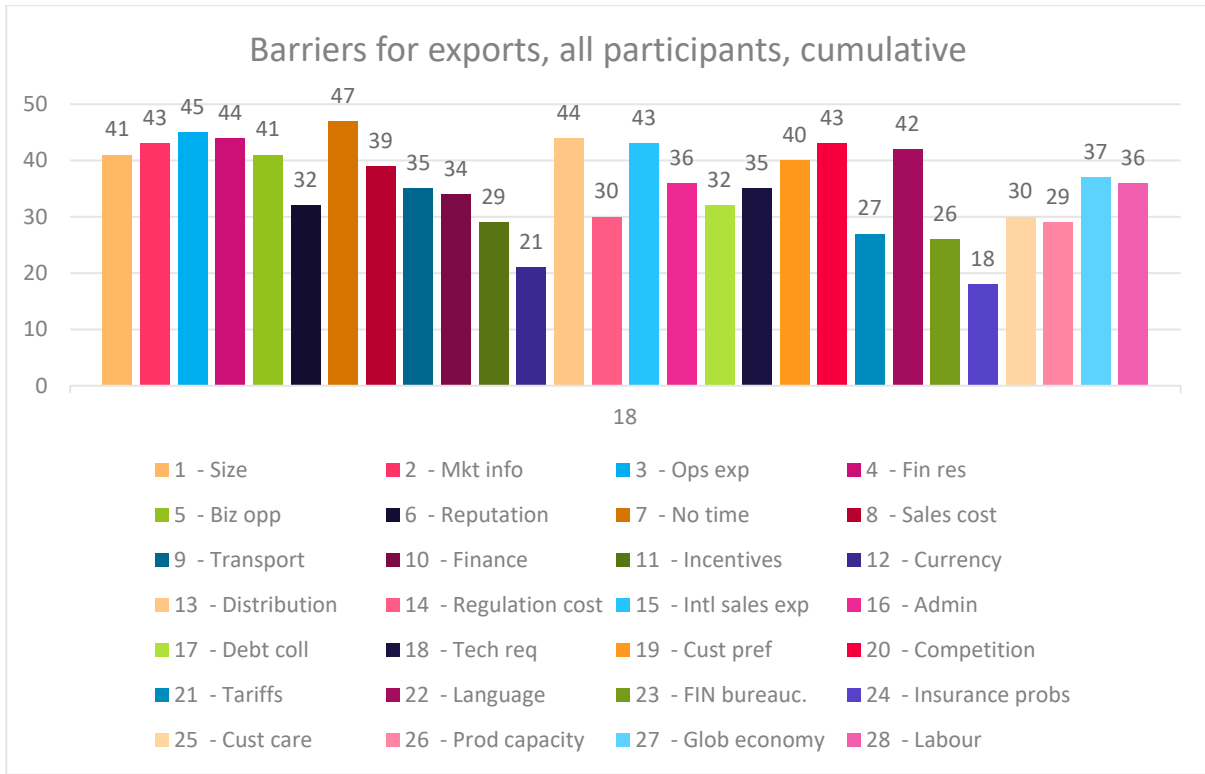

Figure 13. Perceived barriers for export, all respondents.

Table 26. Top 10 results from the export barriers survey (16 responses).

Rank	Barrier type
1	No time to search for the required information,
2	Little experience from operating overseas
3	Lack of financial resources limits activities
4	Lack of foreign distribution networks
5	Insufficient information regarding foreign markets
6	Little experience from selling to foreign customers
7	Tough competition in foreign markets
8	Experience of language or communication difficulties
9	Size of the organisation limits activities
10	Insufficient information about business opportunities overseas

Table 27. Perceived barriers to local SME exports, cumulative total from ratings.

Proposed barriers	Combined
1/28 – Size of the organisation limits activities	41
2/28 – Insufficient information regarding foreign markets	43
3/28 – Little experience from operating overseas	45
4/28 – Lack of financial resources limits activities	44
5/28 – Insufficient information about business opportunities overseas	41
6/28 – Business is not known overseas	32
7/28 – No time to search for the required information	47
8/28 – High cost of selling overseas	39
9/28 – High cost of shipping	35
10/28 – Challenges in obtaining financing	34
11/28 – Lack of incentives from the public administration	29
12/28 – Variability of currency exchange rates	21
13/28 – Lack of foreign distribution networks	44
14/28 – Extra costs arising from overseas regulation	30
15/28 – Little experience from selling to foreign customers	43
16/28 – Administration of documents and processes required overseas	36
17/28 – Difficulty in recovering outstanding foreign claims	32
18/28 – Different technical requirements and product standards overseas	35
19/28 – Different customer habits and attitudes overseas	40
20/28 – Tough competition in foreign markets	43
21/28 – High rates of duty hindering market entry	27
22/28 – Experience of language or communication difficulties	42
23/28 – Bureaucracy in domestic public administration	26
24/28 – Difficulties in acquiring insurance cover	18
25/28 – Difficulties in implementing post-sale customer service	30
26/28 – Insufficient production capacity	29
27/28 – Situation of global economy	37
28/28 – Availability of required labour force	36

5.5 Triangulation of the results from different methods

The data from different methods was triangulated to assess convergence in the material regarding SME internationalisation (Table 28). Costs versus sales was a key dynamic for entrepreneurs, and where the costs were expected to become too high (whether it be measured as time or overheads), entrepreneurs seemed happy to pass on the opportunity. With sales as a motivator, market research was considered important and it was also deemed to assist in effective targeting of networking, lead generation and customer acquisition efforts.

Touching on earlier findings, participation on expos and trade shows as well as public relations (PR) work online were very important to many business-to-business (B2B) manufacturing businesses and it also supported the aim of increasing visibility and recognition – the target group these entrepreneurs were after was wholesalers who attend trade shows for scouting new products. With more niche business-to-consumer (B2C) products, lifestyle and hobby-oriented expos were also considered important although the bulk of the business was wanted from wholesalers and private customers were directed to the web shop for smaller purchases.

As an overall interpretation, the following is a synthesis of all the maps and the discussions had with the participants:

- Internationalisation would seem to depend on a good market knowledge acquired through research, a good partnership network which may or may not arise because of the research or through systematic network development, and sales translating into cashflow.
- The workload of the entrepreneur is a salient factor in the process, as there is plenty to do and the expectations set for the capabilities of the entrepreneur are rather high. The ability to cooperate, delegate and coordinate are essential.
- A good, attractive product is a must for interest and sales, and the product as well as the organisation behind it must be kept competitive through development.
- The core functions and the cashflow of the business must be in good shape, as heading overseas requires a lot from the organisation, including time, money, effective delegation, and expertise.
- A willingness to grow and internationalise, which rise to a clear vision for directing strategy development and planning are required as a poor attitude and lack of motivation are counterproductive in the process.

Table 28. Triangulation of the results from different methods.

Method	How do the participants understand SME internationalisation in SO	What might motivate entrepreneurs to internationalise?	What might inhibit them?	What is the perception of the help offered?	What is the perception of the help required?
FCM	It requires a lot of work if it is to succeed – new markets are attractive but pursuing them can get expensive and therefore it can be safer to stay in Finland.	Sales, growth, recognition, success	Amount of work, unknown company, high costs	Practical work takes a lot of time, and consulting can be expensive so extra help is welcome	Strategy and growth-orientation, capacity Capacity and resource development, trainings PR and marketing
Empathy mapping	There are a lot of things that need to get done	Drive and doing business	Difficulty of finding information	Many prefer to rely on their networks to get information quickly	The helpers need to have accurate information available, the processes need to be easy and quick
Open-ended questions	A way to grow and achieve recognition, but comes with a lot of extra work and costs. Help is often needed and welcome. Still very limited due to lack of growth industries.	Professional pride, ambition, recognition, profitable growth, cheaper supply channels	High cost, lack of info, no time, finding experts, workload, attitudes, lack of ambition, networks	Easy to get help if one asks, mostly all good but more practical help. Good service experiences matter.	Practical help, hand-holding, spoon-feeding, operational assistance
Export barriers survey	Problem areas: No time, no operations experience, finances, distribution, market info access, sales experience, language and communication				

6 DISCUSSION

Following the review and triangulation of the results, the initial five research questions can be answered, and a problem statement concerning the wicked problem can be formulated. The various findings are also reviewed in relation to previous literature, and the ideas rising from the research are inspected closer. The formulation of suggestions is continued in the following chapter using suggestions from the participants, literature and the researcher.

6.1 Summary of the findings: SME internationalisation in SO

The work set off to find answers to five research questions concerning how SME internationalisation is understood in the region. On the question of how the participants appeared to understand SME internationalisation in SO, the view advanced by many entrepreneurs in the sample (of 5) tended to focus on the amount of work it required, how little time they had, and therefore how difficult it was to internationalise – maps exhibiting these tendencies tended to be rather sparse. The entrepreneurs seemed to know what needed to be done, task by task, and were very focused on the operational side of things.

A few of the entrepreneurs and many of the stakeholders had a broader view that looked at internationalisation as a source of growth and saw more opportunities than problems with the international markets. However, the stakeholder maps tended to also focus much on everything that was the problem in the local SMEs, from lack of growth drive and competencies to prevalence of low-growth, low-profitability microenterprises.

Motivating factors and inhibitors

When it came to motivating factors for pursuing international markets, the entrepreneurs were straight-forward about their motivations – growth, recognition and small market size were cited as the main reasons. The entrepreneurs were adept at making things happen, solving problems and seeing things through, and happy to sell to willing buyers no matter where those buyers might be based as long as the business was appropriately compensated for its efforts.

Internationalisation was not found to be an end as such. For businesses, it would need to advance the interests of the business i.e. be profitable – colloquially, if it turned out to be more hassle than what it was worth (as measured by return on investment, ROI), the interest would run out quickly. The willingness to take risk, tolerate uncertainty, develop solutions to problems and make sales were considered typical entrepreneur traits by the participants, but the extent to which each local entrepreneur would be comfortable with risk, uncertainty or problems likely causes enough variation at the overall level to make one-size-fits-all solutions untenable.

Things that the participants thought inhibited internationalisation were lack of time and lack of money for outsourcing, also leading to a lack of delegation, which then contributed to a high workload. Furthermore, the stakeholders stated that they would want to see evidence of planning from the business, which might be a problem for some because planning on paper takes time. This would also make contacting the services more difficult as the service providers expected the businesses to have their homework and strategies ready to roll.

Need and availability of help

A wide range of help seemed to be available and the entrepreneurs were happy with the diversity of the services, but would also want more practical help, hands on deck and people doing things as opposed to strategizing and talking things through (although they did reportedly like that too when they were in need of soundboarding for ideas). While practical help was requested by many entrepreneurs, the stakeholders on the other hand saw the need of capability development, strategizing and planning, as well as more engagement with the support services so that the entrepreneurs can be properly supported, and they get all the help available to them. Language proficiency or its absence was deemed a problem especially in the stakeholder group, as Finnish, English and Google Translate could only achieve so much south of the Finnish border.

Based on the responses, where services are centralised or increasingly collected under the auspices of ELY, it would be important to also recognise the significance of the local TE-services and municipal organisations outside Seinäjoki (where all the central, regional offices are) – this did not seem to be very well established in the new government internationalisation road map, which also did not mention Leader groups which would be a notable source of help in the rural areas of the province.

Entrepreneurs appreciated the personal relationship they had with the local support organisations and preferred to talk to people face to face or over the phone, rather than to correspond via email. The feeling that the people helping them genuinely cared about the business and wanted the entrepreneur to succeed was important. Conversely, what various entrepreneurs and support providers did not want was more trouble from the organisations that were meant to be helping them: this included outdated or wrong information supplied, receiving poor service one day and good service the other depending on who they were dealing with, the "facelessness" of some help centres and some apparent lack of understanding of the entrepreneur's perspective (what implications the wrong information or delays can have for the business). Easing the access to information and getting the information to move better between entities as well as streamlining bureaucracy could reportedly be worked on.

The problem statement

The limited availability of time and funding in addition to access to information and know-how were identified as the main issues facing SME entrepreneurs in the SO region. If one is to frame the level of internationalisation in SO insufficient and problematic, the suggestion here is that attending to the main issues identified in a systematic, incremental manner could be expected to have a cumulative, gradual impact on the system. The above issues could be realistically addressed through 1) increasing the entrepreneurs' access to information so that opportunities can be better identified and 2) building up and strengthening basic business competencies so that the business could grow beyond borders in a controlled manner.

In searching for solutions, the earlier FCM outdegree scores can be re-examined to identify areas where quick countermeasures might be attempted. Based on the research these would include enhanced expo participation, market research, partnership and network development, personnel solutions, trainings, visibility and PR for recognition. Areas where significant effort would seem to be required include business size, the existence of competition, motivation.

The combined map, or the matrix behind it, might be used in further modelling exercises to assess potential pathways of influence. The rationale for this is that although the maps created here consisted of individual, subjective views and may thus also have codified some individual biases or misconceptions, the aggregated map could be thought to be a broad-based if also frozen-in-time representation of the current understanding in the region (see Özesmi & Özesmi 2004), and a passable starting point of scenario modelling exercises. Other maps could be

generated following the process described here, should repeated-measures exercises or additional viewpoints be desired.

Caveats

One must be mindful that it can also be expected that the system will begin to change in response to any intervention and action taken in partially unforeseen ways. For example, it might be hard to predict what consequences discrete local interventions might have on the regional, national, or European level if there is competition present between different regions, rather than cooperation. Therefore, the advice here is to not expect simple cause–effect relationships and indeed none can be predicted from the data presented. Nevertheless, incremental, iterative development and the assessment of the fitness of chosen measures as well as the desirability of outcomes at regular intervals could be expected to be a sound, agile approach. It is acknowledged that this sort of take does make the process of operationalising ideas for research and progress monitoring more challenging.

The participants in this research included a group of entrepreneurs who already had or were planning to engage in business overseas at some point in time and headed an organisation that included more people besides just themselves. Based on the views expressed by the stakeholders in the sample, that kind of entrepreneur is not very typical in the SO region, as many others are sole proprietors working in low-growth, low-profitability industries and their area of influence only might cover their hometown or the province.

It is argued here that while it is important to identify and acknowledge the concerns expressed at an overall level, targeting additional efforts to influencing pain points of entrepreneurs who are already willing to internationalise might yield quicker results than an uphill battle of wills (or the lack of same) regarding the willingness to grow or to internationalise. An alternative strategy might be investing in the systematic development of all companies in the region, regardless of their intention and capabilities – some might end up growing, but the issue of affordability, heavy local or national government involvement in the functioning of the market and skewing of competitiveness at the national level might raise some hackles.

Moreover, the use of consultants for filling applications due to lack of time can be understood. The process of accessing additional resources for development ought to be made simple, intuitive and transparent through diverse user testing, with an eye to efficient resource use and

enhanced tracking of milestones and outcomes where one wishes to avoid debates regarding fair allocation of resources. If it should turn out that consultants must be employed because the planning and application process is so complex that it cannot be attempted by a layperson and only the consultants know the "right words" which need to be included in the applications for a positive outcome, the system has taken a shape that probably does not resemble what was originally intended. In all fairness, it is acknowledged that systems administration or project management in a VUCA (volatile, uncertain, complex, ambiguous) world is no mean feat.

6.2 Research findings in the context of previous literature

The entrepreneurs appeared to be motivated by growth, recognition and the market being too small for the product in Finland; these would roughly seem to correspond with the common push/pull factors introduced in the internationalisation literature (Luostarinen 1982; Welch & Luostarinen 1993), with some features of the Uppsala stage model (Johanson & Vahlne 1977; 1990; 2006; 2009) also observable in the way some of the entrepreneurs preferred to explore all domestic growth opportunities before heading overseas, and how they deemed lack of information and networks to be an issue – however, the final decision seemed to be made more on the basis of saving on process costs than as a result of "liability of outsidership" (Johanson & Vahlne 2009). Then again, it is possible that the self-reporting was limited and real motives for staying in Finland were not fully disclosed.

Proposed basic model of systemic business activity and its influences

The traditional internationalisation models have not looked at the process from a system dynamics point of view, although features of complex systems have started to appear especially to the updated Johanson & Vahlne models. Here a proposal was made for a hypothetical dynamic model that could be applied to assessing the SME as a system, with growth or internationalisation as the desired emergent outcomes, based on the findings from the FCM section (see Figure 9 earlier).

Where the dynamic model created from the FCM maps does encounter some difficulty is in suggesting an obvious an explanation for the mechanism which would determine or predict whether any particular outcome would become a capability, resource, or a property; a driver or a booster; a property or a blocker; or their potential transition from one type to another over time. Part of this could be due to FCM being unsuitable for making generalisations or

predictions, as well as both the understanding of the concept having been subjective on the part of the participants, and the division of concepts having been a highly subjective exercise on the part of the researcher. Quantitative analyses of FCM-based models and simulations of the influence of different concepts might help in categorising them in a more justifiable manner.

Part of the difficulty might also be a result of the system complexity and dynamism – the FCM cannot cope with concurrent events, and they are not time-sensitive. This would almost certainly create fuzziness in any trajectory predictions, should one try to extrapolate future behaviours from a snapshot. The real-life system is irrevocably changing over time, even if the individual changes driving the development may be minor. This also makes continued modelling and the tracking of any changes and emergent phenomena necessary, and the exact mechanisms of influence would still need to be explored further at various levels.

Approaching the issue from this viewpoint while drawing on literature looking at different parts of the business ecosystem in general, the relationship between the external environment and the internal existing capabilities and resources as well as attitudes within the business might be better explained with a theoretical synthesis of:

- SME as a complex system, different ontological levels and dealing with emergent system properties (Fuller & Moran 2001; Nair & Reed-Tsochas 2019);
- Dynamic capabilities thinking, Resource-Based View (DC and RBV; Peteraf 1993; Teece et al. 1997; Barney 2001; Barrales-Molina et al. 2013);
- Core rigidities (Ambrosini & Bowman 2009; Ambrosini, Bowman & Collier 2009) and resilience-thinking (Berkes 2007; Bristow & Healy 2013; 2014; Limnios et al. 2014);
- Diffusion of innovation (Rogers 1962; Robertson 1967);
- Effectuation and causation (resource-seeking and resource-based strategies of businesses; Sarasvathy 2001);
- The export barriers model with internal and external barriers (Leonidou 2004, 283);
- Network dynamics research (for example Majdandzic et al. 2016);
- Behaviour cascades in social networks (Fowler & Christakis 2010; Kreindler & Young 2014; Lane 2016; Muller & Peres 2019);
- The role of disruption and crisis events in the evolution of systems and their implications for resilience (Saunders et al. 2014; Bristow & Healy 2015);
- Transient competitive advantage (McGrath 2013);

- Internationalisation in complex systems context (Chandra & Wilkinson 2017a; 2017b).

