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# In the same boat? The dynamics of embedded firms in peripheral regions

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## ABSTRACT

Peripheral regions are often negatively characterized as having structural weaknesses that hinder the development of thriving firms. This study explores embeddedness, a concept considered important to overcome such liabilities, because it may enable or constrain actors' access to additional resources. However, there is limited understanding of the underlying dynamics of this concept. Based on a qualitative case study of the development of salmon-farming firms in peripheral areas of Norway, this study shows that the industry's pioneering phase was characterized by embedding processes among the farmers through sharing and openness. Over time, greater industry consolidation created a division between listed firms and locally owned small- and medium-sized firms (SMEs). The listed firms disembedded from the social and institutional contexts of the periphery, which led the SMEs to reinforce their embeddedness and continue their collaborations. Thus, our findings extend prior studies treating embeddedness as a static concept, showing how embeddedness consistently develops in response to actors' actions. We further show that the SMEs' embeddedness in multiple contexts (social, institutional, and spatial) enabled them to solve mutual challenges through interfirm collaborations, thereby securing competitive advantages. Hence, we contribute to a holistic, evolutionary, and dynamic understanding of embeddedness processes in peripheral regions.

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## 1. Introduction

In an increasingly globalized world, firms embedded in both urban and peripheral regions are challenged with the notion of competitiveness (Boschma 2004; Collis and Montgomery 1995; Dubois 2016). However, peripheral regions – areas that are spatially remote from urban centres (Anderson 2000; Lagendijk and Lorentzen 2007) – are commonly described as challenging environments for business development as they lack access to important resources and dynamic agglomeration externalities, such as local suppliers, firm support services, and knowledge suppliers (Dubois 2015; Tregear and Cooper 2016; Tödtling and Trippel 2005). To explore business development taking place in such areas, previous research has focused on the concept of embeddedness (e.g. Jack and Anderson 2002; McKeever, Jack, and Anderson 2015) which has been found to enable or constrain actors' access to additional and complementary resources.

Embeddedness is broadly defined as 'the nature, depth, and extent of an individual's ties into an environment, community, or society' (McKeever, Anderson, and Jack 2014, 222). Thus, it has been examined from the perspectives of social relationships and business collaborations (e.g.

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Balland, Belso-Martínez, and Morrison 2016), placial elements (e.g. Korsgaard, Ferguson, and Gaddefors 2015), and institutional conditions (e.g. Welter and Smallbone 2011). However, despite findings suggesting that embeddedness should be treated as a dynamic concept related to entrepreneurial activities (Korsgaard, Ferguson, and Gaddefors 2015), there remains a lack of studies exploring the nature of these processes (Welter 2011; Wigren-Kristofersen et al. 2019). Indeed, prior research has applied a rather static view of embeddedness, 1) considering it to be a stable state of entrepreneurs or firms without questioning if and how embeddedness can develop over time, and 2) firms have been identified as embedded or not by focusing 3) solely on either the social, spatial, or institutional contexts as the sources of their resources (Welter 2011; Wigren-Kristofersen et al. 2019).

In addition, there remains a lack of knowledge on how firms in peripheral areas are actually able to overcome the constraining factors of the periphery (Clausen 2020). To clarify these dynamics, we need studies that adopt a holistic, processual approach to explore how embeddedness develops over time and thereby enables peripheral firms to overcome the challenges they face. In peripheral regions, spatial remoteness and low density can limit many firms' access to critical agglomeration externalities (Tödtling and Trippl 2005), so other means of resource acquisition can be of special importance. Therefore, we believe peripheral regions are an appropriate context for studying embeddedness.

To further investigate the dynamic view on embeddedness, we conducted a qualitative study of firms in the salmon-farming industry in peripheral regions of Norway and posed the following research question: *How do embedding processes develop in a consolidating industry?* Since its beginning, the salmon-farming industry has experienced tremendous productivity growth, alongside biological and technical challenges and phases of industrial consolidation. Such industry concentration has recently been reported as an overall increasing trend across countries and industries (Bajgar et al. 2019). Prior studies have looked into the motives and consequences of industry consolidation in diverse sectors like banking, finance, and defence (Amel et al. 2004; Berger, Demsetz, and Strahan 1999; Hensel 2010). However, the extant literature has generally focused on large firms, and to our knowledge, there is limited research on how independent small- and medium-sized enterprises (SMEs) respond to consolidation (McGee and Shook 2000).

The Norwegian salmon-farming industry now includes various firms that have all experienced economic growth despite their peripheral locations (Bullvåg et al. 2019), suggesting that they have overcome the liabilities often associated with operating in peripheral regions while remaining competitive throughout phases of industrial restructuring. Since consolidation may cause additional challenges related to sustaining competitiveness for those firms that remain independent, this study focuses on SMEs within this consolidating industry as these firms may offer valuable insights into how ventures can alleviate structural and spatial disadvantages (Clausen 2020).

This study was developed in response to the general call for more contextualized research (Baumol 1996; Gartner 1995; Trettin and Welter 2011; Welter 2011) on peripheral regions. It offers two distinct contributions to the literature on embeddedness. First, our historical perspective on embeddedness enabled us to discover how industrial consolidation led listed salmon-farming firms to disembed from common contexts with the SMEs while strengthening the embeddedness of locally owned SMEs. Our findings illustrate the interrelated and evolutionary dynamic processes of embeddedness in peripheral regions (Hellerstedt et al. 2019). Second, we show how embeddedness in multiple contexts (social, institutional, and spatial) (Hess 2004; Welter 2011) has enabled the SMEs in this industry to engage in interfirm collaborations to solve mutual challenges and thus secure competitive advantages. Hence, our study also adds to the few extant studies on the dynamics of successful interfirm collaboration (Hagedoorn, Link, and Vonortas 2000; Majchrzak, Jarvenpaa, and Bagherzadeh 2015; Smith 2012). By studying these processes, we uncovered insights that, while specific to salmon-farming firms in peripheral regions, could also have broader implications for other firms and industries experiencing such consolidation in similar contexts.

The remainder of this paper is organized as follows. [Section 2](#) outlines our theoretical framework on embeddedness in peripheral regions. [Section 3](#) describes our methodological approach and provides insights into the empirical setting of this paper. [Section 4](#) presents our empirical findings. [Section 5](#) discusses these findings in relation to previous research. Finally, [Section 6](#) provides our conclusions.

## 2. Embeddedness in the periphery

This section examines prior studies on the role of context, particularly the enabling and constraining context of peripheral regions, before addressing embeddedness and its role in peripheral regions.

### 2.1. The peripheral context

Various scholars have called for recognizing and considering the contexts in which entrepreneurial action takes place (Baumol 1996; Gartner 1995; Trettin and Welter 2011; Welter 2011). Indeed, several studies have established that entrepreneurial activity is a contextualized process (e.g. Fortunato and Alter 2015; Jain, George, and Maltarich 2009; Smith and Stevens 2010). Recognizing that individuals and organizations are embedded in contexts that affect their activities and actions in various ways highlights that entrepreneurial activities materialize differently in different contexts.

