

## **6.2 Small Businesses Need Strong Mediators: Mitigating the Disadvantages of Peripheral Localisation through Alliance Formation**

### **Abstract**

This paper investigates how small entrepreneurial firms in two peripheral regions developed by entering the oil and gas industry. The paper draws on previous studies related to the establishment of strategic alliances and emerging clusters and contributes to these research streams by examining the disadvantages of peripheral localization and small firm size. We use a longitudinal case study based on primary data consisting of 54 in-depth interviews conducted between 2007 and 2012 to illustrate that when large-scale oil and gas projects enter a peripheral region, oil companies can moderate local firms' disadvantages related to peripheral localization by actively facilitating relationships with established national firms. By facilitating such relationships and maintaining an active moderating role, strategic alliances and emerging cluster structures can arise. A cross-case analysis illustrates that the oil company had a decisive role in one of the two cases in two dimensions: its role as intermediary between local firms and national firms and its role in fostering the development of an emerging cluster structure by stimulating the establishment of new firms through the oil and gas project. In the second case, the oil company was unable to facilitate regional development.

### **Introduction**

Numerous studies have investigated the issues related to firms operating in industry clusters (Porter, 2003; Dahl & Pedersen, 2004). Their results strongly suggest that clusters facilitate firm competitiveness and performance (e.g. Lechner & Leyronas, 2012). Leading industries are often located in areas where large concentrations of businesses operate in close proximity to each other, thus demonstrating the propensity of firms in clusters to perform better than the average, solitary firm.

Within the literature on firm performance and development in relation to geography, few studies have focused on issues related to firms operating outside core industrial regions (Anderson, 2000; Virkkala, 2007). What about firms operating outside industry clusters? How can they exploit upcoming business opportunities? This study investigates how the entry of large-scale oil and gas projects affects regional industry by facilitating interfirm collaboration, which, in turn, can foster emerging cluster structures. We focus on two newly formed strategic alliances and their processes of actively attempting to establish networks with actors in national industry clusters. The following research questions guide the empirical investigation: (1) In what way can large oil and gas companies facilitate the formation of regional networks and strategic alliances? (2) How can large-scale oil and gas projects and strategic alliances foster regional cluster formation?

In the sections that follow, we discuss the concept of clusters and how they emerge. In addition, we present a theoretical discussion of networks and strategic alliances, and we elaborate on the features of peripheral regions. Furthermore, we present our methodology, research contexts and cases. Next, we present our findings and a cross-case analysis of those findings. Finally, we present the study's conclusions and implications before closing with a discussion on the limitations of the research and suggestions for further research.

## **Conceptual Background**

### **Cluster Dynamics**

Concentrations of businesses fascinate scholars, and a number of terms describing the phenomenon has emerged, such as clusters (Porter, 1990), and agglomerations (Ellison & Glaeser, 1999). The different ways of viewing concentrations of businesses

have led to definitional issues, particularly in terms of industrial and geographical boundaries (see Martin & Sunley, 2003, for a definitional review of clusters).

After reviewing the literature on geographical concentrations of businesses and their definitions, the cluster concept was deemed the most appropriate. Industrial clusters can be defined as, “ ... a group of establishments located within close geographic proximity of one another, which either share a common set of input needs, or rely on each other as supplier or customer” (Gibbs & Bernat, 2001, p. 19).

Clusters create a competitive advantage both for the collective and individual firms (Tallman et al., 2004). As a result of both direct cluster effects and network processes, firms in clusters have enhanced access to information and resources compared with those situated outside the cluster (Schmitz, 1999; Tallman et al., 2004). Access to knowledge is central to discussions of cluster effects (Basant, 2002). Clustered firms have better access to knowledge than do remote firms because information is “sticky” and location specific (Bell, 2005). The degree to which firms can benefit from a cluster’s common knowledge base—and thus facilitate development—is premised on