Attempting to integrate the above into a supplementary model, the process of resources, capabilities or features changing into boosters or barriers depending on their influence on activities and competitive advantage could be understood through the concepts of DC and core rigidities (Figure 14), which either increase or decrease the competitiveness and resilience of the company in the presence of competition in their environment. The probability of a business surviving or failing would be influenced by its dynamic capabilities, quantifiable – albeit with some difficulty – as the total resources and capabilities of the business, including networks and other tacit resources. These could be expected to be a source of resilience in the event of disruption which would require the business to reorient and reorganise itself in relation to the changing environment.
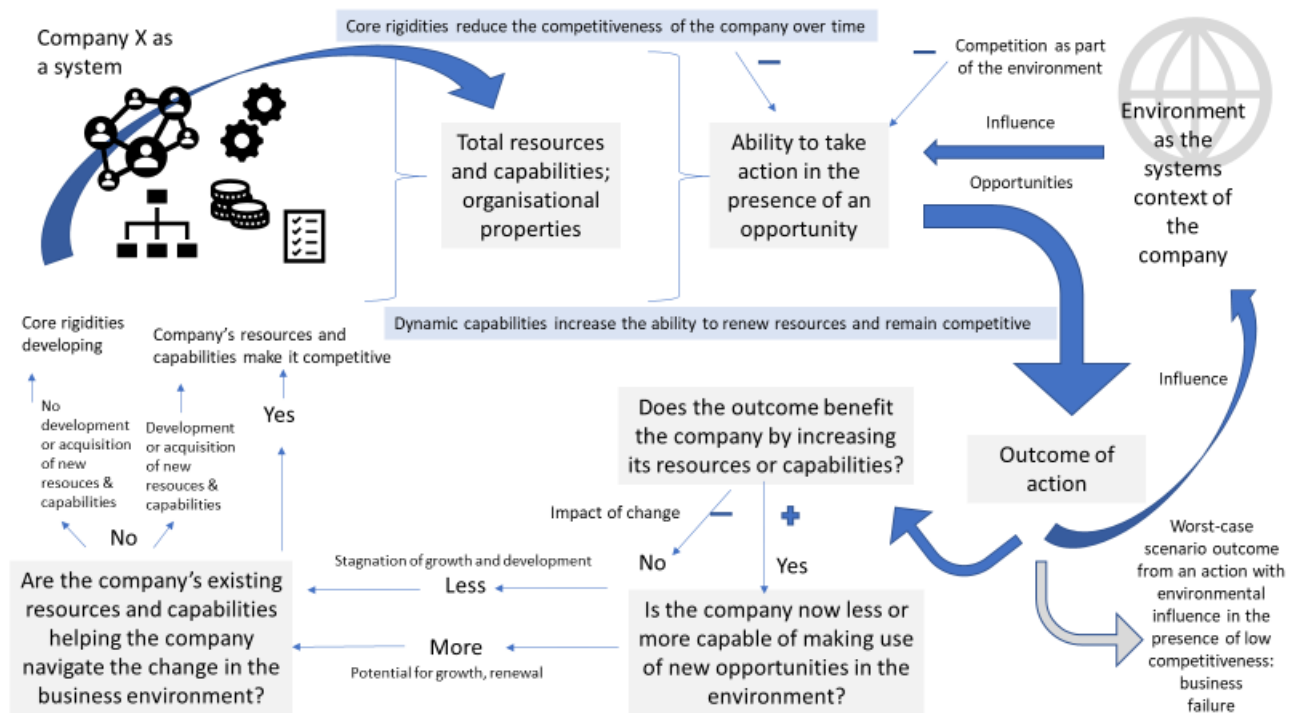

Figure 14. A rough sketch of a systemic DC model.

The models developed from the FCM categories do bear some coincidental resemblance to the multiple-indicators, multiple causes (MIMIC) model of DC generation by Barrales-Molina et al. (2013, 575) although the contents are substantially different. Some parallels to the growth bottleneck model of Sorama et al. (2018) can also be drawn.

In the nascent DC-driven model information about the environment is thought to direct the companies' orientation to it, while new ways of combining information and innovations would lead to new competitive advantages where their dissemination would manage to influence the environment and create new demand or goodwill. While attitudes do influence information processing at the level of individuals, the higher the quality and the quantity of information, the more accurate the response to the information could be expected to be. However, this would also require a capability to act. The speed of adoption of innovations, modelled through the diffusion of innovation curve as well as behavioural cascades in social networks, could be "growth-hacked" or influenced through various (marketing) activities.

Acting in the background in the presence of competition is the Red Queen effect, giving rise to an "arms race" through co-evolution in that the competitors would aim to outdo each other, with neither managing to reach a monopoly position if they both keep innovating and their innovations are adopted by the customers while the companies continue to make a profit in the process. The competitive environment would remain "at the edge of chaos" and the competitive advantage transient as new entrants continue to appear to challenge the incumbents and exploit new niches, utilising new sources of information and ways of doing things. Cooperation in the same context could lead not only to conservation of resources, but also to emergent synergies as sources of information and resources are combined in new ways.

Relationships would be formed and dissolved over time through accident or intention as different parts of the system re-orient and reorganise, creating new opportunities through novel outcomes. The idea of reorganisation is distinct from the idea of hysteresis (cf. Majdandzic et al. 2016) which is sometimes applied to social sciences and economics; unlike in hysteresis, the system is not expected to return to a previous state following a shock due to the irreversibility of the CAS trajectory, and any eventual stabilisation of the system following disruption would be a result of spontaneous reorganisation or autopoiesis in the system. The previous state cannot be returned to, so the "new normal" will invariably be something different.

Reflecting on the model based on research findings

What the systemic DC approach to the FCM concepts would seem to particularly highlight is how much the interplay of the different parts of the system seems to influence not only the action taken by the business but also its outcomes. Claiming that the issue of internationalisation in a complex world hinges on the presence of DC in the organisation which

allow the business to orient appropriately to the environment might be a relatively bold move, but on the other hand it would seem to align with the thinking of Chandra & Wilkinson to a fair extent (2017a; 2017b).

How the issue was discussed in the interviews also offers some support for this interpretation. In the stakeholder group the influence of the entrepreneur was deemed significant, as they are the first source of resources and competences for the company, and their attitude and capability to identify opportunities not only determines the motivation to start, but also whether there is a goal in the first place. Over time delegation, capability development and a willingness to step back instead of trying to do everything by oneself were considered important for the growth of the business. This also aligns with the Tornikoski et al. (2011) growth model and the Sorama et al. (2015; 2018) bottleneck model.

Well-managed growth would introduce new resources and capabilities to the company and create new relationships which assist in information and resource acquisition or reorganisation. Many stakeholders and some of the entrepreneurs opined that it was the job of the entrepreneur to ensure that resources were utilised in an optimal manner – which also refers to their own personal resources, including time and know-how. Management, through the complex systems lens, would involve information acquisition and monitoring of the situation, identification of opportunities, and reorganisation or acquisition of resources to ensure their efficient use in the pursuit of desired outcomes.

This type of activity was particularly discernible in the case of two of the entrepreneur participants who, based on their FCM description, appeared to be running very well-oiled machines from the organisational point of view, although in the case of the second one the company was relatively new, smaller and therefore with fewer resources when it came to delegation. The focus of the entrepreneurs was on business development, deal-making and strategic coordination, while additional things had been outsourced or delegated to other parties as much as possible. One of the entrepreneurs also considered this vital for the coping and wellbeing of the entrepreneur, as a small business would run into problems without the entrepreneur providing leadership. The second entrepreneur of the two noted that the aim was to organise things so well that the entrepreneur was not even needed in the operations, and that the business kept running without the entrepreneur having to be present at all times.

This may be a lofty goal, but some scepticism was expressed by the same entrepreneur as well as a few of the stakeholders regarding most entrepreneurs' ability to step back and let go. Looking at the issue from a distance, it could be that the same personality factors that get people to start businesses and get them going as per Walter and Heinrichs (2015; wish for independence, self-efficacy and capability, profit-opportunities, etc.) also restrict growth in the long term unless the entrepreneurs manage to shift their attitudes and habits, giving up any ideas of omnipotence. This, too, would seem to sit comfortably in the growth models of Tornikoski et al. (2011) and Sorama et al. (2015; 2018). Business services for growth might benefit from a genuinely customer-centric approach that carefully considers the influence of the personality of the entrepreneur and their attitudes on the process and the subsequential support needs.

From the systems point of view, the creation of an organisation and processes would relate to re-organisation and resilience-building, increasing the ability of the organisation to withstand shocks – such as the entrepreneur being missing from the action for some time, which could be catastrophic in a case where access to resources depends on one person, at all times. Where the preferred outcome is an ability to orient to the environment and act effectively, organisation and distribution of resources and information, as well as their monitoring and purposeful renewal based on the ability of the organisation to respond to the environment can be a source of some resilience. From a risk point of view this would seem like a very sound basic strategy for risk mitigation. The practice of distribution of resources does expose the organisation to other types of risk such as intellectual property (IP) and human capital (HC) loss, and thus the factors influencing the probabilities of a negative outcome would need to be analysed, and the benefits of organisation-building would need to be weighed against the risk and the costs of mitigation. Assistance for this work might be required where resources, preferences and attitudes could be thought to influence information-processing and the accuracy of the predictions.

Supporting development and growth

The Fuller & Moran (2001) model may help in remaining mindful of all the different levels interacting together to produce the observed outcomes. While personality or the temperament of an individual is thought not to change much, attitudes can be changed (McGuire 1968; Millar & Millar 1990; Oreg 2006). While this may be difficult, taking a systems approach to the issue and attempting to effect change through nudges could be recommended. Moran (1998)

reported of a development programme where attention was paid not only on the growth orientations of the entrepreneurs, but through research, also their personality characteristics as part of a comprehensive, multidimensional view of the entrepreneur to better target the service offering to them.

Having said that, the references to judging and perceiving in the Moran (1998) profiles would indicate notable reliance on the Myers-Briggs Type Indicator (MBTI). The testing tool is extremely popular, but the practice of making routine inferences from its results or using it to predict occupational outcomes has been met with some resistance (Boyle 1995; Capraro & Capraro 2002; Pittenger 2005) and mindfulness of the limitations (operationalisation of Jungian concepts, reliance on dichotomous preference scores, test-retest variance, inter alia) is advised where one wishes to use it as an assessment tool in the context of development services. Gardner and Martinko (1996) have offered numerous suggestions for practitioners planning to use the scale. It seems possible that in sometimes offering different results for the same person over time, the tool does not accommodate the possibility of changes in responses through for example self-reflection and other factors, and therefore it cannot be said that ratings or any inferences made from them could be set in stone; as a rule of thumb, setting things in stone would appear to be a terrible strategy on approaching complex systems.

Support, emotive affect, and information search

It was interesting to observe that the feelings expressed by the entrepreneurs during the empathy map section could be fitted into either a positive or negative affective category. On this point it can be noted that people's abilities to conduct information searches are negatively affected by stress, negative attitude, and bad mood. Stress influences the individual from the biological level up and aggravates the problem by causing additional discomfort to the individual (Ellenbogen et al. 2002; Harris, Hancock & Harris 2005; Sandi 2013).

Looking at the Fuller & Moran (2001) model from the beginning of this work, a fuzzy description of the interaction between different things could be summarised as: events in the environment are perceived by the entrepreneur (information processing) → a stress reaction ensues (biological level) → continued need for information + influence of stress on information processing → suboptimal task performance; its influence in information search, on drivers for action as well as actions taken → potentially suboptimal outcome → feedback through

information processing, influencing the biological level → further influence on other parts of the system and the environment.

Undoubtedly, a more complex model of the process would have to be developed to accommodate the influence of bias and bounded rationality, including scenarios where incongruence between previous representations and new information results might give rise to cognitive dissonance. However, following the basic logic, it could be stated that the easier it is to find the information and the clearer it is, the better one can expect overall task performance to be when it comes to information search, and the easier it is to incorporate the new information into the existing mental representations of the individual, and the better-informed the potential actions taken by the individual will be. This hypothesis can be empirically tested in cooperation with User Interface (UI) and User Experience (UX) designers and researchers.

(NB. In the absence of a neat post-positivist description of consciousness and information processing at the biological level, the work leans more in the direction of constructivism when it comes to describing how individuals process and store information.)

Calling back to the theory of entrepreneurship from Shane and Venkataraman (2000) and examining the claim that scarcity of information is a necessary condition for entrepreneurship, it can be asked whether the process of information search shouldn't be facilitated as much as possible by the parties wishing to create more entrepreneurs and growth – could easy access to information not be a local competitive advantage built into the system? Should the information search and dealing with the process feel like an uphill battle (intentionally or unintentionally), or could it not be facilitated as much as possible?

Similarly, thoughts awoke from the observation of the entrepreneurs' FCM maps being limited in some instances. Making sweeping generalisations based on a sample of five persons would be thoughtless and it is possible that for example a tight schedule simply kept the responses curt, but the accuracy of the interpretation that focusing on problems limits one's view of the overall issue could be explored further with different designs. Cognition and perception have been hypothesised to interface, and concept acquisition to be also driven by perceptual processes, rather than simply cognitive ones (Montemayor & Haladjian 2017). When it comes to entrepreneurs as well as the general population, does the perception of problems limit the overall perception of the issue, and if so, what does it take to effectively address this where the perception is unduly preventing the individuals from also perceiving opportunities? Are the

conditions as bad and the opportunities as few as the individuals perceive? This could be expected to have significant consequences for the orientation of entrepreneurial activities.

Furthermore, if the conditions really are bad, it would need to be considered whether it is ethical or appropriate to "push" people into entrepreneurship or to pursuing various goals through means of different public policies if they realistically cannot be expected to be successful and make a profit to sustain themselves; much of the time self-interest and survival can be expected to trump any wider societal considerations at the level of the individual.

The contrast between domestic and international business development, as perceived by one of the participants was interesting when considering the results that much of the internationalisation process hinges on the capabilities and the systems of the business being in good shape before internationalisation should be attempted. There would seem to be a gap of some width between start-up support and internationalisation support – the government growth and internationalisation plan likely aims to address this, but in addition to a customer-centric approach to development, the process of management competence development could do with development itself. While there are trainings and degree courses on entrepreneurship, not nearly all entrepreneurs have attended one. On the other hand, the entrepreneurs expressed some frustration with much of the sparring, consulting and advice being theoretical, instead of practical. Interest in and readiness to increased hand-holding and spoon-feeding was expressed by some of the stakeholders, so the gap might be bridged if a suitable delivery platform or an entity is found for this sort of support and competence-building.

International competence

The definition of international competence ("kv-osaaminen") was apparently assumed to be a given by the stakeholders as it was not separately defined at any point, and the researcher made the mistake of not asking for the stakeholders' view on its exact contents. On closer investigation, the idea would seem to be a more elusive, abstract concept consisting of various factors depending on the source. The research here understands it based on the model developed by the Finnish National Agency for Education and the think-tank Demos Helsinki (Figure 15), which defines it as capabilities acquired through international experience, including language ability, tolerance, cultural competence, curiosity, productivity and resilience, with the latter aspects demonstrating the value of the capability to the businesses (Demos Helsinki 2013, 43; Finnish National Agency for Education b).

The extent to which this capability can be easily developed is not immediately clear, but would need to be considered in designing far-reaching, longer-term interventions. Additionally, incremental improvement and cumulative small-scale solutions could be considered a workable strategy in remedying any identified low international competence. Hope should not be lost at any point.
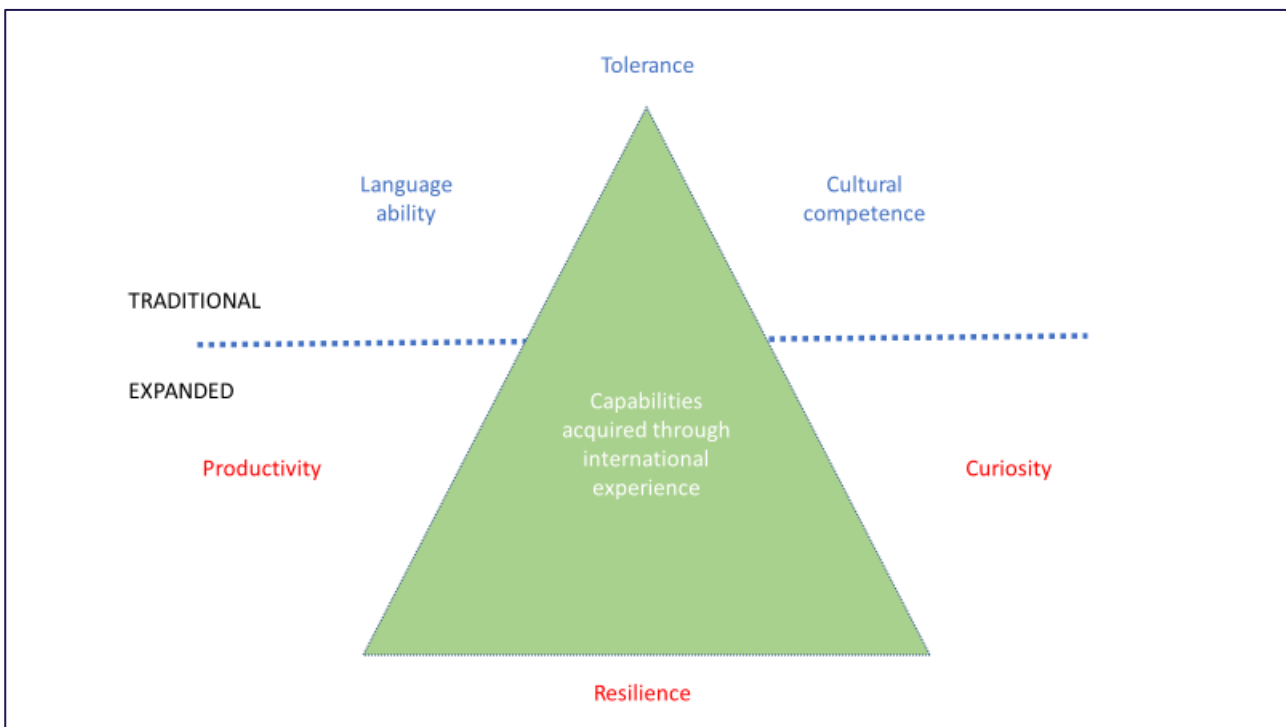

Figure 15. International competence model, Demos Helsinki (2013, 43; Finnish National Agency for Education 2021b).

Is internationalisation in SO really a wicked problem?

Mindful of the concerns expressed by Peters (2017) regarding the dilution of the wicked problem concept, its abuse and indiscriminate stretching, the issue of internationalisation in South Ostrobothnia would not seem to be a fad. Looking at the characteristics of a wicked problem set out by Ritter and Webber (1973), SO SME internationalisation would seem to qualify as one. To start with, it is difficult to define, would indeed seem to be a symptom of other wicked problems, and therefore there are several different ways to describe the discrepancy representing the problem: is the real problem lack of competence and perhaps an issue of education, lack of pursuit of international business, lack of growth stemming from lack of ambition or perhaps lack of information regarding additional business opportunities, and is that a problem of poor information sharing or a feature of a competitive adaptive system in which information is considered a commodity?

As there are many sides to the issue, solving it conclusively is challenging to start with and this is rendered perhaps completely impossible by the fact that due to constant change and emergence in the system, the shape and number of potential problems as well as solutions keeps changing. Solutions cannot be tested in advance for the same reason, and thus they can seem like a good idea to start with – until they turn out not to be. Solutions, neither right nor wrong, only reside at any point in time somewhere between good and bad without a set location.