This study addresses the specific spatial context of peripheral regions, which we define as regions that are geographically situated outside main urban centres (Lagendijk and Lorentzen 2007). These regions tend to be dominated by primary sector enterprises but are not necessarily economically marginal (Baumgartner, Pütz, and Seidl 2013), and they are generally sparsely populated (Eriksson 2010). We also recognize that these areas should not be defined using only static indicators because the continuous gravitation of social and economic activities towards core regions also shapes and creates peripheral areas (Anderson 2000; Mayer and Baumgartner 2014).

Firms and entrepreneurs in peripheral regions often face substantial challenges. Among these is their relative lack of access to resources and networks. It is widely known that firms in peripheral regions often do not have the same ready access to resources as firms in core areas, which can limit their ability to secure a competitive advantage and engage in effective business development. Indeed, peripheral regions are often characterized as 'organizationally thin' (Tödtling and Trippel 2005), meaning they lack sufficient actors, support organizations, and dynamics that contribute to firms' innovation and technological change (Doloreux and Dionne 2008; Tödtling and Trippel 2005). To compensate for these impediments and their resulting vulnerability, peripheral firms may engage in extraregional collaborations (Dubois 2015; Grillitsch and Nilsson 2015). However, organizational thinness weakens the absorptive capacity of firms in peripheral regions (Cohen and Levinthal 1990). Consequently, peripheral firms have been found to largely differ in terms of their ability to complement their in-house capabilities and resource bases through collaboration (Bjerke and Johansson 2015; Grillitsch and Nilsson 2015).

Understanding these challenges allows us to understand peripheral regions through their lack of resources relative to core areas (De Souza 2018). Since studies have indicated that the spatial conditions that shape peripheral areas act as constraining factors for both existing firms and new venture development, more research is required to learn how ventures in peripheral areas have been able to overcome the liabilities they face (Clausen 2020). Therefore, it is important to explore the dynamics that enable firms on the periphery to remain competitive. To understand these underlying dynamics in the salmon-farming industry in peripheral regions of Norway, we examined it in relation to embeddedness as it focuses on the enabling and constraining effects of actors' ties in different contexts (Welter 2011).

## 2.2. *Embeddedness*

Embeddedness is a complex, multifaceted, and contextual phenomenon (Szkudlarek and Wu 2018), whereby actors' ties enable or constrain their access to resources (Korsgaard, Ferguson, and Gaddefors 2015). The fundamental tenet of embeddedness is that actors are embedded in relationships that affect their actions and outcomes (Gnyawali and Madhavan 2001).

The concept of embeddedness was first presented by Polanyi ([1944] 2001) in his seminal work 'The Great Transformation', which used the term to describe how the economy is subordinated to social relationships, politics, and religion – that is, it is embedded. He wrote that in traditional economies and systems of exchange, 'acts of barter are here usually embedded in long-range relations implying trust and confidence' (Polanyi [1944] 2001, 64). He contrasted this logic with the logic of a modern market economy, which he criticized for striving for an autonomous self-regulated economy disembedded from society. Polanyi argued that disembedding is impossible because doing so would mean treating both human beings and the environment as commodities, which people will resist.

The concept of embeddedness gained more widespread acceptance after it was adapted by Granovetter (1985). Rather than wholly accepting Polanyi's institutionalized underpinnings, Granovetter (1985) argued that economic outcomes could be explained based on actors' relationships, saying that economic action is embedded in social networks (Granovetter 1985; Uzzi 1997). Through social structures, such as local ties, social relationships, and bonds (socialized reservoirs), actors can extract experiences, knowledge, and other resources and create value from their surroundings (McKeever, Jack, and Anderson 2015).

From this perspective, collaboration among firms constitutes a central aspect of being socially embedded (Balland, Antonio Belso-Martínez, and Morrison 2016). Currently, companies in many industries are involved in various forms of external collaborations (Oerlemans, Knobens, and Pretorius 2013; Powell, Koput, and Smith-Doerr 1996). Such interfirm collaborations can consist of formal contractual arrangements, such as joint ventures, or more informal noncontractual interactions, such as interactions between employees in collaborative firms (Bönte and Keilbach 2005). Both formal and informal interfirm collaborations can enable firms to access complementary capabilities (Chesbrough 2003; Sampson 2007); therefore, social embeddedness is considered to be an important mechanism for recognizing opportunities and understanding the processes through which resources are shared and used in collaborations. These social relationships contribute to trust among actors, shared values, and localized norms (McKeever, Jack, and Anderson 2015).

Recent research has focused on contexts beyond the social context as essential sources of resources and information, such as the spatial context (e.g. Gaddefors and Anderson 2019; Müller and Korsgaard 2018) and the institutional context (e.g. Welter and Smallbone 2011), which is understood as a macrolevel framework consisting of 'common habits, routines, established practices, rules, or laws that regulate the relations and interactions between individuals and groups' (Edquist and Johnson 1997, 46). Examining these other contexts has enhanced our understanding of the importance of ensuring that economic theorizing is sensitive to the contexts in which relevant entrepreneurial activities occur (Trettin and Welter 2011; Welter 2011; Wigren-Kristofersen et al. 2019). Thus, as Kalantaridis (2009) noted, the embeddedness approach provides a broader understanding of how contexts – through cognition, culture, and institutional and social structures – stimulate or hinder business activities.

### 2.2.1. *Embeddedness and peripherality*

Embeddedness focuses on the enabling and constraining effects of actors' ties to different contexts (Welter 2011); therefore, we argue that because of the resource liabilities associated with peripheral locations, it is important to explore the dynamics of embeddedness that enable or hinder firms' ability to overcome these obstacles. However, previous studies have failed to clarify the implications of embeddedness for firms in rural and peripheral areas (Kalantaridis 2009). Tregear and Cooper

(2016) noted that when applying embeddedness to explain the relational dynamics in peripheral collaborations, earlier studies have tended to arrive at rather narrow interpretations focusing on local contexts. In addition, the characteristics of peripheral areas, such as the small number of actors, long distance from markets, and close social ties, can transform embeddedness into a constraint on firm growth (Atterton 2007). Hence, certain studies have proposed the problem of overembeddedness in peripheral areas, arguing that the strong ties developed in local communities tend to blind actors to new opportunities from external ties (Atterton 2007; Uzzi 1997).

Peripheral areas and the factors influencing them can shape firms' embedding processes and outcomes. In their examination of firms' embeddedness in a producer cooperative in a rural area, Tregear and Cooper (2016) found that the cooperative's development was driven not by the social relationships in the local geographic area but by a common sectoral-contextual embeddedness in which sectoral norms and habits shaped actors' relationships and learning. In another study on the embeddedness and growth of small businesses in rural regions, Greenberg, Farja, and Gimmon (2018) found that embeddedness had positive effects on business growth in rural peripheral areas. They also suggested that to deal with the challenges related to remoteness, rural peripheral entrepreneurs engaged in what the authors called 'double-layered' embeddedness. That is, firms were able to secure their competitiveness by embedding in both local-traditional spheres and extralocal networks to achieve greater product exposure and obtain a more extensive customer base.