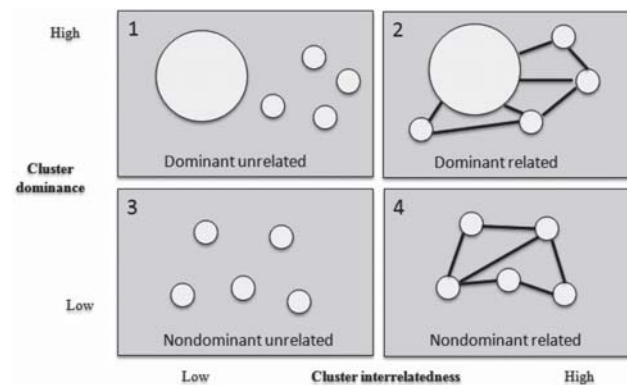


Figure 1. Landscapes of regional cluster configurations.  
Source: Romanelli and Khessina (2005, p. 350).

firm performance. Additionally, the size and role of firms within clusters vary, influencing the ways in which clusters function (Lechner & Leyronas, 2012).

Romanelli and Khessina (2005) developed a model illustrating four distinct types of regional cluster configurations. Figure 1 shows that the Type 1 configuration is characterized by a situation in which one dominant cluster operates independently and is unrelated to other regional clusters. The Type 2 configuration represents a region in which the operations of one dominant cluster are related to other smaller clusters, such as in Silicon Valley. Several nondominating clusters that share no connection represent the Type 3 configuration, which Romanelli and Khessina deemed to be the most common. Finally, the Type 4 configuration consists of several nondominating clusters that are interrelated (Romanelli & Khessina, 2005). In the cross-case analysis, we further elaborate these four different modes of regional clustering. We also emphasize the important role of moderators by illustrating how moderators facilitate and affect the dynamic process of clustering in peripheral regions.

### **Cluster Emergence**

The phenomenon of cluster emergence remains theoretically and empirically underexplored. The early work of Marshall suggested that clustering occurs because firms realize benefits related to reduced transport costs, whether they are associated with people, goods, and/or ideas (Marshall, 1920). These assumptions have been somewhat criticized for being too general because they do not consider the possibility that firms are heterogeneous (Ellison et al., 2010).

Because firms have different levels of resource bases, capabilities, human capital and so forth, firms will also have different sets of strategies and abilities to develop. Shaver

and Flyer (2000) showed that firms' different levels of maturity and dynamism affect their motivation to geographically cluster. Although weak firms have little to lose and much to gain by clustering, strong dominating firms can actually suffer from clustering because of the potential loss of exclusive possessions (e.g. technologies, employers, suppliers). Thus, heterogeneity can play a role in firms' choice of location.

Extending this view is the importance of so-called focal firms in clusters. Focal firms are superior actors that often orchestrate and engage in a disproportionate part of a cluster's activity and that have the ability to either intentionally or unintentionally transfer information and technology to smaller, related firms (Lazerson & Lorenzoni, 1999). For example, focal firms can facilitate new market opportunities and thereby spur start-ups, function as role models for other firms and take on the role as agents of change (Boari, 2001). The potential effects that focal firms can facilitate highlight the importance of such actors in stimulating both the creation of clusters and the development of existing ones.

To adapt to changing environments and exploit synergies between firms, some heterogeneity must exist (Menzel & Fornahl, 2010). Some scholars have argued that cluster homogeneity, including the absence of external actors, provides the highest value for firms. Because of their similar sets of cultural and historical backgrounds, local communities will, in a way, stick together and share collective goods across organizational borders (Lazerson & Lorenzoni, 1999). However, the potential risks of such introvert milieus are that their firms' exposure to new ideas declines, their ability to learn new skills weakens and their ability to invent new technologies is eliminated (Nelson & Winter, 1982).