What is more, interventions have irreversible consequences, which puts the system participants trying to get the system to move in a desired direction in a difficult position. The past influences the current state of the system, and therefore each wicked problem would be unique to the very system in which it is embedded in; it has no precedence. For instance, although the same export barriers have been observed in many countries (Narayanan 2015 inter alia), the exact reasons behind the observed outcome "barrier to export" can be expected to differ from location to location. Naturally, learnings can be taken from different context and examined in relation to the local context, and this sort of "lessons learned" repository building is in fact encouraged. However, the application of distinct solution attempts from other contexts cannot be expected to solve the whole problem in the local context, as it is unlikely to fix the entire problem in the original context for the reasons mentioned above. Small-scale solutions could be tested as nudges but expecting a silver bullet would likely lead to disappointment.

Any action taken (or not taken) has an outcome, which will influence the rest of the system in some way both in the short and long term through cumulative effects. The wicked systems 'dogma' states that the "planner has no right to be wrong" (Rittel & Webber 1973, 160), and trying to course-correct a system that has taken a whole new, unexpected turn following bold, decisive action can be more difficult than trying to nudge it all along in small increments. There is no way to immediately test for the outcome of interventions as the accuracy of simulations would depend on the accuracy of the model it is based on, and there will always be more possible future states than what can be modelled.

The model complexity also influences the speed at which one can expect to run their model and get information from it. Taking shortcuts and using fuzzier inputs would create uncertainty in the model which will only be compounded over time especially if the difference between expected and actual outcomes is not constantly monitored and the feedback used to refine the model. The level of detail also influences how quickly emergence can be spotted and

incorporated into the model; as a result the number of potential solutions cannot be exhaustively defined as the list keeps changing and growing in real time.

System change to address wicked problems

Mindful of the problems inherent in complex systems, for example Westley et al. (2013), Waddock et al. (2015) and Nair and Reed-Tsochas (2019) have put some effort into finding strategies for system change. According to these authors, engaging individuals within the system to act as change agents and influencing stakeholders' beliefs, mobilising social capital while challenging existing frameworks and integrating local knowledge can create the desired kind of lasting change. Essentially all system participants are change agents with transformative capabilities, but "transformative agency" is understood as a more goal-focused, concentrated and coordinated effort by system participants (Westley et al. 2013).

Regarding change types, Waddock et al. (2015, 1006–1008) defined these as:
  – "no question about what we do, only minor questions about how to do it" (incremental change);
  – "defining roles and benefits to achieve an agreed-upon set of goals" (reform) and
  – "change how and what people see and make sense of data and their world, identify previously unimagined goals and possibilities, and experiment with radically innovative ways of doing and organising" (transformative change).

The five guides for system change by Waddock et al. (2015, 1006–1008) were:
  1) recognition of the role of memes in perpetuating the vision, values, norms and cultural artifacts which shape the status quo through the creation of new memes that are aligned with the desired direction of change and readily understood by a large group of system participants;
  2) distinguishing between incremental, reform–type and transformative change;
  3) prioritising learning amidst constant change both through experience and experiments;
  4) considering co-evolution and emergence in one's action framework through fostering diversity in resources and interventions, as there is no certainty regarding which of the approaches will work, and this will also enable one to take advantage of ad-hoc opportunities emerging in the process;
  5) emphasis on resilience and adaptation, supported by the previous point.

Starting from the initial observations, the work has 1) attempted to create an understanding of the problems faced, 2) developed empathy for the people involved in the work and their points of view, and 3) created a definition of the problem using the information collected. This roughly follows the double diamond pattern of a design thinking process (Figure 16). Despite the challenges reviewed earlier, the work here will next attempt to generate some ideas for nudges targeted at specific issues identified by SO entrepreneurs and stakeholders. Their more extensive prototyping, testing and further development must be left to other parties.
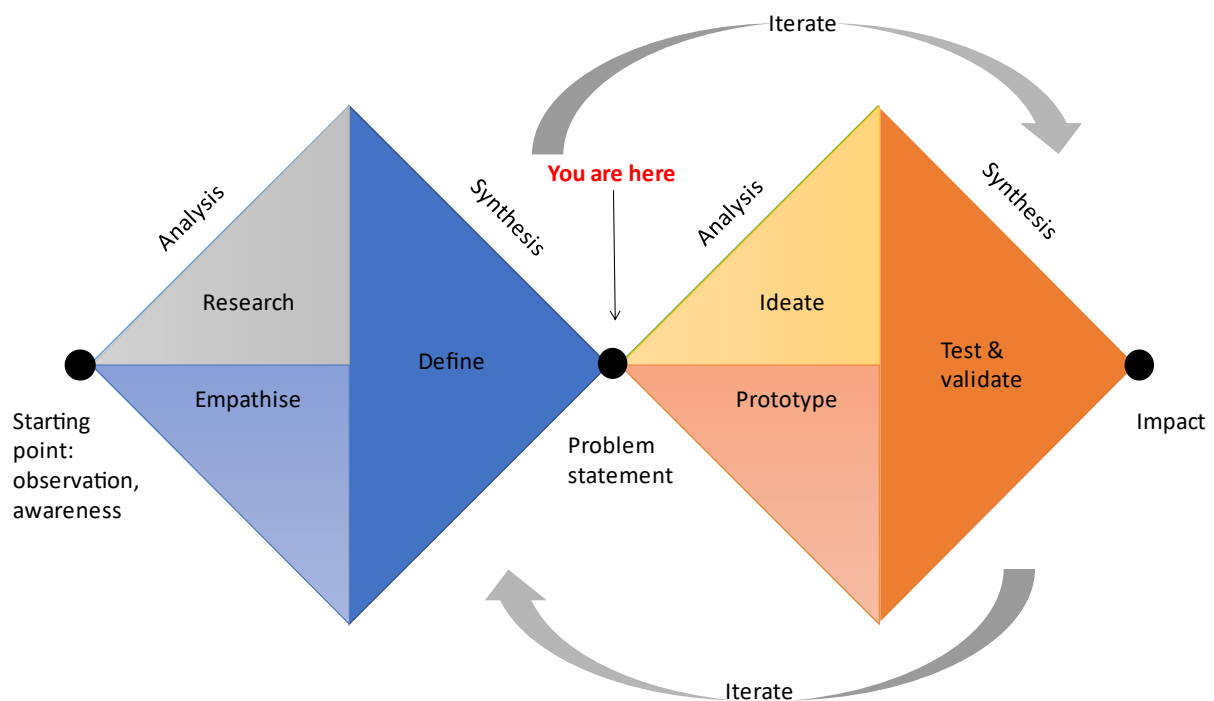

Figure 16. Double diamond process in design thinking (modified from Santos et al. 2017).

7   CONCLUSION

The work concludes with a variety of suggestions for addressing some of the main problems identified in the course of this work. The previous chapter aimed to define a problem present in the local CAS, as well as to describe approaches from the literature that might be taken when tackling it. Some of the suggestions presented next are based on the input offered by research participants, while others have been independently developed.

As it has been argued here that to be able to effectively orient oneself to the environment, continuous observation of the environment is required. This work has hopefully managed to scratch the surface of the complex system that is the South Ostrobothnia business ecosystem and given some ideas for development. Recommendations for future research topics are offered along with concluding remarks.

7.1   Practical implications and suggestions

With solutions design, it is proposed here that attention is focused on improving access to information and know-how, as these can in turn influence both the availability of time and funding due to there being less footwork involved. Addressing this issue is also expected to support the goals of capability development and strengthening of basic business competencies, creating a good foundation for business growth through increased identification and exploitation of opportunities. Furthermore, the creation of new role models and an accumulation of lessons learned in the region could inspire other entrepreneurs to follow in their footsteps.

Some of the targets rising from the interviews, based their centrality and outdegree figures in FCM analysis, were expo and trade show participation; market research; partnership and network development; personnel solutions; trainings; and visibility and PR for enhanced recognition. It can be assumed that the competition is not going to go anywhere, but by enhancing capabilities and competitiveness while at the same time increasing recognition (both from the business services ecosystem as well as customers), sales, motivation and business size can all also increase – many of the entrepreneurs were motivated by sales after all. Only a handful of suggestions is offered here, covering the topics listed earlier. They can always be developed further, and more ideas can be generated over time.

Customer-centric process development

Potential time-savings achievable from thinking through the customer processes are here predicted to be not insignificant. Relatively simple measures can have a big effect: 1) reducing the entrepreneurs' need for processing masses of information on the website by offering shortcuts to the information they are searching for and 2) clearly indicating what "homework" is required before contacting service providers on certain topics would likely save at least two or three phone calls and a few emails per entrepreneur. This can be tested empirically by measuring the time required for finding the information required and submitting an application.

At the same time, it would be important to maintain the perception that the entrepreneurs are always welcome to approach the business development agencies. Especially the municipal agencies have a big role in this even in the presence of high-level service centralisation to ELY and FFA. It ought to be clearly communicated to the entrepreneurs that the municipal offices can help with the "homework" that they need to prepare for the other entities, and that their door is always open. It was encouraging to hear that this is the case in many places around the province.

Application processes were discussed in the interviews and in the open-ended questions, and they had also attracted some public criticism in 2020 especially in the context of remedial business development support coordinated by BF during the first wave of the Covid-19 pandemic in Finland, with media highlighting some opportunism and the role of consultants in some applications (Gråsten 2020; Harju 2020).

Although source criticism is required with tabloid media and the process was deemed simple by the entities administering the applications, different interpretations would also need to be considered. A perception of one needing a for-fee consultant to get one's funding application accepted can be considered potentially harmful as it may increase the threshold for approaching support entities and would likely need to be addressed with increased transparency of the process. The application process and the required documents should ideally be so clear and simple to get through that one does not need to consider hiring a consultant to be able to submit a successful application. Mobile-friendly infographics can help in presenting the information in an easily-digestible format, and these can be supplemented with audio descriptions for accessibility.

A small-scale independent investigation was conducted following the interviews to get first-hand experience of the issues mentioned. A summary of this, the observations and relevant suggestions can be found from Appendix 3 under Online service path development.

Market research

Market research was one of the main things required for internationalisation as reported by the participants. Getting the information required from its source to the entrepreneurs needing it could probably be assisted if it were known to the support network members what type of information the entrepreneurs need – this would require better communication, and a good relationship between different parties to facilitate sharing of information. It is also possible that entrepreneurs do not know they need certain information until they see it and spot an opportunity, which admittedly makes optimising the process difficult.

The role of municipal agencies as the first, low-threshold point of call for entrepreneurs requiring help would make them a good place for doing homework before submitting plans and applications to ELY or other entities. As preliminary market analyses are normally required, organising suitable equipment to TE-centres that allows entrepreneurs to access and search market information databases such as Mintel could speed up the task if reports can be exported and attached to an application. Allegedly Team Finland has access to this sort of data and entrepreneurs can contact TF representatives for access (Markkanen 2019), but this approach to the dissemination of information would appear to be sub-optimal as it depends on the entrepreneurs being aware of this opportunity. However, since access to many reports and databases requires licenses, access control is required.

As the municipal agencies generally have a good grasp of the grassroots situation in their area, it might be useful for them to work with Business Finland and compose newsletters of foreign business opportunities segmented by industry, so that they can be sent to interested entrepreneurs in their region. Opt-in would likely be required for GDPR reasons. It might also be useful to include instructions for accessing support services in the newsletter in case the entrepreneurs spot an opportunity but would require more resources for example for logistics, tailoring of payment arrangements and risk management. It is likely that the process could be automated with a templated system which populates the contents from a database based on an industry filter, although this would require a Customer Relationship Management (CRM) system of some kind.

Furthermore, creating a regional repository for market research could be considered. This could help in codifying the tacit knowledge of international students at SeAMK and other organisations as well as make the process of creating new knowledge through market research more meaningful for students. A templatised process could be used to create some uniformity in the system. The research could, in addition to introducing local businesses to the home countries of international students at depth and from various points of view, search for markets that could be expected to be of interest to for example food and manufacturing businesses as these were regionally significant focus industries. Similarly, the research could be expanded to include material for network development.

Exhibitions and trade show participation

The current pandemic has caused problems for expos and trade shows – most of the big events of 2020 were cancelled and uncertainty would seem to continue into 2021 although the vaccination rollout seems to create some optimism in many places.

Team Finland was planning to have a large presence at the 2020 Olympics in Tokyo (Markkanen 2019), but at the time of writing the Olympics have been postponed once and there have been media reports of cancelling them altogether, organising spectator-free sporting events and most recently banning international visitors (The Tokyo Organising Committee of the Olympic and Paralympic Games 2021). The Finnish pavilion opened in October 2020 following the initial delay and lack of Olympics in 2020 (Business Finland s.d.), but there continues to be uncertainty about whether the event is to go ahead, and it would seem there will be no mass event with the kind of footfall that is normally associated with the Olympics.

The pandemic has also driven innovation in communication and content delivery, and in the SO and Ostrobothnia region Viexpo and Xport have been working towards digital solutions that could be utilised as a replacement for a stall or other physical presence at a trade show (Nordic Export; Viexpo; Xport 2021). Some regional businesses with sufficient organisational resources have developed virtual showrooms to get around the issue of not being able to accept external visitors in the usual manner (Prima Power 2020). It is currently not known to the researcher whether businesses are eligible for support for creating a web presence at the alternative digital platforms in the same way that they are when it comes to expo attendance, but this could be explored further.

Data sharing and systems development

The participants noted that GDPR makes the sharing of information between entities difficult. Managing data records and audit data for access control, consent and legitimate interest issues and other aspects of the regulation must be considered at various points. The existence of different data systems means that information exists in different parts of the system, the systems do not necessarily communicate or integrate with each other, and customers i.e. entrepreneurs may have to send the same information to different places multiple times.

The systems used include at least Hyrrä by FFA for rural development applications, ELY digital service channels and application system, Business Finland databases hosted on their website, plus the rest of the resources of the Team Finland network such as materials at the embassies and other network organisations. A transformative change would be to create a single platform or a portal for business support services and information sharing that would have separate interfaces for entrepreneur customers and stakeholder entities. This has been described more thoroughly in Appendix 3 under Integrated business services platform.

In some ways increased digitalisation of businesses could be expected to help save time where some operations could be automated, but for example the Tax Authority has reportedly been planning a free accounting software which has then been met with resistance from paid-for service providers as anti-competitive behaviour and therefore care would need to be taken in the design of solutions (Fredman 2021, Kauppalehti 2021). When it comes to the start-up process, human resources (HR), accounting, tax returns, banking, payments, insurance and funding applications, electronic submission should be possible. Another perk of digitalisation would be better data management, control over operations and the chance to make data-driven decisions; something which was called for by Sorama et al. (2015; 2018).

On the other hand, the services need to be clear and intuitive to use, with instructions. The digital services legislation (A 15.3.2019/306; Ministry of Finance b) requires the materials to adhere to set accessibility criteria, but the ease of use could still be further enhanced beyond the minimum level required. The compatibility of different systems is also a cause for concern.

Staffing solutions

The availability of skilled labour in the region was mentioned by some participants, and this has also been raised in various government documents both in relation to international mobility, attractiveness of the region and (Ministry of Economic Affairs and Employment 2019; Ministry of the Interior; Regional Council of South Ostrobothnia 2019). Labour mobility within Finland is

very limited (Yle 2020; referring to a non–peer-reviewed study by Taloustutkimus market research company) as only 7% of people between 25 and 64 years of age would move for work, and 25% of the same respondents would not move unless it was a must. Reasons for hesitancy were uncertainty concerning the job description, tenure, and remuneration; finding work or study opportunities for the spouse; access to social networks and childcare assistance; and the ease of selling one's house.

Based on independent observation, the practice of employers arranging staff accommodation would not seem to be as common in Finland as it is in some other regions. Most frequently the issue of accommodation provision is discussed in relation to foreign employees, and the Occupational Safety and Health Administration in Finland (s.d.) has minimum requirements set for the accommodation provided.

However, labour mobility solutions for Finnish workers could be shaped following the example of Alavuden Kehitys Oy (Yrityskehitys Fasadi 2019) and Sedu (s.d.). In Alavus secondary and tertiary students are offered free municipal accommodation for six months if they wish to work in a local business for their work experience segment or thesis research. In Ähtäri students at the vocational school Sedu are offered free shared accommodation and various other amenities for the duration of their studies.

While in the Finnish business environment providing staff accommodation for the entire duration of one's employment would seem unrealistic and costly, offering free accommodation for the duration of the new employee's probationary period, i.e. for the first six months could be considered in cooperation with the municipality. The business would get an opportunity to evaluate the employee's performance and learning curve, while the employee does not have to spend extra resources on finding accommodation in an unfamiliar municipality, and both parties have the option to change their mind before fully committing if it seems that the employee is not a good fit. Where the arrangement is found to work for both, the municipality gets a new resident. After the probationary period, the employee can either find different accommodation at their own cost or take over the payment responsibility for their initial place of residence.

This timeframe would seem optimal considering various observations regarding new employee retention as often the first 100 days are crucial for the employee's decision to stay (Hendricks and Louw-Potgieter 2012, 2), and most often the decision to stay with the company is made

within the first six months, with figures of about 20% reported for employees leaving between the first week and third month (non–peer-reviewed data reported in Maurer 2015).

However, lack of onboarding can also increase employee turnover when a new hire is added to the organization, and thus this aspect should also be attended to. It forms a part of the capability building and organizational development of the SME, as it would generally require there to be an induction or standard of process manual and a training programme; few employees can be expected to perform at 100% level without sufficient orientation.

Developing a scheme with interested businesses, municipal business services and SeAMK for getting the manuals in order might be worth the effort, as students of business and other subjects could be utilized in creating manuals for businesses. Basic templates for this can be found online. It could also be considered whether induction trainings could be outsourced for example from temporary labour brokers and other employment agencies, and whether support for financing these could be acquired as part of business development activities.

Capability development

Creation of a milestone-based, modular assessment system for core business capabilities could help business service entities evaluate the development needs of a business on the road to growth and internationalisation. A milestone would be met where the business has demonstrated the creation of an artifact or a system related to the milestone as an indicator of tacit information codified by the business. Support could be acquired for achieving milestones as per the goals and the strategy of the company at the discretion of the support agencies, either from consulting companies, educational institutions, or other sources.

Some milestones, linked to building the capabilities mentioned in the interviews, could include:
- Targets and strategy: mission, vision, strategy, business plan, SWOT;
- Business development: resource audit, investment plan with ROI calculations;
- Market segmentation: target market research, key segments, customer persona, competitor research, VRIO analysis (Value, Rarity, Imitability, Organisation);
- Production management and product development: core product specification, production process specification, plan for scaling production, development plan;

- Marketing and customer experience management: elevator speech, pricing, branding, service process and standard of procedure manual, troubleshooting guide, marketing plan and calendar;

- IT systems, data management and privacy by design: plan for systems administration and contingency management, GDPR-compliant ERP (enterprise resource planning) and CRM system plus CMS (content management system), IT policy, website privacy disclaimer, social media administration, processes for GDPR information requests;

- Sales, distribution and logistics: costing, sales process, logistics planning, affiliate and partnership search, distributors shortlist, partnership agreement templates, updates to ERP if required;

- Tax, accounting and billing: tax registration documents, accounting software (unless included in ERP system), e-invoicing system, setup of reporting and dashboards;

- Risk management, insurance and contingency planning: organisation-wide risk analysis, risk management plan, risk-sharing and insurance plan, contract templates, contingency plan for disruption of operations or systems;

- HR management: job specifications, GDPR-compliant HR system and update of company privacy disclaimer, hiring process, induction process, employment agreements, conduct policies, employee exit process, skills audit and training plan;

- Performance management and continuous improvement: forecasting, performance management system based on goals and strategy, updates to training plan;

- Product development 2: technical requirements, certification;

- Product development 3; Marketing 2: UI/UX design and localisation;

- Business development 2: scope for outsourcing, market expansion plan, board formation and responsibilities, articles of association, strategy development and resource renewal plan.