This latter finding is in line with that of Korsgaard, Ferguson, and Gaddefors (2015), who found that while rural entrepreneurs used local networks, they tended to use nonlocal networks to a higher degree for strategic purposes. Interestingly, Korsgaard, Ferguson, and Gaddefors (2015) found that entrepreneurs established these nonlocal embedded ties after they moved to rural areas – a finding that reaffirms the need to consider embeddedness not as a static concept but as a dynamic process that is temporally intertwined with entrepreneurial activities (Korsgaard, Ferguson, and Gaddefors 2015). However, there remains a clear gap in the literature; few studies have explored the dynamic nature of embedding processes. The studies on embeddedness mentioned earlier have mainly treated the phenomenon as a stable state sustained by entrepreneurs or ventures. Consequently, we need to ask whether embeddedness is a binary state in which actors are either embedded or not or whether there can be degrees of embeddedness and disembeddedness in different contexts (Hellerstedt et al. 2019; Wigren-Kristofersen et al. 2019).

Accordingly, this research seeks to shed light on the dynamics of the embedding and disembedding processes among firms in peripheral regions and how these processes interrelate and develop over time. For this purpose, we propose a broad understanding of embeddedness to gain a more holistic view of the embedded actions of firms in peripheral areas. Thus, we explore how the social, institutional, and spatial contexts stimulated or hindered the collaborative business activities that salmon-farming firms in peripheral areas of Norway initiated to overcome the challenges they faced.

### **3. Research methods**

#### **3.1. Research design**

To supplement the limited research on dynamic embedding processes in peripheral contexts (Salamonsen 2015; Wigren-Kristofersen et al. 2019), we chose an in-depth qualitative design (Creswell and Poth 2018). In particular, case studies are preferable when studying change processes in relation to context (Vestrum and Rasmussen 2013). Thus, we employed a multiple-case-study design (Eisenhardt and Graebner 2007), which allowed us to collect rich contextual insights and maintain a holistic perspective (Yin 2014).

The limited research on embeddedness as a multilayered and processual concept has emphasized the need for theory building. Accordingly, our objective is to advance theory on the dynamics of embeddedness (Eisenhardt and Graebner 2007). Exploring multiple cases provided a strong

foundation upon which we could extend such theory (Eisenhardt and Graebner 2007) and allowed us to compare the firms we studied. Thus, we were able to gain a deeper understanding of the underlying dynamics of embeddedness and contribute to further theory development (Eisenhardt and Graebner 2007).

### 3.2. Empirical setting

Applying a broad understanding of embeddedness, this study was situated in various contexts. In this section, we elaborate specifically on the spatial and industrial contexts of our cases to ensure an in-depth understanding of the study's empirical setting.

The spatial setting was peripheral areas in Northern Norway. The county of Nordland, where the studied firms were located, is a vast, geographically dispersed region with a small population and low population growth compared to national numbers (Bullvåg et al. 2019); in other words, its degree of urbanization is low. The municipalities where the case firms were located are all coastal and peripheral, outside the main metropolitan areas of Norway (Legendijk and Lorentzen 2007). The municipalities vary somewhat in size, from fewer than 1,500 inhabitants to 8,000 inhabitants, with one firm located in a municipality with approximately 50,000 inhabitants. The distances to the nearest regional centres are presented in Table 1, which also shows the distances to different infrastructure nodes, such as airports. In addition to being situated far from Norway's population centres, the firms in this study were also distant from each other despite being located in the same county.

This study's industrial context – the salmon-farming industry – is entirely a peripheral industry due to its coastal locations distant from core regions. Through its locations in specific geographical regions, it makes substantial direct contributions to local peripheral economies as well as to the greater Norwegian economy (Bullvåg et al. 2019). Global and national annual production of salmon has increased enormously in recent decades, and aquaculture is the most rapidly growing sector in the Norwegian economy (Hersoug 2015; Straume 2017). The Norwegian government has stated its objective to become the world's leading seafood-producing nation, and Olafsen et al. (2012) outlined a future scenario with a fivefold increase in salmon production by 2050. However, while these prospects are positive, further growth in the Norwegian salmon-farming industry will remain restricted until production-related problems are solved or reduced. The two most important issues are salmon escapes from saltwater cages and salmon lice outbreaks among farmed salmon; these two issues are believed to have negative effects on trout and wild salmon (NOU 2019:18). Until these issues are solved, the government has limited the distribution of new production licences, thereby restraining production volumes.

**Table 1.** Characteristics of the case firms.

Firm	Size*	Founded	Ownership	Nearest regional centre
F1	Small	1970s	Locally owned	< 1 hour away
F2	Small	1970s	Locally owned	< 1 hour away
F3	Small	1970s	Locally owned	> 2 hours away
F4	Small	1970s	Locally owned	> 2 hours away
F5	Small	1970s	Locally owned	> 2 hours away
F6	Medium	1980s	Locally owned	2 hours away
F7	Medium	1960s	Locally owned	< 1 hour away
F8	Medium	1980s	Locally owned	< 1 hour away
F9	Large	1970s	Mainly locally owned	> 2 hours away

\*Firm sizes: small < 50 employees; medium 50–250 employees; large > 250 employees

The salmon-production process takes three years. First, fish eggs are hatched. Young salmon live their first year in freshwater containers on land, where they are vaccinated and fed until they reach a weight of 100–800 grams. After about one year, they evolve into smolt and are ready to be transported to saltwater cages, where they remain for the roughly two years it takes for them to reach harvestable size. When they are big enough, they are transported to slaughterhouses and processing plants to be prepared for sale.

### **3.3. Case selection**

Given that the purpose of this study is to build theory, we used theoretical sampling in the case-selection process (Eisenhardt and Graebner 2007). Namely, we selected the cases based on their theoretical appropriateness for the focus of this study. All the sample firms were engaged in Nordland's salmon-farming industry, an entirely peripheral industry. Throughout the development of the salmon-farming industry, a strong consolidation process has taken place related to the acquisition of farming licences. The resulting industry concentration has reduced the number of independent companies while also increasing the size of the largest companies (Asche et al. 2013). Some of the possible drivers of this consolidation are economies of scale in farming and risk reduction in production (Oglend and Tveteras 2009), factors that provide advantages for the largest firms. For those firms remaining independent actors, however, this industry consolidation has likely caused additional challenges.

The restructuring has created a division between large listed firms and locally owned SMEs. The listed firms are more self-reliant due to their vertical integration, while the SMEs are more dependent on and embedded in their local communities. This increased degree of concentration can be observed in all leading salmon-producing countries, but the Norwegian salmon-farming industry is still rather heterogeneous compared to the others (Asche et al. 2013). Throughout the decades of structural changes in the industry – including several bankruptcies and phases of consolidation – all the smaller locally owned farmers have had several opportunities to sell their businesses to larger actors at a substantial profit. Most did so, but some chose not to sell. Due to this division, we focused on nine salmon-farming businesses that are still locally owned and thus locally embedded in their communities. These nine SMEs are in the same peripheral area, which enabled us to examine them and their interfirm relationships in depth (Neergaard 2007). Despite a few variations in firm size and operation localities within the county, the cases were similar in terms of their ownership and location in the same county. The firms were anonymized for confidentiality. Their descriptive characteristics are presented in Table 1.

### **3.4. Data collection**

The primary data source for this study is semistructured interviews with firm representatives, suppliers, and other key actors in the salmon-farming ecosystem. We first contacted the participants by email and then followed up over the phone. All the firms agreed to participate in the study.