Evolutionary economic geography scholars have studied spatial clustering but have reported contradictory results. Håkanson (2005), for example, stated that globalization can spur clustering in three ways. First, increased volume of demand from a single location can increase the scope of specialization and division of labour. Second, globalization may increase the volume and importance of foreign direct investments. Finally, globalization may facilitate the immigration of individuals with skilled expertise. All these issues may be of particular importance in peripheral regions that lack the competences and capabilities necessary to react to changes in the market.

Several longitudinal case studies have provided in-depth accounts of actual cluster formations. Some scholars have claimed that clusters emerge as an evolutionary process owing to firm spinoff formations (Kenney & Patton, 2006; Dahl et al., 2010). In addition, scholars have found support for the proposition that cooperation between firms, suppliers and universities plays a significant role in emerging clusters (Brenner, 2005; Scott, 2005).

The establishment of linkages to external knowledge providers can facilitate cluster emergence. The ability of entrepreneurs to first establish such linkages and then maintain knowledge flow might gradually facilitate regional cluster structures (Henn, 2013). Thus, external knowledge is important for cluster formation and can be assumed to be particularly important in peripheral regions.

The phenomenon of cluster emergence is unclear, and no definitional or conceptual consensus on cluster emergence exists. This section of the paper illustrates that complexity and shows that clusters emerge from idiosyncratic conditions.

### **Peripheral Regions, Networks and Strategic Alliances**

The concept of peripheral localization is often associated with negative descriptions based on distance from a core (Anderson, 2000). Small- and medium-sized enterprises (SMEs) in peripheral regions face additional challenges to their competitiveness beyond the innate limitations associated with organizational size (Cooke, 1996; Vossen, 1998). For example, firms may suffer from low levels of research and development and innovation because of the dominance of SMEs in traditional industries, the absence of specialized clusters, and the lack of connections to knowledge providers and support institutions (Tödtling & Trippl, 2005).

Barriers related to remoteness can be mitigated by establishing networks, which increase access to knowledge and scarce resources (Gulati, 1998). Previous studies illustrate that knowledge networks positively affect innovative performance (Casanueva et al., 2013). There are two forms of knowledge networks: (1) contact networks and (2) alliance networks. Contact networks are dynamic relationships in which nonformalized interaction flows between firms and other actors, whereas alliance networks are usually based on formalized types of collaboration, such as joint ventures and strategic alliances (Huggins & Johnston, 2010). In terms of improving firm performance, managers tend to focus mostly on establishing formal relationships (Doz & Hamel, 1998).

The concept of structural holes (Burt, 1982) has often been linked to network studies. The concept addresses the absence of ties among actors (Burt, 1992). A recent study has found a positive relationship between firm performance and regional networks rich in structural holes (Lechner & Leyronas, 2012). In other words, if one firm is able to establish a relationship with several firms that are not connected to one another, firm performance will improve.

A strategic alliance is a cooperative arrangement between two or more firms with the goal of improving performance and competitiveness by sharing resources (Ireland et al., 2002, p. 413). The reasons why strategic alliances are formed can often be explained in relation to a firm's surroundings (Gulati, 1998). If a firm is able to conduct its business independent of changes in its environment, partnerships are less important. By contrast, a firm may face challenges represented by factors such as resource deficiencies when its surroundings are changing (Park et al., 2002).

Previous studies have demonstrated that in alliances consisting of small and large firms, small firms can benefit from access to resources, skills and legitimacy (Alvarez & Barney, 2001; Yang et al., 2013). Linking these benefits to the disadvantages of being in peripheral regions, an assumption can be made that small firms in peripheral regions may struggle to benefit from alliances because of a lack of alliance capabilities.

The previous sections of this paper discuss the concepts of industry clusters, networks and strategic alliances in relation to the contextual issue of peripheral regions. Because smaller firms have been shown to obtain the greatest benefits by establishing alliances with larger firms, a relation can be drawn to the Types 1 and 2 cluster configurations in Figure 1. In this way, the view on strategic alliances coincides with the view of cluster configurations in this study. The Types 3 and 4 cluster configurations, on the other hand, are characterized by the absence of a large dominant actor. By building on the notion that the greatest benefits can be obtained by unifying small firms with large firms, the Types 3 and 4 cluster configurations can be assumed to generate fewer benefits. In addition, in peripheral regions that are characterized as weak and resource deficient, the same reasoning can be assumed to apply when related to the role of large firms in cluster emergence.