The list is not exhaustive, and the capabilities would need constant development to prevent the development of core rigidities. For more transformational change aiming towards system overhaul and systematic business development, an ecosystem based on public and private partnerships could be developed around the services required (see Systematic Capability Development Programme in Appendix 3). The price tag for this would be very high though.

At a smaller scale, different kinds of public–private partnerships (PPP) could be considered based on models tested in other regions; especially marketing skills were called for by some

entrepreneurs and stakeholders. In Ostrobothnia (Vaasa) and North Ostrobothnia (Oulu) as well as elsewhere in the country TE-services have worked with educational institutions and private entities to create digital marketing training courses (Hanken School of Economics, Oulu University of Applied Sciences) and other targeted, needs-based training programmes (Saranen Consulting). The attendants on these courses have been unemployed jobseekers, who expand their skills base, take part in work practice in partner organisations and, in ideal cases, find employment in those companies after the course. Following the Covid-19 pandemic at least the Digital Ocean course by Hanken School of Economics has moved online. The North Ostrobothnian team behind the Dimmy 2.0 course at Oulu UAS has created a handbook specifically for sales and digital marketing management at SMEs and micro enterprises and it is used on the course as study material (Blomster et al. 2020).

In the South Ostrobothnia region Finnish Entrepreneurship College (Suomen yrittäjäopisto) has, in 2019, trialled a similar model for digital marketing training in Alajärvi, Seinäjoki and Kauhajoki (Torstai 2019). No data on the performance of the training programme could be found. Meanwhile in 2021 the municipal business development agencies at Ilmajoki and Kurikka and SeAMK started a training programme for entrepreneurs in the area, with funding received from the Regional Council of South Ostrobothnia and Ministry of Economic Affairs and Employment of Finland (Kurikka a). The course can be attended remotely and the materials are online (Kurikka b) – data on the results is currently not available, but if successful, the model could be replicated and scaled in other municipalities.

7.2   Limitations of the study

The study was conducted as part of the Master of Business Administration degree programme with International Business Studies orientation at the Seinäjoki UAS and although it has been commented on by the thesis supervisor, it has not been peer-reviewed as such. Transparency of the process has been a key value in the project, and a self-evaluation of research quality using criteria for qualitative research can be found from the Appendix 4. A summary of the key points can be found below.

Evaluation of the quality of research

The researcher was mindful of the requirement of "rigour, precision, logical reasoning and attention to evidence" (Crossan 2003, 53, in Levers 2013, 3), and as a result of previous studies, the broader phenomenon of "replication crisis" in many fields (see for example

Trafimow & Earp 2016; Loken & Gelman 2017; Mansell & Huddy 2018; Miłkowski, Hensel & Hohol 2018). Furthermore, the claim by Ioannidis (2005; 2007) that most published research findings are false created a daunting starting point for the research using a qualitative method.

Although Ioannidis (2005) was mainly discussing quantitative research, some of the points for concern discussed were also present in the current work, namely replicability, potential for bias regarding reporting, errors, efficiency of data use or conflicts of interest, small size of the study and the flexibility of design regarding the use of non-stereotypical methods. An attempt to avoid conflicts of interest or to suffer from the influence of financial or other interests in the field was the choice to conduct research independently, unattached to any participant organisation – however, this does open the possibility of different kind of bias due to research depending on the work of one researcher. The research is deemed replicable to a fair extent in that it could be attempted with a similar sample, or as a repeated-measures design contacting the same participants later; overall, attempting to replicate the findings with a larger sample should be of interest.

As there would appear to be some convergence of evidence between present research and earlier studies of local entrepreneurs, this was considered encouraging. In addition to the theoretical convergence, the observation that the stakeholders and entrepreneurs used concepts not only shared between themselves, but also with previous research increased faith in the findings representing real phenomena in the regional business ecosystem, and the thinking therein. However, another explanation is also possible: "Claimed research findings may often be simply accurate measures of prevailing bias" (Ionannidis 2005, 0700). To distinguish between prevailing bias and the actual state of reality, further research is required.

For the evaluation of critical scrutiny and active reflexivity, as well as to examine to what extent the "theoretical, cultural and political context of individual and intellectual involvement affects interaction with whatever is being researched" (Alvesson & Sköldberg 2000, 245, cited in Carcary 2009, 13), an audit trail of the various influences in the final research is presented in the Appendix 5.

To assess the methodological as well as the interpretive rigour of the study, an assessment form was filled based on the criteria presented in Fossey et al. (2015, 724–725). This has been included in the Appendix 4 for transparency. Key issues from the assessment are presented below.

Change of original research idea in 2019

The researcher started the process as a somewhat naïve outsider, having spent close to 13 years abroad, accumulating experience mostly from foreign businesses and operations in countries and cities with much higher populations, different social systems, and legislation. It was therefore necessary to increase understanding of the local circumstances before the research could start in earnest. A full ethnography of the experience during the research process was omitted and replaced with the summarised audit trail description.

The original research idea of studying growth-oriented start-up entrepreneurs with an international orientation from Seinäjoki was abandoned after it was discovered that the potential sample size would be close to zero (this was empirically confirmed by the researcher a few months after it had been predicted by Dr Sorama, who acted as the supervisor of the work at the time). Following a few disappointing iterations of data collection pilots, the research idea was changed in the spring of 2019 to focus on internationalisation using a qualitative method. A survey development project linked to Into Seinäjoki was split from the research and conducted separately. The main research plan was formed in autumn 2019 and amended in spring 2020 to accommodate a pandemic.

Sampling

The inclusion of stakeholders in the study was a contingency plan in case no entrepreneurs could be successfully recruited to take part. Their influence in the final sample is noticeable but deemed helpful for better understanding the environment in which the entrepreneurs operate. Some skew in the recruitment success was anticipated during the planning stage, as civil servants in public entities generally were required to answer their emails and return calls, and they could be expected to show interest in the research as domain experts. Motivating entrepreneurs was deemed more challenging to start with as participation in the research was voluntary plus participants were not compensated for their time (2 hours) in any way, which as such may have lowered interest in taking part.

The adequacy of the sample was on the lower limits for the entrepreneurs, but for achieving an overview of the situation the adequacy was deemed good. The sampling strategy could have been systematised by only recruiting companies featured in the Into Seinäjoki brochure mentioned in Methods, but there was a concern this would make the research too Seinäjoki-centric and not sufficiently represent the situation elsewhere in the region, so a variety of

sources was utilised. Utilisation of for example entrepreneur organisations or other network hubs might have also been a viable alternative recruitment strategy – the sparsity of the researcher's personal network in the area may have made the recruitment process more difficult. Whether that is an example of the liability of outsidership discussed by Johanson and Vahlne in their work (2009) is open to discussion. Some of the entrepreneurs approached kindly explained that their business was not looking to pursue international markets in the immediate future and did not consider the topic to be relevant for the time being.

Data collection

The remote process was an ad-hoc development (the planning for this eventuality did commence in the Spring of 2020) and some points for improvement could be observed during the interviews regarding time allocation. The influence of the remote context or the lack of previous contact with most of the participants on the "intimacy" and trust exhibited during interviews cannot be reliably ascertained and introversion/extroversion may also influence the issue. However, the feedback regarding the video meeting solution from the participants regarding the novel approach was largely good except for two interviews where technical difficulties shifted the platform to Teams. The fact that the participants could take part in their own terms, from wherever they preferred was considered a positive.

The time constraint and the practice of drawing paper maps created a problem where there was not enough time to explore the connections of all concepts mentioned. This resulted in the employment of a heuristic ruling so that where no value was included for a concept in any group, these would be excluded from the analysis – in the FCM method a zero influence indicated no connection. The researcher summarised the most connected concepts at the end of the interview to check for agreement but admittedly the lack of visibility to the paper map from the participants' side and the opaqueness of the resulting maps was problematic for determining agreement on the interpretations. Nonetheless, the risk of technical or other problems linked to running both Mental Modeler and the video meeting application had been considered too high and paper deemed the safer bet when it came to managing to conduct a successful interview.

Analysis

The interpretive rigour may have suffered somewhat as the original research plan failed to consider the need to confirm the final interpretations with the participants, and this step had

been omitted from the process. There was also a challenge with keeping the ideas recognisable while anonymising the sources, and this was compounded somewhat by aggregation of responses. Here no comfortable retro-fix to the issue was found, but any future research may want to address this in turn.

The coherence of the reporting of especially the FCM findings suffered to an extent from the large amount of data involved in the analysis. Due to the novelty of the method to the researcher, the original research plan did not fully comprehend the reality of having to make sense qualitatively from close to 90,000 data cells in an Excel matrix. As a result, the findings had to be heavily condensed using emergent criteria based on centrality and outdegree of concepts, which on the other hand left vast amounts of data outside the discussion – this is a concern regarding the efficiency of data use.

The order of the tasks in the online protocol had been arranged based on the subjectively-assessed potential for influence in other sections' responses, so that the survey explicitly looking for problems was included in the end, while other sections were kept more neutral. The open-ended questions were translated and summarised first, followed by the analysis of the numerical export barriers survey data and qualitative empathy maps to prevent the results from each individual method biasing each other. This work was concluded before FCM analysis, which was directed by quantitative indicators such as the number of concepts or centrality.

The influence of novelty

To ensure smooth running of the interview process, interviews were not scheduled until the researcher was comfortable with both the theoretical and methodological aspects of the research. Furthermore, the shift to remote working and the subsequent change in the protocol required unforeseen adjustments to the plan. Clear instructions and standardisation of the process were deemed to help minimise confusion on the part of the researcher or the participants as well as any variability in results. However, this project was the researcher's first time using the FCM and empathy mapping methodology, and despite best efforts this, in addition to the remote interview context, may have influenced the quality and the richness of the data collected.

7.3   Further research

As any decent theory would allow the development of testable hypotheses, different parts of the systemic dynamic capabilities model of small business development would need to be operationalised and tested. Furthermore, more research would need to be conducted regarding the perceptions of SO SME entrepreneurs who are determined not to internationalise or are less enthusiastic about the prospect. Continued exploration of other wicked problems in the area is also encouraged.

Some practical ideas for future research topics would include:
– What results would be acquired if the survey from the Kangas (2018) thesis was repeated in SO region regarding growth orientation?
– What would the export barriers survey look like with a larger sample and careful statistical analysis?
– Can improved access to information change how entrepreneurs spend their time?
– How much time can be saved with enhanced process design in different organisations?

Simple starting points for the last suggestion would involve user testing with both institutional users and target group members. The use of shortcuts, grouping contents into easily perceivable sections and limiting information overload can make pages quicker to browse. Comparing a current application form with a UI-enhanced form might be a good first test, along with website user testing regarding navigation and information search using different tasks as test scenarios. As an advanced version, the entropy flow design from Nair and Reed-Tsochas (2019) could be trialled in measuring the impact of process enhancement.

The SO area has plenty of capability for problem-solving and potential for growth. The general attitude towards doing business would seem to be good – a paying customer is welcome to any business regardless of where the customer is from, but practical issues such as payments, risk management and communication can still get in the way. The local problem-solving ability must now be used for improving the regional information sharing systems and processes so that the local entrepreneurs can spend their time on identifying opportunities and creating profitable solutions to customers' problems both in Finland and abroad.

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APPENDICES

APPENDIX 1. Protocol for the interviews, both groups, translated

APPENDIX 2. Protocol for analysing the FCM inputs

APPENDIX 3. Suggestions for nudges regarding the wicked problem

APPENDIX 4. Criteria used in the evaluation of the qualitative study

APPENDIX 5. Audit trail for the research process

APPENDIX 6. Fuzzy cognitive maps: entrepreneurs, stakeholders, everyone

Appendix 1. Protocol for the interviews, both groups, translated

Entrepreneurs

Thank you for taking part in the research!

? Basic information about the interview process

 Duration of the interview: max 120 minutes

 Interviewer: Eevastiina Hyvönen, MBA degree student of international business at Seinäjoki University of Applied Sciences

The structure of the interview: 4 parts – remote interview and electronic questionnaire sections

 1) Constructing the cognitive map: SME internationalisation (ca. 70 min)

 [Break: as required, ca. 5–10 minutes]

 2A) Drawing of an empathy map of the service path (ca. 10 minutes)

 2B) Open-ended questions regarding internationalisation (ca. 20 min)

 3) Numbering activity in questionnaire format (ca. 10 minutes)

What will the material be used for:

 The intention is to collect real-life views regarding South Ostrobothnian SME internationalisation for the empirical section of an MBA thesis.

Confidentiality:

– The interviewees and their organisations will not be named in conjunction to the answers.

– A permission will be requested for any direct quotes from the material and the source will be reported only as Interviewee X. The language of the thesis will be English, so the material will be translated from Finnish to English.

– Any collection of personal information has been eliminated from the research process according to the principles of the General Data Protection Regulation (EU 2016/679) of the European Union.

 – The responders are not identifiable from the electronic material and the material collected will be held on a password-protected user account

−   This user account will be separate from the e-mail account used for communication

−   Any correspondence and other communications, the research material collected, and the user account created for the collection process will be permanently deleted after the research project has ended, i.e. when the thesis has been published

Stage 1: Drawing a cognitive map:

How does the process work (remotely)

1) Warm-up:

- The interviewer will ask you to reflect on what concepts come to mind on the topic of "small and medium-sized business internationalisation" and will write down the concepts you name.

2) Following this, the interviewer will start mapping out with you how you reckon the various concepts connect to other concepts.

2A) The effect between concepts here can be either increasing or decreasing.

2B) The interviewer will mark down the direction of the effect on the map with an arrow based on which of the two concepts linked by the line you consider exhibiting a stronger influence.

2C) The interviewer will mark down the strength of the effect on the map using the scale below – a decreasing effect is marked with a minus and an increasing effect with a plus sign:

- 100% = decreases very much, always

- 75% = decreases much, usually

- 50% = decreases quite a lot, often

- 25% = decreases somewhat, occasionally

(0 = no influence one way or another, not marked down)

+ 25% = increases somewhat, occasionally

+ 50% = increases quite a lot, often

+ 75% = increases much, usually

+100% = increases very much, always

* You can use either percentages or decimals based on which format is easier for you to envision *

3) The interviewer may ask supplementary questions about the relationships between the concepts to clarify the direction and strength of influence.

4) If you think of more concepts, they can be added to the map at any time.

5) When you no longer can think of anything to add, the map is considered complete and it will be possible to move to the next stage.

Examples of influential relationships on a cognitive map: minus = decreases, plus = increases (the example has used decimals instead of percentages)

The strength of influence in a cognitive map (you can use percentages or decimals as you wish)

Decreases				No effect				Increases
-1	-0.75	-0.5	-0.25	(0)	+0.25	+0.5	+0.75	+1
very much, always	much, usually	quite a lot, often	some-what, occasi-onally	Does not decrease/ increase	some-what, occasi-onally	quite a lot, often	much, usually	very much, always
-				Not marked				+

[Examples recreated and translated from non-Finnish examples in literature – Kosko 1994, Özesmi & Özesmi 2004]

Stage 2A: Drawing an empathy map:

The exercise will go through what a trader does, feels, thinks, and says when they notice they need advice on internationalisation-related questions; what they want to achieve and through which stages do they reach their goal.

Image: Empathy map (Empathy Mapping, example from Nielsen Norman Group) [visual presented in English, omitted here]

Stage 2B: Open-ended questions about internationalisation for small business entrepreneurs

- N.B. 'Internationalisation' is limited here to outbound activity from Finland and 'enterprises' to SME-type businesses (fewer than 250 employees) including microenterprises (fewer than 10 employees).
- There is a total of 11 questions, you can answer those based on your own view of the matter and in your own words.
- If you have any questions or some questions seems unclear, please do not hesitate to ask the interviewer for more information.

1/11 – What do you reckon motivates a small business entrepreneur to pursue internationalisation?

2/11 – What or which things do you think may inhibit the internationalisation of SMEs?

3/11 – Where would you first seek help for questions relating to internationalisation?

4/11 – How do you know to seek help from this entity?

5/11 – Can you recall any other entities who you think could help SMEs when it comes to internationalisation?

6/11 – What sort of help do you think is important for an entrepreneur pursuing internationalisation?

7/11 – How easily do you reckon a small business entrepreneur receives this kind of help when required?

8/11 – Which internationalisation-related issues would you want to receive more information on?

9/11 – From the viewpoint of a small business entrepreneur, how would you develop the internationalisation support services of various public entities?

10/11 – What is your perception of the general atmosphere in South Ostrobothnia when it comes to internationalisation?

11/11 – Describe what you experience when you hear the following statement: "SMEs should be more active in pursuing internationalisation"? (Feelings, thoughts, reactions)

Stage 3: Problems faced by SMEs who wish to pursue exports:

– Select the most suitable alternative based on how significant you consider the problem to be when it comes to developing the export activity of a South Ostrobothnian SME.

– Significance of the problem, alternatives:

0 = I can't say, 1 = not significant, 2 = somewhat significant, 3 = very significant, 4 = extremely significant

1/28 – Size of the organisation limits activities

2/28 – Insufficient information regarding foreign markets

3/28 – Little experience from operating overseas

4/28 – Lack of financial resources limits activities

5/28 – Insufficient information about business opportunities overseas

6/28 – Business is not known overseas

7/28 – No time to search for the required information

8/28 – High cost of selling overseas

9/28 – High cost of shipping

10/28 – Challenges in obtaining financing

11/28 – Lack of incentives from the public administration

12/28 – Variability of currency exchange rates

13/28 – Lack of foreign distribution networks

14/28 – Extra costs arising from overseas regulation

15/28 – Little experience from selling to foreign customers

16/28 – Administration of documents and processes required overseas

17/28 – Difficulty in recovering outstanding foreign claims

18/28 – Different technical requirements and product standards overseas

19/28 – Different customer habits and attitudes overseas

20/28 – Tough competition in foreign markets

21/28 – High rates of duty hindering market entry

22/28 – Experience of language or communication difficulties

23/28 – Bureaucracy in domestic public administration

24/28 – Difficulties in acquiring insurance cover

25/28 – Difficulties in implementing post-sale customer service

26/28 – Insufficient production capacity

27/28 – Situation of global economy

28/28 – Availability of required labour force

Thank you for your time! Please make sure you press the Send button to save your responses.

What happens next?

For you the interview ends here – your help is valuable, thank you for that.

The material accumulating from different entities will be qualitatively analysed which means that this research involves minimal running of numbers and it does not aim to formulate generalisable truths. Rather, the intention is to understand different sides of overseas-bound internationalisation of South Ostrobothnian SMEs and, hopefully, also collect development ideas for the future.

The results will be published in an English-language thesis in the spring of 2021. For the sake of practicality, the interviewer also intends to produce a Finnish-language translation of the work after it has been reviewed and accepted by the school. If you'd like, you can receive a notification when the work has been completed and a link to the electronic version when it is ready for download.

Contact information:

The interviewer is reachable via email at [email] as required – to reduce the need for post-its etc., the use of electronic communication channels is preferred.