To gain insights into the aquaculture industry, we first interviewed key informants who had interacted with most of the industry actors, including intermediators, policy actors, and researchers on salmon farming (i.e. related actors), collecting information we then used to develop an effective interview guide for the firms. We then interviewed one to three firm representatives from each case firm (see Table 2). In the cases for which there is more than one person listed, we conducted group interviews. In two of the cases, the firm representative was either the founder or had been in the firm since it was established; in three of the cases, the representative CEO or main shareholder had been with the firm for more than 30 years; in the remaining four cases, the firm representatives were second- or third-generation successors. In addition, we interviewed four suppliers participating in interfirm value chain-related activities in the salmon-farming industry to increase the validity of our findings. Thus, we conducted a total of 19 interviews.



**Table 2.** Sources of primary and secondary data.

	Case firm interviewees		Related actor interviewees	
	Firm	Role	Actor	Role
<b>Primary sources</b>	F1	CEO	RA1	Incubator manager (intermediator)
	F2	CEO	RA2	Project leader (intermediator)
	F3	CEO	RA3	Regional director of a government organization
	F4	CFO	RA4	Researcher at a university
	F5	CEO, operations manager, main shareholder	RA5	Researcher at a university
			RA6	Researcher at a university
				<b>Supplier interviewees</b>
	F6	CEO	<b>Supplier</b>	<b>Role</b>
	F7	CEO	S1	CEO
F8	CEO	S2	CEO	
F9	CEO, main shareholder	S3	CEO	
		S4	CEO	
<b>Secondary sources</b>	Press articles, annual reports, newsletters, websites, industry conference			

We selected a retrospective interviewing approach to explore the underlying processes of the firms' actions on the periphery and to obtain information on their histories, their relational dynamics, the development of the different contexts, and the influence of these contexts on their business activities (Miller, Cardinal, and Glick 1997). This retrospective approach enabled us to capture temporal activities within the industry, the historical development of the industry, and the evolution of embeddedness among the actors, thereby further contributing to our theorizing on these aspects.

We employed a thematic protocol in each interview to ensure we covered similar topics in all the cases. We adjusted the interview guide as necessary before each interview to incorporate any secondary data relevant to the case to ensure we asked all the appropriate questions. To avoid potential bias, we referenced no theoretical concepts explicitly. Rather, we designed the interview questions to encourage the subjects to use their own terms to tell us about their stories from start-up to present, the challenges they had faced, and how they overcame them. Early in the data-collection process, collaborations became a central topic in the conversations with the interviewees. To gain more in-depth information regarding the development of the firms and their collaborations, we asked open-ended questions and follow-ups as necessary, such as the following: 'Which actors were involved in the process', 'Where did that contact stem from', 'Why did you do that', and 'Were other partners considered?'

We conducted 19 semistructured interviews, each lasting 40–145 minutes. Of these, 14 were face to face, and five were over the phone. To avoid bias and expand and correct potential subjective views of the data, we employed investigator triangulation as the interviews were conducted by a group of researchers (Denzin 1978; Flick 2004). The interviews all took place in 2018 or 2019 and were all recorded and transcribed as part of the data-analysis process. The transcribed material yielded 216 single-spaced pages of primary source material. The interviewees were guaranteed that their responses would only be reported in ways that maintained their anonymity, and they were invited to read and approve the transcripts before we undertook further analysis.

We supplemented the interview data with information from other sources to achieve triangulation (Creswell and Poth 2018), collecting secondary data from such document sources as annual reports and webpages (see Table 2). The first author also attended an industry conference to obtain a better contextual understanding of the salmon-farming industry.

### 3.5. Data analysis

During the data-collection process, two of the authors read and reread the interview transcripts to ensure familiarity with the cases and the context and to potentially identify initial general patterns across the cases (Creswell and Poth 2018). We used the NVivo 12 qualitative analysis software (QSR International, Melbourne, Australia) to conduct inductive data analysis inspired by Gioia, Corley, and Hamilton (2013). In line with Saldaña (2015), in our initial coding, we used the interviewees' terms to categorize the data into collaborative actions and relational descriptions. We ended up identifying 64 separate codes.

Once we identified the broader focus of the peripheral firms' embeddedness and changes in the industry and in the firms' relationships and collaborations over time, we began to structure and label the data guided by our research question. This process led to an iterative, detailed coding process in which new codes were added, compared, and grouped with the initial codes (Saldaña 2015), which yielded 34 first-order concepts (see Figure 1). We then searched for links among the first-order concepts, which yielded 10 second-order themes. Throughout this process, we also reviewed the literature on embeddedness and embedding processes in peripheral regions. When distilling the second-order themes into four aggregate dimensions, we observed that the firms' embedding processes changed over time. Hence, the first three dimensions constitute three distinct time periods (Langley 1999) between the early phase of the industry and today; in contrast, the aggregate dimension of spatial awareness constitutes a continual factor.

## 4. Empirical findings

One CEO told us, 'The most important thing we do is to spend money locally and use local suppliers because that helps developing industrial communities, which are important for creating vibrant, viable societies' (F8). This quote illustrates one of the firm's embedded ties in its local community and the firm's awareness of its positive impact on the local setting (Korsgaard, Ferguson, and Gaddefors 2015; McKeever, Jack, and Anderson 2015). To further illustrate how the firms' embeddedness has evolved in their spatial, social, and institutional contexts over time, this section chronologically elaborates the key patterns of how the firms have handled their mutual challenges and the changing contexts through interfirm collaborations from the early phase of the industry until today.

### 4.1. Embedding through open collaborations in the early phase

The importance of the social context for the salmon farmers and their ability to run successful firms represents a longstanding key factor in our data. The salmon farmers have collaborated to solve mutual challenges since the early phase of the industry. They explained that social relationships among the farmers at the microlevel have been continuously strong since they began salmon farming in the 1970s: 'The first one who started [salmon farming] invited people to come and visit and see exactly what he did' (F4). In this early phase, the firms' operations regarding the production of salmon were dominated by trial and error. For example, knowledge of how to get smolt to survive in saltwater was poorly developed initially: 'Virtually every smolt died the first day [in the first round of salmon farming] because the knowledge was very low' (F9). Thus, the salmon farmers faced mutual challenges in the farming process that affected their actions and collaborations.