The supervisor for the work is Sanna Joensuu-Salo (PhD) from Seinäjoki University of Applied Sciences. She will be reachable via email at [email].

Stakeholder groups

Thank you for taking part in the research!

? Basic information about the interview process

Duration of the interview: max 120 minutes

Interviewer: Eevastiina Hyvönen, MBA degree student of international business at Seinäjoki University of Applied Sciences

The structure of the interview: 3 parts – remote interview and 2 electronic questionnaire sections

1) Constructing the cognitive map: SME internationalisation (ca. 60 min)

[Break: as required, ca. 5–10 minutes]

2) Open-ended questions regarding internationalisation (ca. 30 min)

3) Numbering activity in questionnaire format (ca. 10 minutes)

What will the material be used for?

The intention is to collect real-life views regarding South Ostrobothnian SME internationalisation for the empirical section of an MBA thesis.

Confidentiality:

– The interviewees and their organisations will not be named in conjunction to the answers.

– A permission will be requested for any direct quotes from the material and the source will be reported only as Interviewee X.

– Any collection of personal information has been eliminated from the research process according to the principles of the General Data Protection Regulation (EU 2016/679) of the European Union.

  – The responders are not identifiable from the electronic material and the material collected will be held on a password-protected user account;

  – This user account will be separate from the e-mail account used for communication;

  – Any correspondence and other communications, the research material collected, and the user account created for the collection process will be permanently deleted after the research project has ended, i.e. when the thesis has been published.

Stage 1: Drawing a cognitive map:

1) Warm-up:

- The interviewer will ask you to reflect on what concepts come to mind on the topic of "small and medium-sized business internationalisation" and will write down the concepts you name.

2) Following this, the interviewer will start mapping out with you how you reckon the various concepts connect to other concepts.

2A) The effect between concepts here can be either increasing or decreasing.

2B) The interviewer will mark down the direction of the effect on the map with an arrow based on which of the two concepts linked by the line you consider exhibiting a stronger influence.

2C) The interviewer will mark down the strength of the effect on the map using the scale below – a decreasing effect is marked with a minus and an increasing effect with a plus sign:

- 100% = decreases very much, always

- 75% = decreases much, usually

- 50% = decreases quite a lot, often

- 25% = decreases somewhat, occasionally

(0 = no influence one way or another, not marked down)

+ 25% = increases somewhat, occasionally

+ 50% = increases quite a lot, often

+ 75% = increases much, usually

+100% = increases very much, always

* You can use either percentages or decimals based on which format is easier for you to envision *

3) The interviewer may ask supplementary questions about the relationships between the concepts to clarify the direction and strength of influence.

4) If you think of more concepts, they can be added to the map at any time.

5) When you no longer can think of anything to add, the map is considered complete and it will be possible to move to the next stage.

Examples of influential relationships on a cognitive map: minus = decreases, plus = increases (the example has used decimals instead of percentages)

The strength of influence in a cognitive map (you can use percentages or decimals as you wish)

Decreases				No effect				Increases
-1	-0.75	-0.5	-0.25	(0)	+0.25	+0.5	+0.75	+1
very much, always	much, usually	quite a lot, often	some-what, occasi-onally	Does not decrease/ increase	some-what, occasi-onally	quite a lot, often	much, usually	very much, always
-				Not marked				+

[Examples recreated and translated from non-Finnish examples in literature – Kosko 1994, Özesmi & Özesmi 2004]

Stage 2: Open-ended questions about internationalisation to the stakeholders:
- N.B. 'Internationalisation' is limited here to outbound activity from Finland and 'enterprises' to SME-type businesses (fewer than 250 employees) including microenterprises (fewer than 10 employees).
- There is a total of 12 questions, you can answer those based on your own view of the matter and in your own words.
- If you have any questions or some questions seems unclear, please do not hesitate to ask the interviewer for more information.

1/12 – How would you explain the role of your organisation among South Ostrobothnian entities when it comes to SME internationalisation?

2/12 – What other industry support organisations within the South Ostrobothnia region you consider important for your work?

3/12 – How well do you think the support organisation network works as a whole?

4/12 – What questions (3–5 most common ones) typically bring local small business entrepreneurs to meet with your organisation?

5/12 – How do the people contacting the organisation usually find out about the portfolio of offering?

6/12 – What things you consider to be the most important contributors to successful expansion to international markets when it comes to SMEs?

7/12 – What things do you consider as inhibitors to seeking international markets in the region (South Ostrobothnia)?

8/12 – What support resources do you consider as the most significant help for local SMEs who are planning expansion to international markets?

9/12 – What sorts of supplementary measures or resources would there be a need of?

10/12 – What sort of ”homework” a business should have done to get started on the service path?

11/12 – What different stages does the SME service path usually have?

12/12 – What sort of information does the organisation use to develop its activities?

Stage 3: Problems faced by SMEs who wish to pursue exports:

- Select the most suitable alternative based on how significant you consider the problem to be when it comes to developing the export activity of a South Ostrobothnian SME.
- Significance of the problem, alternatives:
  0 = I can't say, 1 = not significant, 2 = somewhat significant, 3 = very significant, 4 = extremely significant

1/28 – Size of the organisation limits activities

2/28 – Insufficient information regarding foreign markets

3/28 – Little experience from operating overseas

4/28 – Lack of financial resources limits activities

5/28 – Insufficient information about business opportunities overseas

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13/28 – Lack of foreign distribution networks

14/28 – Extra costs arising from overseas regulation

15/28 – Little experience from selling to foreign customers

16/28 – Administration of documents and processes required overseas

17/28 – Difficulty in recovering outstanding foreign claims

18/28 – Different technical requirements and product standards overseas

19/28 – Different customer habits and attitudes overseas

20/28 – Tough competition in foreign markets

21/28 – High rates of duty hindering market entry

22/28 – Experience of language or communication difficulties

23/28 – Bureaucracy in domestic public administration

24/28 – Difficulties in acquiring insurance cover

25/28 – Difficulties in implementing post-sale customer service

26/28 – Insufficient production capacity

27/28 – Situation of global economy

28/28 – Availability of required labour force

Thank you for your time! Please make sure you press the Send button to save your responses

What happens next?

For you the interview ends here – your help is valuable, thank you for that.

The material accumulating from different entities will be qualitatively analysed which means that this research involves minimal running of numbers and it does not aim to formulate generalisable truths. Rather, the intention is to understand different sides of overseas-bound internationalisation of South Ostrobothnian SMEs and, hopefully, also collect development ideas for the future.

The results will be published in an English-language thesis in the spring of 2021. For the sake of practicality, the interviewer also intends to produce a Finnish-language translation of the work after it has been reviewed and accepted by the school. If

you'd like, you can receive a notification when the work has been completed and a link to the electronic version when it is ready for download.

Contact information:

The interviewer is reachable via email at [email] as required – to reduce the need for post-its etc., the use of electronic communication channels is preferred.

The supervisor for the work is Sanna Joensuu-Salo (PhD) from Seinäjoki University of Applied Sciences. She will be reachable via email at [email].

Appendix 2. Protocol used for analysing FCM inputs

- Maps were drawn by hand; this can be avoided by drawing maps directly on Mental Modeler or other software.
- Maps were transcribed into Mental Modeler, backed up using software's mmp-format and exported for analysis in Excel in xls-format; a screenshot of each individual map can also be exported from the web application.
- Default metrics for raw data were recorded for reference (basic matrix properties, out/indegree, centrality found in Preferred States and Metrics).
- Each map was imported to Excel in the matrix format as a new sheet in a workbook.
  - It would appear to be possible to also handle the combination of matrices with R if one is fluent in the statistical computing language; see steps in Rdrr.io (2019).
  - Similarly, the estimation of convergence can be mapped out with R; see Dikopoulou & Papageorgiou (2017) .
  - An advanced account on simplification, merging and division of maps can be found from Miao et al. (2002).
- For analysis, the matrices were formatted as follows:
  - The header text in top row (x-axis) rotated up and the text wrapped for improved legibility.
  - Header text in the first column was wrapped for improved legibility.
  - Blank cells in the data area were populated with zeroes (find/replace blanks with zero, rounding to including two decimals).
  - Conditional formatting was applied to the data area:
    - Highlight cells greater than 0.125 with yellow (custom format);
    - Highlight cells less than zero with light red fill and dark red text.
- The matrices were printed out (fit to page as far as it was legible, usually up to 30%).
- The map with the highest number of concepts and connections was selected as the basis for analysis and copied to a new sheet in Excel.
  - It is possible to also proceed in numerical order within group, the map with highest number was selected for purely convenience.
- Each subsequent matrix was manually highlighted on paper one by one with two colours: green for shared concepts, orange for unique concepts not mentioned in previous map(s). The number of total concepts as well as the number of concepts in each of the two groups was recorded for reference.

- Some discretion is required in this step, as the similarity of phrasing is not always 1:1 (synonyms for the same phenomenon) while adding them as separate concepts would create unnecessary bloat to the size of the map.
- The wordings of shared concepts marked with green were compared to existing ones recorded on the map – where the similarity was not 1:1 the concept in the map was amended with the alternative phrasing included after semi comma.
  - The values for all columns intercepting with the horizontal row of the concept were recorded in the matrix.
  - To prevent the value of any one cell exceeding 1 (positive or negative), the values for shared concepts were averaged with the formula $=(Value_1+Value_2+…Value_N)/N$; the process of addition or subtracting negative values in Excel would require extra brackets.
- Concepts marked with orange were added to the sheet after the last concept from the previous matrix and the new data area first populated by zeroes before the values from the map were added to the total matrix from horizontal lines.
- It is recommended that the outer edges of each matrix in Excel (novel concepts) are highlighted with a fill colour as they are added to maintain cohesion of the matrix but enable one to see at a glance the number of new concepts per map; in this work only the edge of most recent matrix was highlighted which in retrospect was inconvenient for later assessment.
- When all maps for a group have been thus recorded, the resulting sheet must be transformed for import into Mental Modeler.
  - Find/replace zeroes from the data area with blanks.
  - Remove wrapping from top row and first column.
  - Delete any accidentally entered data from the sheet after the last data row and last data column.
  - Save as comma-delimited csv.
- For some reason, the data in some columns seemed to be recorded as Text or using other identifiers instead of Number, which seems to have caused an issue with the Mental Modeler data import – only the headers of the matrix must be identified as Text. In the Office16-version of Excel the problem was rectified as thus:
  - Create new sheet following the one used for csv.
  - Select Data – Get Data – From Text/CSV, selecting the file recently saved.
  - Load file with comma selected as a delimiter; the dataset will open as a table.

- Open the file with Power Query Editor.
- Review the data contained in the formula = Table.TransformColumnTypes.
    - Headers must be recorded as (#"Promoted Headers",{{"Column1", type text}
    - Any data after that must contain the name of the column header in quotation marks, and the data marked as number, for example: {"Sales abroad (+)", type number}
    - Review the formula, amend as required and select Close & Load, then re-save the csv.
    - This corrected the "data not comma delimited" error given by Mental Modeler when trying to upload the unedited csv-file after first saving it.
- Import the combined map to Mental Modeler and record the metrics from Preferred States and Metrics.
    - Mental Modeler will also automatically create a visual representation of the map, but with high numbers of concepts the informativeness of the map would appear to suffer.
        - For mathematical qualitative aggregation and modelling exercises, see Dubois, Prade, and Rico 2016.
        - This work focused analysis on the numerical centrality and outdegree values, forming the basis for rank-ordering the concepts, which were divided into categories using themes arising from the data.
- The process described above can and has been used also for combining discrete aggregated maps, although the size of printouts can be expected to be very large.
    - Printing out just the first column of the matrices to be combined can be sufficient, as the row header can be used to assess shared and unique concepts.
    - The values for those concepts are available in Excel.
        - Proceeding horizontally along the row, record the concept and value from each intercept point of the y-axis with the x-axis.
        - Record these values in the aggregated matrix as before.
            - Add the values to the formula for shared concepts.
            - Add novel concepts to the matrix and add the intercept values for each concept that it influences.
- Proceed with the resulting map as above regarding csv transformation, and import the file to Mental Modeler to record the key metrics for the map .

– A screenshot will be available but the legibility and the informativeness of the auto-generated map may be questionable.

Discretion is recommended in the use of this protocol, and it might be a good idea to run a small pilot to test the process described here with a few maps to see whether problems arise before going ahead with a bigger project involving a multitude of maps. When combining the maps, it seemed that a map containing up to 100 concepts was still mostly legible in A3 size, but after that the speed of processing and the legibility of the map started to suffer. The manipulation of the map containing closer to 300 concepts crashed the internet browser in which Mental Modeler was running several times, and getting a screenshot of the same map through Mental Modeler without the request timing out also required a few attempts.

The process was developed through trial and error in the absence of an R-free step-by-step protocol for processing matrix data resulting from the use of the FCM method, and in all likelihood there are easier ways to acquire the same or an even better end result. Shortcut and improvement suggestions to the protocol are a welcome even after the conclusion of the work.

Appendix 3. Prototype sketches for some of the suggestions described

Online service path development

Based on a small-scale empirical investigation conducted here regarding the support application processes administered by ELY and FFA, many of the digital funding and programme applications would seem to reside inside online application portals. One can see a clear rationale for this, such as saving paper and the environment. However, this does not take into the account people's need to spend time preparing their paperwork, look for information, ask for help and potentially having to move from point A to point B during this process. Having the option to download the application form and any attachments for example to a tablet in pdf-format for the process of getting one's details in order would solve this issue. Once prepared, the documents could also be (securely) emailed to business service providers for context in case they do not have access to the application system, which would get around the issue of having to explain the same issue multiple times to different parties.

In many cases it was not immediately obvious which documents were needed by the entity. The Yritystulkki collection of business planning tools does contain several templates and calculators that can be used for the homework part but finding there depending on the entity approached may require some legwork. The portal would seem to be developed and maintained by a private company, and it was not clear if this is a reason for not linking to it from the websites of some public entities.

ELY:

The Yritystulkki support portal would appear to be used by several South Ostrobothnian municipal business service entities (Yritystulkki a; b; c; amongst others) and it contains a wide range of instructions, workbooks, document templates, calculators and other tools. However, SO ELY which coordinates many of the application processes does not link to it from the pages concerning growth (ELY b) or internationalisation (ELY a), while it is also not explicitly summarised anywhere what documents are needed for submitting the application, which is to be submitted electronically through a separate portal. Currently it would seem that the entrepreneur must navigate the site and various pages to find the section concerning the issue they want to address, phone the contact person to find out what is needed for proceeding and preparing an application, find the templates for the documentation and fill those, then contact the services again prior to submitting an electronic application.

Simply 1) formatting the ELY website contents differently with links and HTML anchor tags, 2) listing different support types at the top of the page and 3) allowing people to jump to the section they need would save them the trouble of having to scroll through the entire page and sections of information not relevant to their query, which can be expected to take even more time on a mobile device.

FFA:

The FFA site does have pages with shortcuts at the top of the page for frequently used sections, as well as links to the application documents, instructions for filling these, and in some cases a list of supplementary documents required including the templates for those. It was observed that the project funding and business funding documents were split to different sections: Communities (FFA b) and Businesses (FFA c).

Moving from the home page of the organisation to the Business section, Funding and Development, and to Rural Business Development Funding (referring to Finnish-language pages; information available in English is much more limited or not available at all), one is first advised to contact ELY or local Leader groups for information, and the link to the Business Support Documents on the right-hand side of the page would lead to a page that only has a business grant application form. The application form mentions a list of documents that must be submitted as attachments to the actual application, but no templates for these are supplied (these could be found from Yritystulkki).

The Documents page in the Communities section had a longer list of options, as well as templates for applications. Although useful, the list seemed a bit overwhelming and breaking it up with spaces might help people process its contents more effortlessly.

Overall, the processes of the two entities could be developed further to include templates to all the paperwork required, so that these can be prepared before one begins to submit the application to Hyrrä (FFA) or the ELY application processing system. Furthermore, grouping contents into manageable sections and using quick links with anchor tags for internal navigation within a page could make the sites more navigable. Visual representations of the process could also help people gauge the different steps required and get an idea of how much time and effort they have to dedicate to the project.

Integrated business services platform

When integrating the different information systems and services into one platform, Team Finland could be used in the name to emphasise that everyone is on the same boat for the purpose of improving the competitiveness of Finnish companies and products; the utilisation of memes was recommended by Waddock et al. (2015), and Team Finland would seem like a good meme for the purpose of creating a united front for business services.

The platform would allow institutional users to:
– pull anonymised financial data from Tax Authority databases (tax data, income register) in addition to registration data from the Finnish Patent and Registration Office for the purpose of tracking the number of different types of businesses in operation and the overall performance in the region in almost real time;
– process applications and forward customer cases to other entities for the purpose of accessing other types of support;
– share information about events by region or industry between other institutions in the area, which the others can also share to their entrepreneur networks;
– have a central repository for digital training materials on various topics for entrepreneurs which can be easily updated and accessed remotely.

The platform would allow business users to:
– Use one customer account to access all services in the support network (how this would deal with serial entrepreneurs and changes of ownership would need to be solved).
– Consent to processing of their data based on their customer relationship with the support entities for different purposes, with an opt-in mechanism for those.
– Access recordings of workshops, trainings and events for remote learning at their own pace;
– Allow the business users to submit applications for various kinds of subsidies and interventions from the same place, while the applications could be routed to their respective agencies at the back-end. Similarly, when it comes to development activities, they could update milestone reports regarding inputs and outputs for tracking purposes at set intervals.
– Avoid having to manually enter data into applications where this data already exists in another system through integrations with (various types of) accounting software.

As per GDPR (2016 EU regulation), personal data collected in electronic systems should be portable from one system to another, giving entities wishing to harmonise data systems some leverage in negotiations with developers.
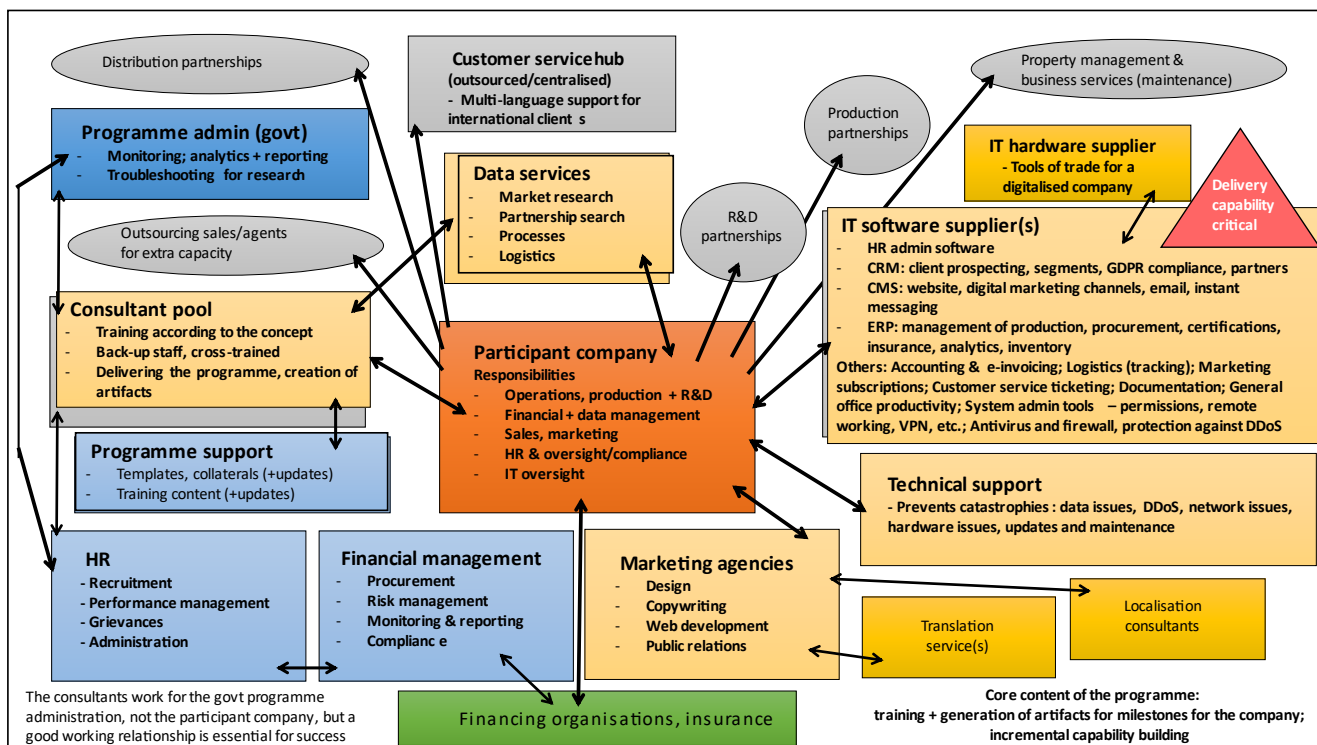
– Access market data reports after authentication; in a past internationalisation event a representative from Team Finland noted that the network has access to for example Mintel reports on various industries and markets (Markkanen 2019).

– Review country and market information provided by embassies in different regions and to contact embassies for further assistance on specific issues.

– Review the business opportunity database maintained by Business Finland and, potentially, receive notifications when a call for proposals is added concerning their industry or speciality.

– Search for potential partner organisations for projects within the system.

The creation of such system would require both will and significant project management capabilities from the government entities. Realistically, the Ministry of Finance might be the best project sponsor, although the Ministry of Economic Affairs and Employment and the Ministry of Transport and Communications would also need to be closely involved, along with other ministries involved in the internationalisation process. User-friendliness, customer-centricity, and security must be core principles in the development and maintenance work.

The involvement of multiple entities does create difficulties not only for project management but also for information security and privacy, which is why the development work would need to be assigned to a team with a track record of successful integration projects involving massive amounts of sensitive data, as they can leverage their lessons learned in this project.

Systematic Capability Development Programme

The draft for the systematic capability development programme is built on the premise expressed by participants in the interviews that businesses would need extra pairs of hands, knowledge, and administrative expertise to be able to grow their business systematically and towards international markets. Realising such a programme at scale would require significant investment, potential reorganisation, cooperation and continuous development from the government.

Distribution partnerships

Customer service hub
(outsourced/centralised)
- Multi-language support for international client s

Property management &
business services (maintenance)

Programme admin (govt)
- Monitoring; analytics + reporting
- Troubleshooting for research

Production partnerships

IT hardware supplier
- Tools of trade for a digitalised company

Delivery capability critical

Data services
- Market research
- Partnership search
- Processes
- Logistics

R&D partnerships

IT software supplier(s)
- HR admin software
- CRM: client prospecting, segments, GDPR compliance, partners
- CMS: website, digital marketing channels, email, instant messaging
- ERP: management of production, procurement, certifications, insurance, analytics, inventory
Others: Accounting & e-invoicing; Logistics (tracking); Marketing subscriptions; Customer service ticketing; Documentation; General office productivity; System admin tools – permissions, remote working, VPN, etc.; Antivirus and firewall, protection against DDoS

Outsourcing sales/agents
for extra capacity

Consultant pool
- Training according to the concept
- Back-up staff, cross-trained
- Delivering the programme, creation of artifacts

Participant company
Responsibilities
- Operations, production + R&D
- Financial + data management
- Sales, marketing
- HR & oversight/compliance
- IT oversight

Programme support
- Templates, collaterals (+updates)
- Training content (+updates)

Technical support
- Prevents catastrophies : data issues, DDoS, network issues, hardware issues, updates and maintenance

HR
- Recruitment
- Performance management
- Grievances
- Administration

Financial management
- Procurement
- Risk management
- Monitoring & reporting
- Complianc e

Marketing agencies
- Design
- Copywriting
- Web development
- Public relations

Translation service(s)

Localisation consultants

The consultants work for the govt programme administration, not the participant company, but a good working relationship is essential for success

Financing organisations, insurance

Core content of the programme:
training + generation of artifacts for milestones for the company; incremental capability building

The programme at concept level is organized as follows:

1) The programme follows a modular concept which follows the same structure in every organization taking part – this is independent of industry, as the aim is to build basic capabilities that would be needed in every company taking part, enabling it to pursue growth effectively.

2) The programme management is overseen by a government entity; the Ministry of Economic Affairs and Employment of Finland would seem like a good "programme sponsor" candidate, and the programme office could be housed within ELY or the Business Finland organization.

3) The programme office (the home of programme administration) takes care of monitoring, analytics, and reporting, and provides HR and financial support for the programme. It collects lessons learned from the participant companies and trainers and works with the programme support team to further develop the programme contents and individual modules.

The programme would use a tracking tool that records the starting point and the progress of each participating company. The data collected can be used to evaluate the effectiveness of the programme – it can form the basis of an experiment where programme participants and their business outcomes are compared against matched controls who do not take part in equivalent development activities. The milestone-based system can also tolerate drop-offs

from the programme in case where businesses do not complete all modules, and the data can be anonymized for later research purposes where the participants wish to leave the programme and no longer consent to the processing of their personally identifiable data.

4) Companies can apply to take part in the programme in which case they will be allocated a consultant/other professional as a trainer. Some cost sharing may be required to ensure commitment, within reason. The participating companies are responsible for taking care of their internal day-to-day operations, general research and development, financial and data management, legal compliance, sales, marketing, as well as HR and IT management while they are taking part in the programme. The government entity or the trainer will not be responsible for these, as they simply work towards raising the general level of capabilities in the business and developing its operations in a systematic manner.

5) The principle of the training is systematic change management through mini-projects (modules), where small changes are introduced to the operating procedures and systems of the business to get it to operate in a more efficient manner. Such changes would include digitalisation of the business and integration of various systems for data-driven management, implementation of professional HR management processes and strategic performance management, introduction of external board members, process optimisation and customer experience development. The programme organisation supports the business in implementing updates as required while they are participating in the programme.

The trainer goes through the contents of the module with the entrepreneur or other relevant party in the business, explains the content and the rationale for the changes that must be made to implement the learning from the module in the context of the business, and gets the sign-off from the entrepreneur for their implementation. Once the change is in operation, a milestone is recorded to the progress tracking system, and preparation for another module can begin.

6) The trainer works for the programme instead of the participant company, and thus their recruitment, training and performance management is taken care of by the government entity. The entrepreneurs or the CEO of the company would take part in the evaluation of the trainers by giving feedback. Over time, as the trainers become familiar with the organization, they can also offer holiday cover to the entrepreneur – for a small fee.

7) The trainers receive programme support including training content and templates for each section that they are to go through with the company. The programme support office also takes care of updates to the materials and communicating these to the trainers, who then take care of updating these in the company.

8) The HR support office mainly looks after the governmental programme organization but can also consult on the development of HR-related modules in the programme.

9) The financial management office supports the programme administration in monitoring and reporting activities, as well as in risk and compliance management. They can also consult on the development of risk and finance -related modules in the programme.

It is also possible to utilize this office in centralized procurement and have it co-ordinate the tender evaluation process (for example procuring hardware or software for all participants). In this case the companies could choose not to rely on centralized procurement where it is part of a module and take care of organising the equivalent item or system by themselves, but it is thought here that for basic software such as HR management system, ERP, CMS or CRM economies of scale and the use of government muscle in procurement could offer individual participant companies better deals than if they had to negotiate the license terms on their own.

10) Marketing agencies, research organisations (data services), technical support service providers and IT software supplies are included in the ecosystem – either the government can negotiate deals for programme participants, or they can source their own service providers after consultation with the trainer regarding business requirements.

11) Distribution partnerships can be sought by the company once the options, requirements and other details have been investigated by the trainer in cooperation with the data services team. Later down the line, the company can also outsource sales and customer service agents, R&D and production support, and property management services from external service providers.

The participation of businesses in the programme would have a start and an end. A handover would take place at the end of the milestone track, so that the company takes over the full responsibility for maintaining their systems and updating them while scanning the environment

for new opportunities. By this point the organisation should have a vast cache of information and systems in place for controlled growth.

A price tag was not estimated for the process as it would likely depend on the programme contents as well as the time it takes each company to get through the modules. Depending on the industry, the size of the business in the beginning of the programme and the growth opportunities available, these could be expected to differ significantly. In some instances (ELY subsidies) a day of consulting has been calculated to cost €1,300 plus 24% value-added tax (VAT), so around €1,600. Businesses are normally expected to pay 25% of the consulting fees (Huhtanen-Pitkänen & Säisä 2020), so the size of the price tag can limit participation.

A highly optimistic estimate for the time taken by getting through all the sections listed earlier in the Capacity Development section is 40 days of uninterrupted work. A realist would add a buffer of at least 30% to this, stretching the duration to around 50 days and even then the estimate would assume that complicated projects such as IT systems integration and market research to go swimmingly. However, using the figure of €1,600 for cost per day, the programme would cost €80,000 per business just in consulting fees and of these €20,000 would be payable by the company – and even then there is no guarantee that the business would be successful or sustainable. An instalment-based repayment schedule might need to be incorporated into the design for businesses to be able to spread the costs over a longer period of time, while the tax implications of the programme should also be considered.

For evaluating the worthwhileness of the programme, the present and future value of different artifacts and systems for the business would need to be quantified, which is not all that straightforward and not attempted here. Can a "giant leap" in business productivity, profitability and growth be expected to be an outcome of programme participation, and how can the government expect to benefit from the exercise? This would need to be tested with a small-scale pilot, which already could be expected to be rather costly due to the time and effort required by the creation of the training materials and training of the consultants in the concept and the process.

Appendix 4. Criteria used in the evaluation of the qualitative study

NB. The structuring and the questions used in the assessment are verbatim reproductions from Fossey et al. (2015: 724–725)

A) Methodological rigour
1. Congruence
1.1. Research design
1.1.1. Does the chosen methodology and philosophical approach "fit" the research issue?
Yes. FCM and complex adaptive systems, design thinking: motivation given earlier (see Methods and Conclusion – Limitations of the study) Empathy mapping, design thinking: to understand and address issues systematically Open questions, design thinking: shortcut selected to gather views from different participants instead of holding a discovery workshop Export barriers, design thinking: the survey has been combined and translated from previous literature studying SME internationalisation in different countries using similar surveys, although here the measure is qualitative rather than quantitative. Although the research started from the knee-jerk reaction that there must be something standing on the way of internationalisation, there is no certainty of this being the case – which is why the earlier discovery measures are included. The researcher is aware of the bias unwittingly introduced to the design by their own initial reaction to the phenomenon and aims to suspend judgment until the results are in. As there is no initial idea of whether there really is a problem or what the problem might be, the survey is a tool for discovery (panning for gold without a clear idea of whether the soil might have any gold in the first place is a fitting metaphor for the process here): the idea is to see whether participants do in fact think any of the issues mentioned in the survey are of importance in the SO region. The study does not aim to verify or reject hypotheses as such, as the tool has no statistical power to speak of.
1.1.2 Do the methods used "fit" within the chosen methodology?
Yes. Complex adaptive systems and wicked problems can be explored with design thinking methods, although not all methods selected are typical of the approach (FCM, the survey used). It is thought that the complex adaptive systems research methodology is cross-disciplinary and flexible, accommodating both quantitative and qualitative methods. The flexibility of the design may introduce bias into the study, but it is hoped that the process of triangulation produces results robust enough for reporting.
1.1.3 Is the study conducted in a way that is congruent with the stated methodology?

Yes, regarding both the employment of a qualitative approach as well as a systemic approach. Triangulation was used as a way to see whether the findings from different methods are aligned; the small dataset and lack of statistical testing does create the problem that the findings could be the result of chance variation and would need to be confirmed with further experimentation.

The study was conducted in circumstances novel to both the researcher and the participants (remotely), which did create some issues regarding the process – the empathy map may have suffered from the remote format, as the responses from the entrepreneurs were scant. It is also possible that the procedure used was not optimal and instead of eliciting responses from the participants to save time the researcher would have interviewed and observed them more extensively as they interact with stakeholders; this was not feasible within the bounds of this study. As the researcher had been making notes regarding salient comments made during the interviews, where they referred to interactions that fit the empathy mapping scenario, these were included in the empathy maps – however, as noted before, the agreement with interpretations was not confirmed with the participants which is a problem affecting the study overall.

The issue with the FCM section (no visibility to participants, no confirmation of interpretations) has been reviewed elsewhere (see Results and Conclusion – Limitations of the study). The attempted ad-hoc fix to address the issue of vastness of data and focusing of the reporting of the results by applying the Pareto principle to the findings was abandoned after an unsuccessful trial run and not reported separately to save space. Other data-collection methods did not seem to suffer from the problems mentioned above, as the data there consisted of participants' self-reports which left less room for interpretation.

Records of the process have been kept for transparency, although the interview recordings and raw response data collected from participants will be destroyed following the conclusion of the research. The processed data has been anonymised and will be kept for any potential audits of the process – if it is not needed, it will be destroyed too.

2. Responsiveness to social context

2.1. Emergent research design

2.1.1. Was the research design developed & adapted to respond to the real-life situations with the social settings in which it was conducted?

Yes. Remote protocol developed and implemented as in-person interviews were not recommended; see earlier comments.

Study design was developed between 2018 and 2020 to fit the local environment; in the absence of born-global start-ups the focus was shifted to the regionally important small business category, and there to companies wishing to internationalise. Businesses who were not willing to internationalise were also considered for the sample, but their identification proved difficult, and the research was focused to businesses with willingness to internationalise and stakeholders assisting them.

2.2. Sampling, data gathering and analysis

2.1.1. Were the sampling strategies suitable to identify participants and sources to inform the research questions being addressed?

Yes, especially in retrospect. Stakeholders were incorporated in the study as a risk mitigation strategy when the research design was formulated; there were concerns already in 2019 that it might be challenging to recruit enough entrepreneurs for the study. In retrospect this was a good call, as the soft lockdowns, cancellation of live events and other 2020 phenomena did nothing to facilitate recruitment. As small and microenterprises are not as person-centric as for example sole proprietorships, and as both groups of participants deal with the focus entity i.e. SO SMEs and the phenomenon of interest i.e. SME internationalisation, the solution was deemed appropriate.

The wish was to get a variety of SMEs from around South Ostrobothnia to take part, so a variety of sources for shortlisting was used – the success of recruitment was not amazing but both rural areas and urban areas were represented in the final sample. Focusing sampling simply on the businesses featured in Into Seinäjoki brochure might have been a workable alternative solution if a good range of businesses from around the region could have been achieved.

3. Appropriateness

3.1. Sampling

3.1.1. Were the sampling strategies suitable to identify participants and sources to inform the research question being addressed?

Arguably yes. The choice to use online materials and physical publications (Into Seinäjoki brochure inter alia) for candidate shortlisting was a 2020 plan B, after the initial, less focused shortlist of regional growth enterprises – which had been drawn up in the autumn of 2019 – was abandoned due to uncertainty concerning the current status of the company and it was decided that a safer, more straight-forward option was required to ensure that the research could be finalised without hiccups in uncertain conditions. A new version of the shortlist was generated in the early autumn of 2020 using the criteria described in detail in Methods.

The ideal number of participants was set to 8+8, with the lowest possible limit set to 5+5; the actual total was 5+12. Two of the entrepreneurs took part in the interview but in one case no response to open-ended questions was received and in the second case no electronic response form was submitted. This caused the data for open-ended questions and export barriers to be more limited in the entrepreneur group, which was noted along with the findings. The stakeholder responses bulked up the data and ensured saturation was reached at the overall level.

3.2. Data collection

3.2.1. Were suitable data gathering methods used to inform the research question being addressed?

Arguably yes. Initially the FCM was intended to be the sole method included in the study, but the researcher began to doubt its sufficiency as a standalone source; also, as the study was not a business-linked development project with obvious practical applications, there were concerns about the usefulness of the research if it was kept largely theoretical

at the system level. For this reason, the design thinking approach was incorporated into the research design – this served several purposes: chance to triangulate between methods, a richer understanding of the local ecosystem, to empathise with the experience of both entrepreneurs and stakeholders, and if the system would turn out to require nudging in a different direction, get pointers on whether there were distinguishable problems embedded in the status quo. All methods were combined into a whole (see comments on the rationale in Conclusion – Limitations of the Study) as having to coordinate multiple iterations was not deemed practical with the resources of only one person. It was hoped that perhaps some organisation might later take up the survey now that it had been translated and develop it further to work as a quantitative tool to gauge the sentiment regarding export barriers over time.

The remote format complicated matters somewhat (see earlier comments in 1.1.3.), but the research was conducted as well as possible in the Finnish pandemic conditions. Privacy and participant anonymity were considered at every point of the process, but the need to move to electronic data collection came with more GDPR implications regarding personal data and its transfer and finding suitable yet free tools for managing the whole process was challenging. Information about Whereby was received from an acquaintance, correspondence with participants was done from a designated email account, and a single-use account was registered for electronic research data collection with Google Forms; as participants were not required to log in or register personal information to use Whereby or the form, they were deemed a workable solution. Participants were given instructions for using Whereby and the session-based camera and microphone permissions it required. Cookies were not discussed with the participants; GDPR jargon was kept to a minimum as in the pilot it seemed to alarm rather than to reassure the participant who took part in testing of the protocol and the instructions.

The issue of drawing FCMs on paper had its downsides – if the participants had been in the same room, they could have examined the map and noted their agreement or disagreement as it the map was created. A few attempts to remotely assess agreement with the interpretations during the interview were made but taking a picture of the map and sending it to the participants seemed to mainly bewilder them and displaying the map through a low-resolution web camera was not a successful strategy either. The failure to incorporate a step in the process where the participants would assess the findings was missed at the time of sending the invites and explaining the data gathering process as well as the time required, and contacting the participants later was expected to yield a response rate so low that it was not attempted.

4. Adequacy

4.1. Sampling

4.1.1. Have sufficient sources of information been sampled to develop a full description of the issue being studied?

Yes. Re: empirical part of the study, the number of entrepreneurs was lower than hoped at the lowest bounds of acceptability; lack of enthusiasm was expected to an extent as the time required was not insignificant, the researcher was completely unknown to most before the first contact and the participants were not compensated for their time and thus participation depended on the goodwill of generally busy people. A total of 5 participants

per group was deemed sufficient ahead of the sampling, and the inclusion of stakeholders more than made up for the low recruitment numbers in the other group.

The aim was to achieve a three-dimensional 360° view of the subject. The lengthy literature review stage, the "participant-observation" type of curious engagement with the local ecosystem on the side, and the design thinking orientation helped towards this goal as they all contributed to the development of research questions and holistic analysis of the materials.