At that time, the firms were rather small, with two or three employees each, so they had a limited knowledge base. To overcome this challenge, all the actors shared their experiences. As the main shareholder of one firm explained, 'There were quite small companies ... and it was the collegium with the other salmon farmers that became their most important arena' (F9). Through frequent contact and visits to neighbouring farmers during this early phase, the firms developed social relationships, and they became embedded in a common social context as they shared experiences

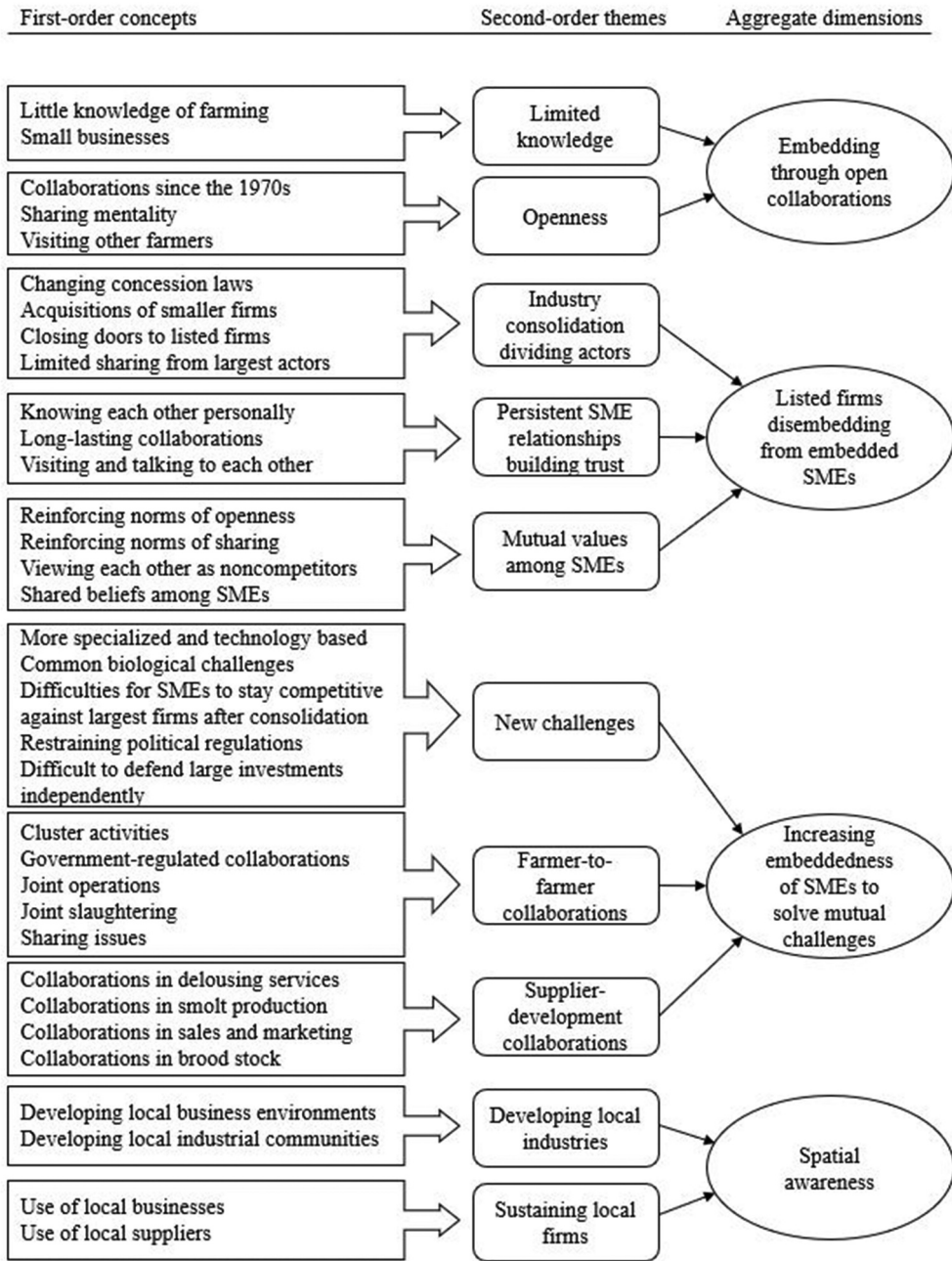


Figure 1. Data structure.

related to farming activities. These descriptions indicate that from the beginning, the firms’ institutional context consisted of mutual habits and cultural values of sharing and openness, which helped them overcome sectoral challenges by increasing their knowledge of breeding.

Several firms explained that many of the collaborations among the farmers have lasted for several decades, sometimes persisting through generations and family-firm transitions. One interviewee said, ‘I did know [another salmon farmer] a bit because his dad knew my dad’ (F2). Hence,

across the cases, our data indicated that the farmers built trust through longstanding collaborations, regular contact, and close social relationships. As we elaborate in the following subsections, we found that the strong ties forged among the farmers during the pioneering phase of the industry due to production-related challenges explain many of the firms' collaborative activities decades later.

#### **4.2. Listed firms disembedding from embedded SMEs**

As mentioned in [Section 3.3](#), this study focused on SMEs in Nordland's salmon-farming industry that were not listed but were locally owned. Since the industry's early phase, the legislation regulating the industry and its structures has undergone several changes, including phases of consolidation. Consequently, there was a clear divide between large listed firms and locally owned SMEs. The dissimilarities were most prominent with regard to sharing and openness: 'When the stock companies entered . . . it became . . . well, they are very closed and secret' (F8). The case firms noted that the linkage between social interactions and the culture of sharing that had earlier extended among all firms was now broken. One interviewee stated, 'The door closed when [a listed firm] became very large. They do not have a culture of sharing knowledge and information in the same way that small companies do' (F7).

This transformation in the institutional context distanced the largest firms from the SMEs, and collaborations between the groups more or less ceased – that is, the listed firms became disembedded. The case of Firm 1 provides an example of this gap. It was geographically close to another firm that became listed. While spatial closeness has been found to ease face-to-face interactions among actors and promote knowledge transfer (Knoben and Oerlemans 2006), Firm 1 ceased its collaboration in slaughtering with the neighbouring listed firm because the listed firm became too close-mouthed. As the interviewee stated, 'We did not get to know what happened, so . . . I think we got too small in that [collaboration]' (F1).

Nevertheless, we observed that the openness that manifested in the early phase of the industry continued among the SME case firms. They continued to share information with each other and discuss everything openly. Therefore, despite the changes in the institutional context, the case firms expressed high levels of institutional closeness. One firm representative reflected on this matter: 'But, I wonder how you could share even more before because I think it is very open today' (F3).

The SMEs continued to have frequent contact and converse with each other both formally and informally. Several interviewees described frequent informal contact among the farmers reflecting their social ties: 'You meet other breeders, talk to them, and get information, or you pick up the phone and call [them]. It's kind of informal' (F7). Modern communication methods have enabled additional means of social contact than when the industry was established. Nevertheless, many of the interviewees emphasized the importance of physical visits to others to share experiences and discuss collaborations: '[A partner farmer is] usually here a couple or three times a year, and we visit them sometimes as well' (F1). As a result of these close relationships among the actors, numerous interviewees described the other farmers as acquaintances: '[Firms 4 and 5] are our neighbours and acquaintances' (F3). Moreover, the firms expressed high levels of trust in each other: 'I've been with [the neighbouring firm] for quite a few years, so I have full confidence in them' (F2).

#### **4.3. Increasing embeddedness of SMEs to solve mutual challenges**

The firms explained that the industry had gradually become more specialized and technology based. While the mutual challenges the firms experienced in the early stage related to fundamental breeding issues, the salmon farmers have faced different threats in more recent times. First, our data revealed that the most significant challenge for all the farmers is related to the nature of this natural-resource-based industry and its inherent biological threats. In particular, salmon lice have

been a common challenge throughout the industry, with one interviewee even referring to the lice as ‘the competitor’. The lice have also affected the salmon farmers’ conditions for growth. As one interviewee noted,

Lice mean that we have struggled with the fish’s welfare in recent years, at least when you look at the industry as such. It has also meant that we have not been given conditions for growth. We have had a fairly long period of very little growth in aquaculture. (F7)

Because these challenges primarily affected the welfare of the fish, which consequently reduced the firms’ opportunities for growth, the firms were driven to find solutions to these mutual issues.