4.1.2. Is a detailed description of the people who participated, how they were sampled, their levels and types of participation provided?
Yes, there is a summary of participant information provided in the thesis. The timeline of the audit trail also provides information on other people and entities who have influenced the research process from start to finish.

4.2. Data gathering and analysis

4.2.1. Is there a detailed description of the data gathering and analytical processes followed?
Yes, and the appendix has supplementary information where the level of detail was not appropriate for the main body of work. Data gathering would not seem to be the concern; a bigger concern is the amount of data gathered, and managing to present it in a meaningful, insightful manner – efficiency of data use in relation to data gathered is not optimal, as there is likely enough information for several studies from different points of view beyond the current research questions covered.

4.2.2. To what extent did analysis inform subsequent data gathering in a cyclical (iterative) manner during the research process?
Good. The timeline in the Appendix 8 contains information on how the research has evolved during the process. Prior to interviews the researcher sought to understand the local stakeholder ecosystem through actively interacting with it and making observations about the status quote (included in the appendix). This and the pilots informed the final process which was adjusted based on initial findings and learnings. Following the interviews some independent study was conducted to be able to relate to the reality of the participants (entrepreneurs) based on their comments, and this also informed the development of the suggestions presented.

4.2.3. Were multiple methods of gathering and recording/documenting data sensitive to participants' language and views?
To the best ability of the researcher. The FCM recorded individual concepts; additional notes were made regarding soundbites relating to the general topic. The concepts in the maps were somewhat blunt sources of data; richer expressions could be found from the empathy maps and the open-ended questions. The survey only produced numerical responses which could only be linked to the pre-determined ratings and definitions of different barriers, its role was to merely support the other methods. During the translation process care was taken to ensure that the meaning of the concept translates from one language to another and instead of amalgamating concepts into one

during aggregation and losing all the different ways to phrase the idea, these were retained in the Excel matrix – only their scores were consolidated as a measure of the overall influence of the concept. The melding of different variations into the most descriptive expression thought to represent the different views of all participants regarding that concept (obviously this was the researcher's subjective opinion and could be challenged) was done at the point where the results were reported and some condensation had to happen so that the data could be tabulated; some of this variance can be seen in the tables describing entrepreneur and stakeholder concepts.

With open-ended questions, it was great to see thoughtful analyses of the current situation from different participants but on the other hand the amount of raw data especially in the stakeholder group and the need to anonymise, weight and condense the results section overall became problematic. A decision was made to condense the answers to different questions and very few lengthy verbatim quotes were used*. However, the criterion for such condensation was corroboration and very different turns of phrase or diverging viewpoints were highlighted separately. Where the topic of the question overlapped between groups (this was intentionally built into the questions to get both first-person and third-person views), the answers were compared qualitatively.

*This was also partially the result of oversight in the researcher's part, as was the failure to allocate time for the confirmation of interpretations – the original information supplied to the participants with the invites mentioned that explicit permission would be sought separately if anonymous verbatim quotes from the material were to be used and going back to participants to request permission turned out to be onerous; ideally an upfront permission to use even lengthy quotes would have been requested during the interview along with the permission to record the interview. To honour the initial promise, the unprocessed quotes were therefore withheld and only small snippets of them were included in the results or they were paraphrased – as the quotes were already translated which unavoidably changed the voice and language, paraphrasing was considered tolerable as long as the idea of the participant was communicated in a recognisable manner.

The inputs to the individual empathy maps were curter than expected; the execution of the method was, in hindsight, not optimal as simply asking the participants to "fill in the blanks" (figuratively speaking) did not seem to inspire extensive introspection and a longer walkthrough might have been required; the time reserved for the task was 10 minutes but few entrepreneurs took longer than 5 minutes and did not appear to enjoy the task all that much. It might be that the remote interview as an environment, the section being preceded by the lengthy FCM section, time constraints and the fact that the questions were rather personal from a person the participants were not that familiar with contributed to the phenomenon. An opportunity to have a break was offered to the participants but they almost invariably wished to proceed without one. A combined map was created from all of the responses and where appropriate and relevant (descriptions of feelings, thoughts, and pithy comments – actions were not included as there was no shortage of those), entrepreneurs' comments made during the FCM interview were incorporated to the maps.

4.2.4. Were multiple methods and/or sources of information weighed in the analysis?

Not explicitly, although a gauge for this can be uncovered. Literature offered the basis for inquiry and the findings were also reflected on based on the literature consumed during the research process. In the original plan there was no explicit weighing, but based on the

time dedicated to each section, an approximation of this could be discovered: 1) FCM, 2) open-ended questions, 3) export barriers; empathy mapping.

This was also reflected in the amount of data gathered per method; FCM yielded most data and its analysis took up the bulk of the Results section, followed by open-ended questions. However, the significance of the export barriers survey and the empathy mapping was related to the process of triangulation, as the findings could be compared across to see whether there was any convergence.

4.3. Written report

4.3.1. Is the description of the methods detailed enough to enable the reader to understand the context of what is being studied?

This was not empirically tested, but every effort was made to keep the descriptions clear to anyone with no previous knowledge of the topic to increase the accessibility of research. What is being studied is the perceptions of the participants regarding SME internationalisation in SO, guided by the research questions. The background of the entrepreneurs and stakeholders is described in the work, along with the context of the interview as well as the process used. The rationale for the methods as well as information on each method is offered.

Detailed contextual information is provided in the Methods section, with supplementary information regarding protocol in the Appendix. Furthermore, as the actual FCM maps were omitted from the main body of the report, every effort was made to describe the salient points and the maps were included in the Appendix for context.

5. Transparency

5.1. Data collection and analysis

5.1.1. To what extent the process of data gathering, and analysis has been rendered transparent?

High. Transparency has been a guiding principle for the work, and records of the process have been kept. A key intention has been to make the thinking of the researcher as explicit as possible. Method, Results and Discussion contain an explanation of the choices made, rationale behind them and the implications of the said choices. Supplementary information is contained here and elsewhere in the Appendix section; additionally, it should be possible to follow the thinking without problems without having to refer to Appendix.

5.1.2. How were rival/competing accounts dealt with in the process?

Entrepreneur and stakeholder accounts were contrasted where appropriate, and the similarity of the responses was assessed also within groups. The findings were also compared to previous literature in the Discussion section. Points of agreement and disagreement were raised and discussed.

5.1.3. To what extent do the processes of data gathering, and analysis give privilege to participants' knowledge?

High. The entrepreneurs and stakeholders are considered the expert on SO SMEs and involved in the search for solutions that work for them. The different viewpoints include the first-person view of the entrepreneurs, the third-person view of the stakeholders. The role of the researcher here is to be an observer and discuss the findings from a bird's eye view while having empathy for both groups.

B) Interpretive rigour

1. Authenticity

1.1. Presentation of findings and interpretations

1.1.1. Are participants' views presented in their own voices; that is, are verbatim quotes presented?

Limited yes, this was partially discussed in 4.2.3. The translation process sought to preserve the voice of the participants to the greatest extent, yet the change of language invariably does impact the verbatim aspect. More importantly, there was an issue with seeking unambiguous permission for quoting – the researcher initially informed participants that a separate permission would later be sought for verbatim quotes, which turned out to be a mistake during the analysis stage as a better approach would have been to simply ask for permission prior to or during the interview. This was an oversight identified in the research design.

The dilemma became whether one was to first find good quotes, then re-contact participants for a single paragraph and wait for an answer hoping for the best, or to assume that the participants would unfailingly give permission as they agreed to take part and respond – neither course of action seemed palatable, and thus the choice was to quote only minimal snippets in between condensed paragraphs where a comment was particularly salient, yet so that the spirit and the meaning of the responses was preserved. Longer passages have been mostly paraphrased and shorter passages have been anonymised, i.e. due to the small sample size the participant number was not included with the quote. (No names were deliberately included in the responses to sidestep GDPR issues – the researcher could identify and keep track of the participants based on references to the institutional context as well a the date stamps of the form submissions, and the alphanumerical codes assigned to each participant so fundamentally there was complete clarity on who said what.)

1.1.2. Are a range of voices and views (including dissenting) represented?

Yes, both groups had individuals with views that diverged from the consensus on some aspects. These were raised along with alternative views to highlight the diversity of views.

1.1.3. Would the description and interpretations of data be recognizable to those having the experiences/in the situations described?

One should hope so, even though interpretations in some areas rely on researcher's correct understanding of the issue. A customer orientation was employed when empathising with the entrepreneurs, but the stakeholders' viewpoints were appreciated as well as the reasons behind the processes used became clearer.

The aggregation of responses may have diluted the distinctiveness of individual responses (much like averaging would in quantitative research), but care was taken to accurately represent the general experience as described by most participants, as well as to highlight the issues where there was disagreement or some participant made observations differing from others. The number of such responses was noted to indicate their prevalence in the sample.

1.1.4. To what extent were power relations in data collection and analysis taken into account; for example, were participants involved in documenting, checking or analysing data, or reviewing the analysis?

This was one of the focus areas in research design. The participants were involved in documenting data in the sense that they were invited to fill in their responses on the online form using their own words and expressions. They were also engaged during the interview – the issue of confirming perceptions and the weakness in the research design has been discussed earlier. The effect of time constraints in the execution of the FCM has been discussed elsewhere. Drawing the maps directly on Mental Modeler using screensharing might be beneficial for future research, although arguably it can also be detrimental for note-taking unless there are either two researchers involved, or that the interview is recorded and transcribed in full later on. Here transcribing the map, rather than the entire interview was preferred as salient comments could be noted already during the interview.

Individual interviews were deemed the best choice to give everyone an opportunity to freely speak their mind without group pressure or other in-group influences, as Özesmi & Özesmi (2004) warned that this sort of dynamic might be possible in a group context. The participants were approached with humility and respect as experts on the subject matter, and their needs were prioritised in the process. The possibility of the "nobodyness" hampering recruitment was discussed earlier, but it may also have made the successfully recruited participants more comfortable to speak their mind as the researcher had no links to any other organisation than SeAMK and could claim a degree of independence or neutrality in the matter, be that the relationship between entrepreneurs and stakeholders, local municipalities or operative matters.

Similarly, possibility that the "strangers on the train" phenomenon (Derlega & Chaikin 1977; Dindia, Fitzpatrick & Kenny 1997: 406–410; rapid self-disclosure when there is no expectation of further interaction and relative anonymity is preserved) may have had a role in the process cannot be excluded. However, there's an equal possibility that the participants were not particularly selective in disclosing on a general level (Derlega & Chaikin 1977: 106) and would have freely disclosed the same information to anyone. Some newer research has looked at self-disclosure on visually non-anonymous contexts (Misoch 2015), albeit looking at sharing in YouTube videos – the relationship between content creators and their audience is complex as creators have been found to capitalise on the intimacy while some are also aware of some form of role model status; Berryman & Kavka 2017; Raun 2018). Research on professional information sharing and self-disclosure on video meeting platforms does not appear to be well-researched at this point but, with the proliferation of remote working, expected to increase in the future.

The online medium was considered superior to a phone interview in the sense that it allowed participants put a "face to a name" as there was a two-way visual in addition to audio, and changes in facial expression and body language could be observed to an extent, yet there was no physical proximity (as well as no Covid-19 transmission risk) and the participants could take part for example from home. Much of the time i.e. during the

FCM section, the screen-sharing function would have been on in the online meeting programme but there would have been a small box with the meeting partner's picture visible at all times – the researcher was in fact first unaware of this, but eventually considered it reassuring that the participants could see that the researcher was focused on the interview at all times and listening.

Overall, the impression was that the participants were happy to talk to the researcher about the matters and great discussions were had. Based on experiences from the "participant observation" side project and UAS coursework projects, the researcher is under the impression that entrepreneurs welcome the opportunity to pause and talk about their business reflectively to a neutral person (i.e. not an employee, peer or someone skewing the power relation to the entrepreneur's detriment), but that such opportunities can be rare. The possibility of a need for a "business therapist" especially in the sole proprietor group has been privately entertained by the researcher.

2. Coherence

2.1. Presentation of findings and interpretations

2.1.1. Do the findings "fit" the data from which they are derived, that is, are the linkages between data and findings plausible?

Yes. The results reported high-level findings from each individual data collection method, and different sections were compared to find areas of agreement as well as areas where the views diverged. The simplest relationship could be observed in the barriers survey, as there was no room for interpretation due to the cumulative process by which the top issues were identified. Empathy maps comprised of specific self-reports as well as comments that were deemed to "fit" the context as they described the entrepreneurs' feelings, thoughts or sayings. The responses to open-ended questions were translated and condensed to a fair extent, but so that the linkages between the original and the reported were clear and the ideas preserved intact. Some of the questions served to confirm aspects of the business ecosystem and were not reported as such.

With the FCMs, due to the size of the combined maps, further attention was focused on the top centrality and outdegree concepts as they could be argued to influence the system to the greatest degree. The idea of slightly different type of reporting with the 20% Pareto principle was abandoned as the data it generated no longer seemed to "fit" the source data. It is thus recognised that the top centrality factors cannot be comfortably separated from other factors in the system, as there would appear to be numerous smaller tributaries to different parts of the system. It unfortunately was not possible to fit and discuss each of those within the scope of this work, as no feasible way of presenting the highly complex full model in a meaningful way could be found – three maps, i.e. total entrepreneurs, total stakeholders and total participants, were included in the Appendix for reference.

2.1.2. What proportion of the data was taken into account?

Some inefficiency in data use exists, but care was taken to ensure that the reported results represented the source data accurately overall for each method and group, and that differing views were commented on. The data was aggregated in an accumulating manner, and the comparison of the results from different methods ensured that each of them was appropriately considered. Conclusions were drawn with an awareness of the whole, even where the focus was on the most salient aspects of the system. The

researcher deems this problematic only if one fails to consider the fact that the picture presented is only partial and the totality of the system has a plethora of other issue and relationships influencing the behaviour of the system. As human attentional capabilities are limited and especially the maps objectively opaque to a casual observer, a practical solution was to examine the top issues before moving to the ones further down the line.

For export barriers the figure of inclusion could be easily set at 100% as the responses could be tabulated and a clear bar chart could be drawn from them; naturally here most attention was paid to the top issues. For empathy maps the figure could be set to 99.9% as the only omissions made were the names of two specific stakeholder entities – their inclusion was contemplated, but the important issue was deemed to be the problems the entrepreneurs had with them as well as the outcome, rather than the name of the entity. It is acknowledged that this was a subjective decision not intended as censorship, but rather as a measure to protect all participants' privacy although other interpretations are also possible. When combining responses to open-ended questions, the focus was on identifying areas of agreement and disagreement – responses with similar content were aggregated and paraphrased, with salient points highlighted using brief quotes (see earlier discussion on this matter). The responses that may have researched less attention were the middle-of-the-road type answers that fit within the consensus and did not have any particularly radical points; no precise percentages were calculated, but intuitively 80% would seem like a good estimate.

The aggregated FCM maps for each group basically included all the data mentioned by participants in that group, so that all data was incorporated, but in reporting the tail end of the results was lost from the closer inspection. It was deemed logical that attention was focused on the most central or influential concepts (10–20 of those; about 10% of total concepts), and individual relationships were raised from the matrix based on those. It is recognised that this does leave 80–180 other concepts and a multitude of less influential relationship out of the picture. To ensure that any reader would have the opportunity to see the maps for themselves, these were included in the Appendix. To an extent the matrix version of the maps might have been more informative, but at 200+ rows and columns there was no way to fit it into the work here in a legible form; when printed out the matrix took over 10 A4 sheets.

2.1.3. Have the perspectives of multiple researchers (research team) been taken into account, e.g. are corroborating and competing statements been considered?

Not applicable. The work has been conducted as an independent study, with the thesis supervisors (former and current) mainly commenting on the phenomena and the literature overall, methodological and analytical problems encountered, and providing general guidance along with helping the research soundboard ideas arising along the way. The original research idea, which has been discussed elsewhere, was changed after the impracticability of it had been confirmed and accepted by the researcher – the outcome was predicted by the previous thesis supervisor, likely based on their own extensive experience. The influence of the supervisors is seen on the selection of the FCM method and a qualitative approach as the researcher was previously unaware of the former and hesitant to employ the latter, but the decisions on the rest of the design can be fully attributed to the researcher.

3. Reciprocity

3.1. Data analysis

3.1.1. To what extent were processes of conducting/reviewing the analysis/negotiating the interpretations shared with participants?

Key interpretations from the maps were confirmed during interviews. The oversight regarding the need to also do this with the final results has been noted as the main weakness of the study influencing the open-ended questions and FCM in particular; there were initial attempts to get feedback on the maps at the end of the FCM section, but it appeared that the participants seemed to have trouble with how the information was coded on the map (an A3-sized plate of spaghetti and meatballs would be a fitting way to describe the approximate look and feel of the maps). Colour coding was used to make the central aspects of the map more salient, and these were ran through with the participants at the end of the section – nobody seemed to disagree with the conclusions drawn, although many seemed to find the maps rather opaque if not intimidating and might have preferred not to comment for that reason. This is an area that can be considered and improved in any future research using the method.

3.2. Written report

3.2.1. Were participants involved in presenting the study?

Not as individuals and entities as they work was conducted independent of any participating organisation with the intention there being enhanced impartiality of the researcher; it is possible that this might have protected the work from some bias, but on the other hand opened it to other types of bias as the work was heavily dependent on the researcher to ensure the interpretations made were correct, to preserve the voice of the participants, and identify and remain mindful of their own biases.

4. Typicality

4.1. Written report

4.1.1. What claims are made for generalizability of the findings to other bodies of knowledge, populations or contexts/settings?

No claims of generalisability can be made based on the small sample size, the qualitative approach, and the snapshot-type nature of the FCMs, the probability of findings being a result of chance variation was not tested. Convergence was used in the study as a general tool of pattern recognition, and the results were also compared to previous studies discussing entrepreneurs in the region (especially regarding growth) with convergence again as the guide for comparison – here, too, for example the type of product, industry and the entrepreneur attitude would appear to have influence but for example the explicitly stated lack of time was an interesting addition; bottlenecks have been explored in previous research (Sorama et al. 2015; Sorama et al. 2018) and it is thought that their timeous identification can help in addressing them.

It is noteworthy that all entrepreneurs interviewed were either actively engaged in international trade or interested in commencing such activities, and thus only a subset of local SMEs. Generalising findings to all local businesses cannot be supported, but the

results can help focus further research on some of the points raised here and a replication or refinement of the research design is encouraged.

Although there may be a shared high-level narrative concerning for example the development of the economy and businesses in Finland, at a deeper level the history of the regional business ecosystem can be considered unique in relation to other regions and its influence cannot be excluded from the consideration – this, as well as many less influential embedded aspects of the system were not specifically assessed here, but based on complexity theory they are thought to influence the trajectory of the ecosystem going forward. Fuzziness of the knowledge limits the predictive ability of any model, and more uncertainty would be introduced to the fuzzy model over time. Models can assist in creating simulations of the system for testing different scenarios and outcomes, but they are only as accurate as the data fed to them and sampling would have to be conducted over time for any sort of longitudinal representation of system dynamics.

It might be possible to explore and test interventions to wicked problems based using the qualitative data here as a guide for prototyping, but the outcomes and the general behaviour of the system would have to be constantly monitored as changes in the systems can be expected in response to actions of system participants and they may not always be in line with the expectations of the participants. This is where incorporating the tail-end of the system components in any models used becomes particularly important, as they exert more subtle but cumulative influence on the system.