Second, the dissociation of the listed firms triggered another mutual challenge for the SMEs: to remain competitive against and compared to the largest firms. Indeed, as one interviewee explained, ‘It is very difficult to be a small firm in this because the large organizations are so strong and powerful now. It is a battle of localities, vessels, and everything – you fight in a completely different division than these big ones’ (F2). In the early days of the industry, understanding and knowledge were shared across all the firms. However, the listed-nonlisted division created a gap in how the firms approached common challenges. One specific example was that the SMEs considered themselves to be more vulnerable to the lice threat. As one of the suppliers explained, ‘When the salmon lice struck, it struck simultaneously in one area. And then it was typical that the big ones, who were positive towards lending their delousing material [to the smaller firms], needed it themselves’ (S3). Interestingly, Firms 7, 8, and 9 – the largest case firms and the ones that, similar to the listed firms, described themselves as fully vertically integrated firms – also expressed distance from the listed firms and highlighted their collaborations with other SMEs in value chain-related activities as essential for solving problems.

As a result of the recent challenges facing the industry, the peripheral locally owned firms had to act decisively, and they chose to do so by working together. Across the cases, we found that they formalized many operations-related processes through interfirm collaborations.

It probably comes from having common interests, really. And maybe you are a smaller company that may not be able to operate . . . . They do not have large enough production themselves to keep it going. So, instead of being competitors, you collaborate and scale up on those processes that are not only about producing salmon. (F5)

One way the firms strengthened their competitiveness was through direct farmer-to-farmer collaborations – for example, through cluster organizations and joint operations that increased their overall production volume. However, our most significant finding in this area was this: faced with mutual challenges, the farmers chose to access required resources by engaging in formal supplier-development collaborations with other salmon farmers.

#### **4.3.1. Supplier-development collaborations**

Related to our earlier findings that the challenges facing the SME salmon farmers drove them to take more extraordinary actions, we observed that the SMEs established and developed joint supplier firms to overcome resource barriers. It is more difficult for smaller firms with limited production to justify independent supplier investments. As one supplier said, ‘Those breeders that are not large corporations themselves typically will not have enough volume to defend the fairly large investments on the supplier side . . . investing in vessels or onshore plants or so on’ (S3). Further, we saw a desire among the farmers to focus on securing quality in their core business – producing salmon. Therefore, formal collaborations through joint ventures and supplier development became organizational tools for those firms in the same boat to remain competitive. As one farmer stated, ‘In the aquaculture industry, it is often the case that you own a service boat company together, that you have some challenge to solve and invest together to create a new entrepreneurial firm or similar’ (F7).

One area in which the firms collaborated to initiate and contribute to supplier start-ups was delousing services. The specialized resources required for delousing are not always available locally, nor can they always be borrowed from larger firms. Thus, along with other salmon farmers, the SMEs established their own firms to provide delousing services:

There was some talk among the breeders in this area that we should have had something [against the lice] . . . . So, then we found out that we [smaller farmers] too must come up with an idea . . . . We [six regional actors] started by having a meeting in the [regional centre] . . . and then it evolved. (F2)

Instead of buying services from external suppliers outside the region, the SMEs joined forces with other farmers they already knew and had mutual understandings with and reinforced those embedded ties:

Both [joint ventures] were a collection of small salmon farmers who had the same needs [the lice threat] and collaborated to solve a major problem . . . . These are people we talk to daily, so the initiative came from them, but we had just the same issue, and therefore, it was not hard for us to see that need. (F3)

Other examples of supplier-development collaborations revealed concerns regarding value-chain operations, such as smolt production, sales, and marketing. These processes were not solely related to producing salmon but were nevertheless critical links in the farmers' value chain. As one interviewee noted, 'There, [several farmers] have built a brood fish station where we have built smolt production, a slaughterhouse, a sales company, and some common functions. In a way, it is all the production-support features that are needed to produce our salmon' (F6). Similarly, several SMEs collaborated to establish a joint sales firm. Export companies depend on achieving a certain sales volume to survive. Therefore, the firms acknowledged that they needed to collaborate with other farmers to obtain critical mass. One interviewee elaborated on the start-up process of the sales organization: 'It was founded after a meeting in the Norwegian Seafood Federation. [Several salmon farmers] were present, and we agreed that we had to be able to sell the salmon ourselves . . . and then we agreed to fund the [sales company]' (F5). When we mapped other organizational agreements among the firms, we found that they also collaborated to establish smolt plants. As one interviewee said, 'We have built [a smolt plant] together with [three other salmon farmers]' (F3).

In recent years, developing the links further down the value chain appears to have become increasingly crucial for the farmers as a means to develop their production: 'When you are engaging in smolt production, and the facilities get bigger, you get more options that allow you to plan the salmon production better' (F5). Some farmers experimented with producing bigger smolt to reduce the risk of biological threats as those salmon spend less time in the sea. However, assembling more firms to realize these ventures was a necessary precondition: 'When it comes to [the smolt company], we were, in fact, the initiators who formed [the company], and then we realized that we had to bring in someone else as well to realize such a large project as a smolt plant' (F5). Another interviewee said, 'We never could have realized that smolt plant alone' (F3). Therefore, we suggest that the relationships among the firms, which developed and strengthened over time, enabled the farmers to handle the challenges they faced through interfirm collaborations.

#### **4.3.2. Spatial awareness**

In addition to these local start-up initiatives, all the firms were aware of their responsibility to buy products and services from local businesses and suppliers. They all showed strong concern for the local communities and situated areas. Despite their peripheral locations, none of the firms expressed their spatiality as a limitation or challenge to their business operations. In fact, their spatial awareness shaped some of the collaborative actions they took to solve mutual challenges, as the main shareholder of Firm 5 pointed out:

One of the thoughts when we built [the joint smolt company] was that we wanted to contribute to the local community with a company while at the same time securing us the smolt we need. This was some of the motivation to build a smolt plant here in the municipality. (F5)

Our findings showed that based on their concerns for their local communities, the firms combined their actions to solve industrial challenges and strengthen not only their own competitiveness but that of the peripheral areas in which they were situated.

## 5. Discussion

We began with the premise that embeddedness in various contexts are invaluable drivers for peripherally located firms to overcome their added liabilities. Most previous studies using embeddedness to explain the dynamics that enable collaborative activities have viewed embeddedness from a narrow, static perspective (Tregear and Cooper 2016). The salmon-farming industry is a peripheral industry that has experienced consolidation phases and production challenges, particularly challenges related to biological issues. Our examination of the industry's development and interfirm relationships revealed different embeddedness dynamics than those primarily revealed in previous studies. In this section, we discuss our findings in relation to earlier research, highlighting our contributions to embeddedness theorizing.

### 5.1. *Dynamic embedding and disembedding processes*

As mentioned earlier, previous research on embeddedness and context has strongly emphasized the social bonds between actors (Jack and Anderson 2002; McKeever, Jack, and Anderson 2015; Uzzi 1997). By studying the dynamics and evolution of the industry and the firms therein, we found that the embeddedness of the salmon farmers evolved in relation to their mutual challenges, thereby affecting their collaborations.

Our empirical findings confirmed that the social embeddedness established in the early stage of salmon farming was critical to the eventual competitiveness of the industry. During the pioneering phase of the industry, the salmon farmers all faced mutual challenges, but through social interactions, in which they discussed problems and shared solutions, they established norms and formed a strong foundation for mutual success. These interactions also embedded the salmon farmers within the social networks and informal institutional structures of the industry. Consequently, this embeddedness provided them with the resources, knowledge, and information they needed to succeed in their farming operations. Moreover, the farmers and the overall industry on the periphery became increasingly embedded in the social context through longstanding collaborations, regular contact, and close social relationships. This social embeddedness manifested in the high levels of trust that developed over time and was shared among the actors, which served to strengthen the studied firms' social embeddedness further. This finding is in line with earlier research on social embeddedness showing that the embeddedness among actors increases through repeated contact and exchanges, which, in turn, develop trust (Gulati and Sytch 2007; Howorth and Moro 2006; Vestrum 2014).

However, our findings also showed that over time, industry consolidation transformed the firms' embedding processes. This finding aligns with earlier studies demonstrating how structural factors influence microlevel processes (Welter 2011; Welter and Smallbone 2011). In the case of salmon farming in Northern Norway, the consolidation transformed the institutional context, introducing other formal and informal rules of sharing and openness between listed firms and nonlisted SMEs. While the common institutional context in the early days implied a mutual understanding of strategic actions among the firms on the periphery that were embedded in 'long-range relations implying trust and confidence' (Polanyi [1944] 2001, 64), the consolidation that occurred in the industry later on introduced contrasting ways of thinking that disembedded the listed firms from the periphery.

Consequently, the large listed firms became disembedded from their common institutional and social contexts with the smaller firms, which continues to guide the activities and expectations of the SMEs on the periphery. This division process further suggests an interrelationship between the institutional and social contexts revealed by the dynamics underlying the firms' collaborations. The division affected the social structures within the industry, and collaborations ceased between the listed firms and the locally owned SMEs. In other words, by disembedding from common contexts with the SMEs, the listed firms also dissociated from their collaborators and farming neighbours. As the listed firms grew and integrated vertically, they developed and became embedded in their own contrasting large-scale corporate context with a new culture, norms, and expectations. Fully controlling their entire value chains, they no longer depended on the resources gained through social networks as the smaller firms did. Hence, while prior studies on embeddedness in rural settings have focused mainly on the local contexts of social networks (cf. Anderson and Jack 2002; Tregear and Cooper 2016), the listed firms' disembedding and the example of Firm 1's termination of its collaboration with a neighbouring listed firm illustrate how levels of embeddedness can alter over time in a local context. In turn, these changes can affect the level of collaboration, even among firms that have been in the same local community for decades.

In addition, these embedding dynamics can be seen in the effects of the industry's consolidation and the firms' responses to new mutual challenges related to biological threats. Peripheral regions are often recognized to have liabilities and resource constraints that can hinder business development (Lublinski 2003; Tödting and Trippel 2005). In this study, we examined an industry with additional structural and consolidation-related challenges. The SMEs in our sample had experienced several phases of difficult times and had multiple opportunities to sell out, and in accordance with the logic of a modern market economy, many would say they should have done so. However, they continued to operate independently.

After the industry's consolidation, the listed firms disembedded and dissociated from the SMEs, seemingly considering their social and institutional contexts in monetary terms. In the words of Polanyi ([1944] 2001, 60), the listed firms followed a logic wherein 'social relations are embedded in the economic system', thus pursuing modern-market arguments in their operations. The locally owned firms, on the other hand, rejected these transaction-oriented efforts, in line with Polanyi's traditional arguments regarding the impossibility of a fully self-regulating market ([1944] 2001). The locally owned firms followed an approach wherein their business operations were considered in a more holistic manner also including concerns regarding their local environments. As such, they embedded their firms more deeply in the communities.

We found that the mindset of the locally owned firms was related to their steadfastness. Specifically, the mechanisms governing monetization and the stock-market involvement of the listed firms definitely affected the SMEs in peripheral regions. However, the locally owned firms persisted because their actions were characterized by another logic and were subordinate to their communities. This finding supports the notion of two ideal types of rural entrepreneurship conceptually suggested by Korsgaard, Müller, and Tanvig (2015), where entrepreneurship in the rural refers to activities following a profit-oriented logic engaging with locations only as spaces for profit (i.e. listed firms); in contrast, rural entrepreneurship refers to activities of actors that are embedded in their spatial context engaging with their localities as meaningful locations (i.e. locally owned firms).

As observed, the large firms disembedded and continued their growth by integrating and securing control over the resources they needed. Following the disembedding of the listed firms, it became critical for the SMEs to gain access to different resources to overcome their mutual challenges, thereby securing their success and ability to remain competitive (Granovetter 1985; Müller and Korsgaard 2018). Thus, the disembedding processes also affected 'new' collaborating processes: the independent farmers created and accessed necessary resources through the long-standing close relationships they had developed through informal and open collaborations with the other SMEs embedded in their common social, institutional, and spatial contexts. Further, the new



actions stemming from formal interfirm collaborations, particularly efforts related to supplier development, enabled the SMEs to control more of the value chain. By expanding and strengthening their social ties and trustworthy relationships, these collaborative firms reinforced their relationships in common contexts as embedded ties (Uzzi 1997). This led to a joint collaborative problem-solving process (Uzzi 1997) that was of significance for their competitiveness.

Thus, as found in earlier studies (e.g. Hite 2005), the development of greater embeddedness among the firms enabled collaborative resource acquisition, allowing them to remain competitive. While the larger firms' disembedding presumably affected their growth, at the same time, we saw that being embedded was decisive for the smaller independent actors to remain competitive. Given the industry concentration and the larger firms' vertical integration, the smaller firms that remained independent companies had to collaborate in joint problem solving to sustain their advantages and continued growth. For them, embeddedness seemed to be a necessity following the restructuring of the industry. As such, we observed a complex dynamic in how these peripheral firms' embeddedness developed and affected their competitiveness. Accordingly, as suggested by Korsgaard, Ferguson, and Gaddefors (2015), we propose that embeddedness should not be considered a static phenomenon but a consistently changing state that is responsive to various actors' actions.

Overall, our findings augment recent studies on embeddedness (e.g. Greenberg, Farja, and Gimmon 2018; Tregear and Cooper 2016) arguing that the dynamic nature of embeddedness is primarily an institutionalized phenomenon. In revisiting the earliest works on embeddedness by Polanyi ([1944] 2001), we found that in the case of the locally owned salmon farmers in peripheral regions of Northern Norway, the firms adhered to a traditional economic logic; that is, their actions were embedded in a common peripheral context of shared vulnerability and challenges that contributed to successful business development. The institutionalized nature was also revealed through those firms that were listed on the stock market becoming disembedded from the peripheral context.