5. Permeability

5.1. Findings and interpretations

5.1.1. Is the researcher's role transparent in the interpretive process?

Yes. Every effort has been made to outline the thinking and actions taken during the process, and their attribution to different sources. Steps taken throughout have been recorded and an audit trail of major influences can be examined in the Appendix. Although a generally passive voice has been used in the work, where any subjective consideration has been involved, this has been noted in the text.

5.1.2. Did the study develop/change the researcher's initial understanding of the social worlds/phenomena studied?

Yes, the way of looking at the issue shifted from initial knee-jerk assumptions to a more nuanced view of the issue relatively early on as the incompleteness of the earlier data on internationalisation became evident. Systems thinking seemed initially like a rabbit hole, but on emerging from the other side the approach helped perceive different dynamics in play in the local system, as well as to consider the influence of different systems on each other. The challenges included in the process are now clearer, as well as the general challenges facing entrepreneurs in Finland. In addition to this, a cursory look to other wicked problems influencing internationalisation was afforded. Empathy was also developed for the stakeholders, and a bridging of the two worlds was attempted in the suggestions.

5.2. Written report

5.2.1. Are the researcher's intentions, preconceptions and values or preferred theories revealed in the report?
Yes. The choice of paradigm and considerations relating to it was stated explicitly. Similarly, the motivation for the research, initial assumptions and the development of an understanding are outlined in the report and expanded on in the Appendix. Different choices were questioned during the process and the researcher attempted to correctly identify any potential entry points of bias into the work.
5.2.2. Is the researcher's personal experience during the research process made explicit?
Yes, a detailed ethnographic account of the experience was omitted from the work, but a compressed timeline was incorporated as a rough description of this.

Appendix 5. Audit trail for the research

In addition to the main research work the process involved learning about entrepreneurship in the Finnish context, including business and entrepreneurship studies, event participation, networking, work for small companies in Finland and the starting up of an own side business on a "lite" entrepreneurship basis with overseas and Finnish clients. Also included was an orientation to the development grant application process at a practical level. Not only was this ethnographic side project experientially rewarding, it also helped vastly with the process of data collection, understanding of the system, and developing empathy for all system participants from employees and entrepreneurs to other stakeholders.

Pre-knowledge / curriculum vitae		Matriculation examination in Finland 2003; brief office internship in Seinäjoki 2003–2004, industry: law; work in the UK 2004–2012, industry: hospitality and catering; informal internship in South Africa 2010–2011, industry: marketing; Bachelor of Science in the United Kingdom (UK), Psychology and Biological Science, additional business and anthropology studies; work in South Africa 2012–2018, industry: outsourced digital services, various international markets; travel in EU, US, Australia, South Africa and Japan
2004 –	2018 Spring	Observation: Swedish and Danish design, clothing, and dairy companies seemed to be more ubiquitous in UK and Africa. Nordic brands observed abroad: Vaasan (FinnCrisp), Kone, Panda, Fazer, Iittala, Finlandia, Nokia, Marimekko, Rovio, Supercell | Kosta Boda, LEGO, H&M, Carlsberg, Sony Ericsson, Georg Jensen, Ikea. No SO businesses spotted overseas except for one instance of Koskenkorva and Kyrö Distillery gin (with Isokyrö joining SO) found from a Finnish curiosity bar in Osaka, Japan. Where is Valio? Interest in MBA studies from 2010 following a brief period of SME-focused research in South Africa
2018	Spring	March – Return to Finland Awareness of GDPR
2018	Autumn	September – International business MBA studies at Seinäjoki UAS (SeAMK) commence First contact with Into Seinäjoki through a chance meeting with SeAMK Entrepreneurship Society while looking for information on "lite" entrepreneurship as a solution for part-time freelancing in Finland; reading about the regulation of entrepreneurship

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		Attendance at a start-up event, awareness of start-up grants, rural business development grants, Leader groups and ELY (previous awareness of TE-centres from 2003) Reading about internationalisation in South Ostrobothnia, awareness of the Regional Council of South Ostrobothnia Idea of a joint project regarding start-ups with international orientation linked to Liikeideat Lentoon (LL) start-up course from the course facilitator at Into Seinäjoki; development of a feedback collection mechanism Attendance at Liikeideat Lentoon course (1 iteration), monitoring the feedback from different groups (3 iterations) from autumn 2018 to spring 2019 - Start-up process, business idea development, networking activities, awareness of Finnish Patent and Registration Office, rural area subsidies, range of outsourced business services Attendance at 2018 Nordic Business Forum live stream event, Kohdenna Viestisi ("Focus your message") business breakfast
2019	Spring	Studies in Seinäjoki UAS, awareness of RBV, dynamic capabilities, effectuation and causation Change of research plan, LL project split from research Reading about FCM as a method and complex systems; paradigm issues May - Nordic Business Forum Sweden live stream event SeAMK Global Master School in Seinäjoki, participants mostly from Finland, US and Germany First attempt to create an understanding of the organisational ecosystem related to internationalisation
2019	Autumn	[Part-time work in a local small business] September - Work on the research problem and literature search continues Into Seinäjoki events: - 2019 Nordic Business Forum live stream event - "Digimarkkinointi ja viestintä" (digital marketing and communication) seminar - "Amazon as an export channel" business breakfast; local success stories, awareness of Xport and consulting available [Visit to South Africa]

			Familiarisation with the local business ecosystem: Team Finland roadshow 22.10.2019 - Introduction of Team Finland, funding and services, Ministry of Foreign Affairs support available and the role of embassies - Local success stories - Introduction of Finnvera - Introduction of local entrepreneur organisations - Awareness of Chamber of Commerce, Business Finland, Ministry of Foreign Affairs, Finnvera - Awareness of Business Finland focus programmes - Awareness of Valo programme by Xport and ELY to systematically support select small businesses to go overseas - PR schemes planned for Japan 2020 Awareness of the ELY development needs assessment process [Friend in Japan needs help with developing a start-up business idea in the absence of local services; translation of LL workbook into English with permission from the course facilitator at Into Seinäjoki] Last module with contact hours at SeAMK; end of casual work in December
2020	Spring		[January - Lockdown in Wuhan, China; first case of Covid-19 in Finland] Discovery of Özesmi & Özesmi article with FCM protocol [February - Friend in Singapore reports of strict quarantines and travel restrictions] "KV-osaajista kasvua ja kilpailukykyä" (growth and competitiveness from international experts) event/job fair 12/03/2020 [March – Covid-19 declared a pandemic; first soft lockdown in Finland, WFH recommendation and business subsidy rollouts] [Postponement of research; networking online, GDPR studies and Google Primer mini courses while the business situation remains uncertain] Reading on wicked problems and bias; further mapping of the local business support ecosystem May - Discussion about the local ecosystem with a local consultant; awareness of Export Guild at Chamber of Commerce, Xport / SO cooperation with Viexpo in Ostrobothnia; suggestions for who to consider contacting from stakeholder organisations Awareness of the Kokka kohti Etelä-Pohjanmaata project

|		
		Retirement of previous supervisor June - Remote event: - "Saksan exit-strategia ja markkinoiden mahdollisuudet" (German exit-strategy and market opportunities); awareness of the services of the German Chamber of Commerce [Comparison of billing services supporting international payments for lite entrepreneurship with international clients in EU or US]
2020	Autumn	August - New supervisor assigned for the project Meeting with the project team of Kokka kohti Etelä-Pohjanmaata to find out where they are with their project and what activities they have planned; received suggestions for who to consider contacting for interviews [Casual remote work as a lite entrepreneur for an international client; the inconvenience of SWIFT fees becomes evident; awareness of VAT differences in international business] September – Preparation of the interview protocol and questionnaires, pilot of the in-person interview and adjustments to the protocol and questionnaires Remote events: - 10/09/20202 – "Brändää somessa ja digitalisoi bisnes" (social media branding and digitalisation) - 11/09/2020 – "EU Etelä-Pohjanmaalla ja digitalisaation" (EU in SO and digitalisation) [Second soft lockdown; renewed WFH recommendation] October - New remote protocol with video meeting web app and online questionnaires Awareness of the new Ministry of Economic Affairs and Employment growth and internationalisation action plan November - Interviews commence Viexpo virtual export event series 16/11/2020 – 18/11/2020 - Awareness of Ostrobothnian / SO business group success stories from Leader groups and Xport; awareness of Exhibit 24x7 remote trade show concept with Xport, virtual expo consulting from Viexpo "Lakeuksilta maailmalle, maailmalta lakeuksille" online events - "Verkkokaupan perustaminen ja uudet markkinat" (starting up an online store and new markets) 17/11/2020 - "Maailma on markkinasi – verkkokaupan menestysreseptit" (global online sales from Finland) 17/11/2020

		- "Rahoitusinfo: eteläpohjalaisen pk-yrittäjän työkalupakki" (funding instruments for SO SME entrepreneurs) [December - Casual work researching the documentation for SO SME grant application process] Awareness of the process for grant applications through ELY and the temporary application freeze
2021	Spring	January - Interviews end February – Access to Mental Modeler, transcription of maps and data export to Excel [Casual work translating materials for SO SME planning to import own-brand products from abroad, possibility of later exports] March – Analysis work; quality assessment of work April – Finalisation of thesis

Appendix 6. Output: Fuzzy cognitive maps

1) FCM for entrepreneurs (A3)

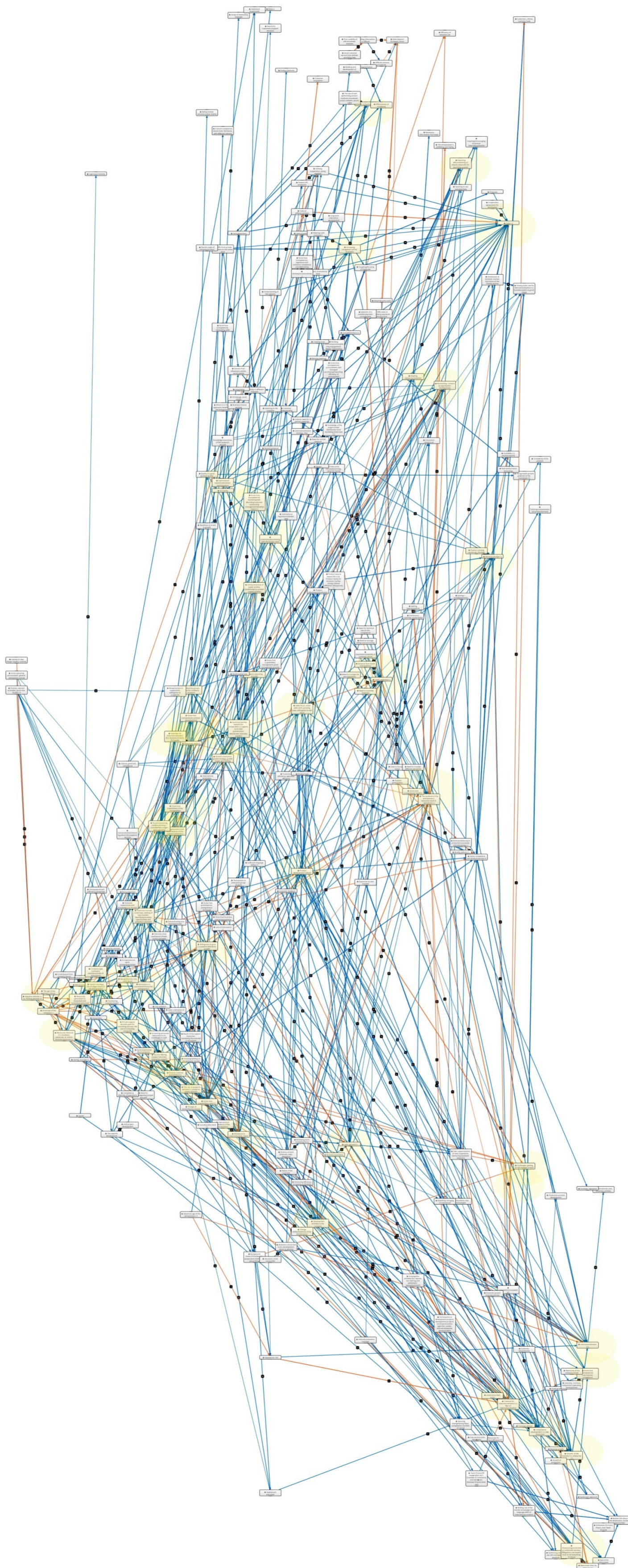2) FCM for stakeholders (A3)

3) FCM for all participants (A2)

FCM - All entrepreneurs

Legend:
Increasing influence
Decreasing influence
High centrality
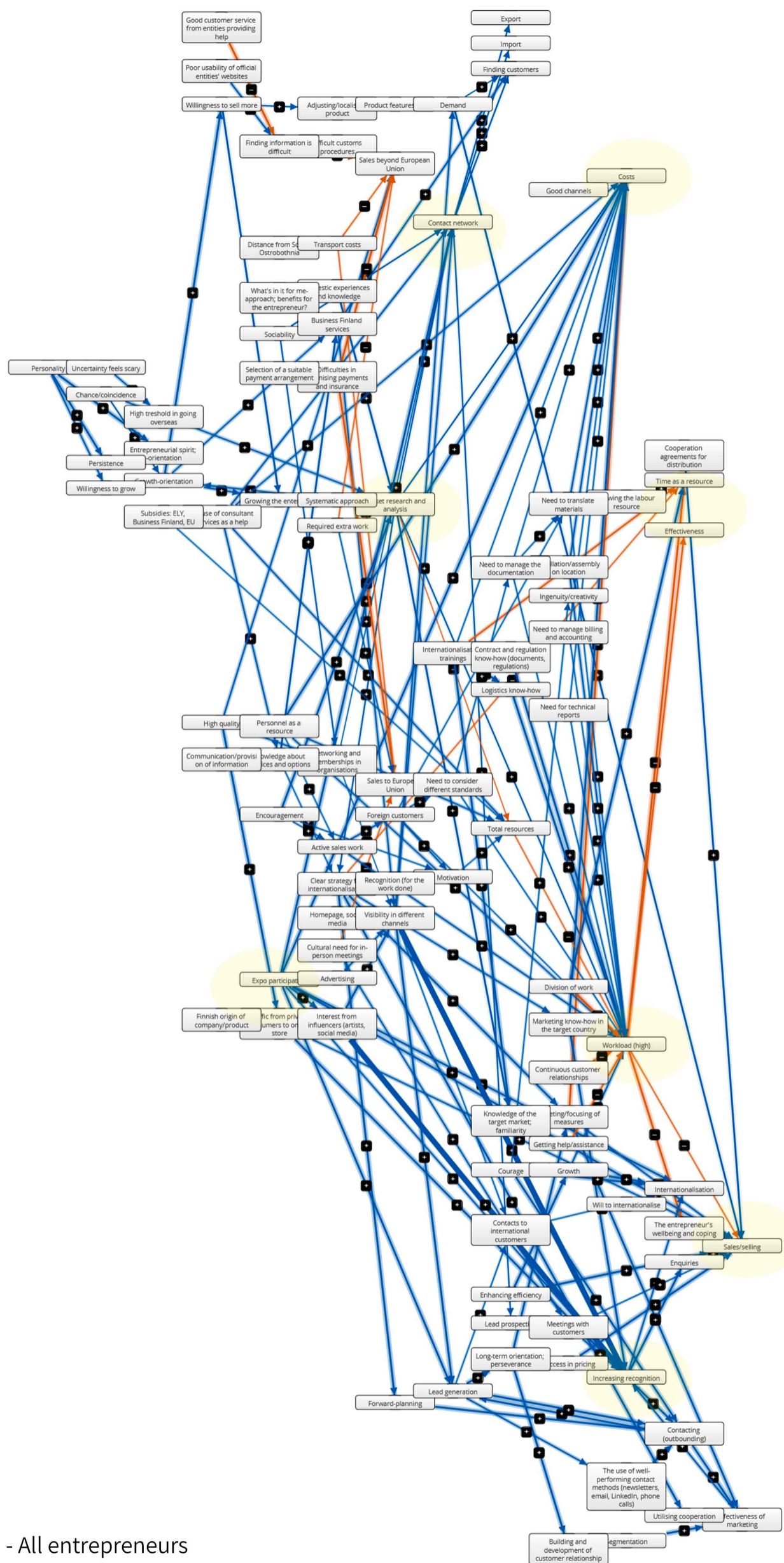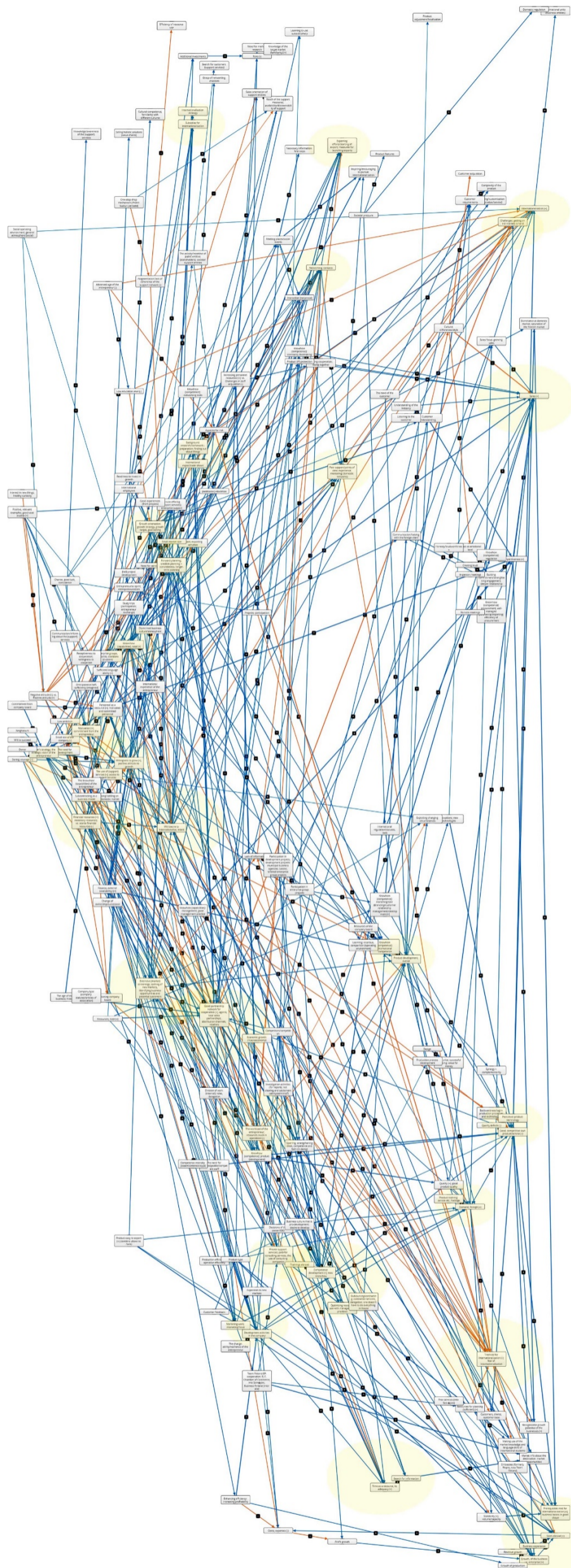
FCM - All stakeholders

Legend:
Increasing influence
Decreasing influence
High centrality

FCM - All participants