## **5.2. Multilayered embeddedness to address mutual challenges**

In this section, we discuss how the SMEs were embedded in multiple contexts (social, institutional, and spatial) that were decisive for their decisions to engage in formal interfirm collaborations to address their shared needs and mutual challenges. First, as discussed in Section 5.1, our findings showed that the strengthening of the firms' social embeddedness over time was a fundamental circumstance that enabled the formal collaborations among the subject SMEs. This finding supports previous studies on context and embeddedness emphasizing the social bonds between actors (Jack and Anderson 2002; McKeever, Jack, and Anderson 2015; Uzzi 1997). Our study provides evidence for the idea that when actors become part of a social structure (Jack and Anderson 2002), social relationships become important sources of resources for ventures. The close social bonds were also evident in the high levels of mutual trust expressed by the firms (McKeever, Jack, and Anderson 2015). Interestingly, previous research has suggested that being too strongly embedded in a social network could have disadvantages, such as lock-in and restricted openness to new ideas (Jack and Anderson 2002). However, unlike these other studies focusing on the problems of overembeddedness in rural areas (Atterton 2007; Uzzi 1997), our findings revealed that the strongly embedded regional ties the SMEs developed after the industry's consolidation facilitated the collaborative activities that improved their competitiveness. In contrast with earlier research viewing such relationships as negative, we suggest that these embedded ties (Uzzi 1997) were critical tools that enabled the peripherally located SMEs to solve mutual challenges.

Second, the studied firms were embedded in a common institutional context (Edquist and Johnson 1997) that was detached from the listed firms. Our data showed that the subject firms shared common institutional rules and norms that shaped their relationships. Further, the mutual habits and cultural values of sharing and openness have existed among the SMEs since the pioneering phase of the industry. These findings echo that of Tregear and Cooper (2016), who

found that an industrial shellfish cooperative in a rural area was driven by the firms' sectoral embeddedness in shared norms. However, Tregear and Cooper (2016) did not find local social relationships to be as important for the development of the cooperative as it was for the firms in our study. This difference may be because Scotland's shellfish industry is a younger, more immature industry than Norway's salmon-farming industry.

Third, we found that despite their geographic distance from one another, the SMEs were embedded in a spatial context that affected their collaborative actions. All the firms expressed concern for and willingness to contribute to their local communities by, for example, adding local jobs as they increased their own competitiveness. In contrast with earlier studies (e.g. Clausen 2020) and the general understanding of the periphery representing challenges for firms and entrepreneurs (Lublinski 2003; Tödting and Tripl 2005), we found that the SMEs did not consider their peripheral locations to be a limitation for their operations. Instead, their concern and spatial embeddedness drove them to take action to complement and develop their surroundings. We argue that these successful, peripherally located, and embedded SMEs shared a fundamental logic and mindset wherein their economic actions were subordinate to the places, society, and communities in which they have been embedded for years (Polanyi [1944] 2001). For example, Firm 5 established a joint smolt company with several other SMEs for two reasons: to secure their access to smolt and to create local jobs in their municipality. Hence, unlike earlier research linking extralocal and regional embeddedness with growth performance (Greenberg, Farja, and Gimmon 2018; Kalantaridis 2009), we suggest that local spatial embeddedness can be an important tool that enables growth for both peripheral firms and their communities.

In summary, by being part of these different contextual structures (Jack and Anderson 2002), the firms we studied were able to draw upon and use resources that, in turn, created opportunities for them (e.g. establishing supplier firms). By having been embedded in a common social structure since the pioneering phase of the industry, which also created informal institutional structures, the SMEs accessed information, knowledge, production volumes, and other resources necessary for critical problem solving. To fully understand their actions to overcome their mutual challenges, we uncovered that the SMEs were also embedded in a spatial context that drove them towards efforts that would sustain both the firms themselves and their local communities. We argue that to understand the role of context in enabling firms' collaborative actions to solve mutual challenges in peripheral regions, we must look beyond the social context (Korsgaard, Ferguson, and Gaddefors 2015; Welter 2011): what enabled the farmers to handle their challenges through interfirm collaborations and maintain competitiveness was the multilayered embeddedness they developed in different contexts over time.

### **5.3. Implications**

This study has implications not only for firms in the salmon-farming industry but also for firms in industries experiencing similar structural changes and firms in similar contexts. Our findings imply that within consolidating industries, SMEs that wish to maintain their independence need to engage in interfirm collaborations to share knowledge, solve common challenges, and retain competitiveness. Further, while this study investigated embeddedness in a context wherein the industry shifted from dominance by regional SMEs to dominance by very few large global actors, our findings should have relevance to other regions experiencing similar development patterns.

Further, through studying firms in a growing industry in a spatial context that has been associated with systemic liabilities, we revealed a strong need for independent firms to be embedded to overcome mutual challenges. We argue that this need could be of particular importance to other SMEs in regions characterized by the same features. Given that industrial consolidation affects the competitiveness of firms, this study suggests that smaller firms are better equipped to conquer

mutual challenges if they are embedded. However, firms should be aware that becoming embedded takes time and is not a static phenomenon but a continually evolving state. Nevertheless, our findings imply that there are significant benefits to establishing and nurturing such ties.

#### **5.4. Limitations and directions for further research**

Although our study adds valuable knowledge regarding embeddedness and interfirm collaboration in peripheral contexts, we acknowledge certain limitations to our study that provide opportunities for further research. First, our research likely uncovered important dynamics of embeddedness that could apply to other industries. However, further investigation is needed in comparable industries and different peripheral regions to validate our findings and supplement our theorizing on embedding processes and their effects on overcoming challenges, especially those related to peripheral locations. It is also plausible that the economic situation in the salmon-farming industry in recent years may have affected the firms' actions and their various contextual ties, suggesting the need for follow-up studies in other industries.

Second, the primary data in this study relied on retrospective interviews. Further research could employ a longitudinal design to develop an even more fine-grained framework of the embedding processes among peripheral firms. Relatedly, we see opportunities for further research to explore the disembedding processes that undoubtedly affect peripheral regions. Such research should seek to answer the following question: which aspects connected to growth and stock-market involvement among listed firms trigger disembeddedness?

Fourth, focusing on embeddedness in several contexts enabled us to develop insights into the spatial dimension of firms' embeddedness. We observed that the locally owned farmers in peripheral areas bridged multiple contexts and created more opportunities. By being spatially embedded, they were able to function as powerful drivers for development in these regions by resolving the challenges not only to their business operations but also to their communities and the periphery as a whole. Therefore, future studies should further investigate the role of embedded firms as community entrepreneurs to add valuable insights on local development in peripheral regions.

### **6. Conclusions**

This study sheds new light on the embedding and disembedding processes of entrepreneurial firms in a consolidating industry in peripheral regions. While previous studies have tended to view embeddedness as a rather static phenomenon (Hellerstedt et al. 2019; Wigren-Kristofersen et al. 2019), we have shown that embedding processes are dynamic and ongoing. Our findings illustrate that in the pioneering phase of the salmon-farming industry, our case firms embedded in common contexts that enabled them to handle initial challenges. However, after the industry's consolidation, the listed firms' disembedding affected the nonlisted SMEs. To address these changes, the remaining SMEs became more deeply embedded in their common contexts. Further, we adopted a nuanced, multilayered approach considering embeddedness in various contexts (Hess 2004; Welter 2011). This approach allowed us to show how the firms' spatial embeddedness – along with their increased embeddedness in their social and institutional contexts – enabled them to solve mutual challenges through interfirm collaborations and remain competitive.

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