## Methods

### Research Contexts

The first region is characterized as a traditional coastal community, where the local industry is composed of fisheries and basic mechanical industries. In addition, an oil and gas supply base that serves basic offshore activities has been located there since the 1980s. In the early 2000s, a major oil company decided to develop an oil and gas field off the coast of the municipality and that its offshore activities would be served from a supply base within the municipality. This decision resulted in a vast mobilization led by local politicians and local businesses. Between 2007 and September 2012, the region experienced an immense industrial development, resulting in the investment of more than 125 million Euros. In addition, several national and international firms have established themselves in the municipality to be located closer to the offshore activities.

The second region has similar characteristics to the first region, but it has hosted an oil field operations centre since the mid-1990s. Thus far, little activity has been created outside the operations centre even though the oil company has organized

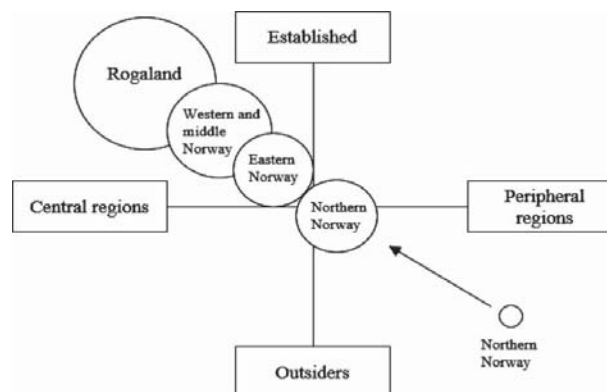


Figure 2. Supply industry clusters in Norway.

Source: Henriksen (2010, p. 370).

several development projects for local businesses from that location. Figure 2 illustrates the size and strength of the national oil and gas supply industry clusters. The supply industry situated in northern Norway is currently showing signs of moving from a state of dispersion with many peripheral firms to one that is more central. Projects Alpha and Beta have contributed to this movement.

The notion of peripheral localization primarily describes the geographical distance to a central location (Figure 2). In this study, however, both regions are also suffering greatly from the absence of strong actors that have national and international relationships. In many ways, the two regions provide symptomatic displays of similar small and peripheral regions in Norway that are characterized by stagnation and inertia.

### Research Design and Data Collection

A longitudinal case study approach was deemed appropriate. We collected data in the period between 2007 and 2012, focusing on local industrial development related to the introduction of large-scale petroleum projects.

The primary data consist of 54 formal interviews with key informants related to two large-scale projects. We collected primary data from three categories of actors to obtain a compound data material consisting of business representatives, public

Table 1. Overview of informants

Year	Business representatives	Public officials	Sector experts	Total
2007	7	4	4	15
2008	6	3	2	11
2009	6	3	1	10
2010	7	0	0	7
2011	4	1	0	5
2012	3	2	1	6
Total	33	13	8	54

officials and sector experts. Formal interviews lasted, on average, about one hour. Table 1 presents an overview of the informants.

### **Data Analysis**

All interviews were transcribed verbatim and analysed using the Nvivo coding software. In the coding process, we followed the basic rule for the constant comparative method suggested by Glaser and Strauss (1967). After completing the two steps of the coding process, the data consisted of four core categories:

- (1) Role of moderator<sup>1</sup>
- (2) Structure and formality of alliances
- (3) Disadvantages of peripheral localization and small firm size
- (4) Conditions for firm development and cluster formation

We asked the informants whether they agreed with the interpretation and representation, and this data triangulation improved the quality of the study (Patton, 2002). Discussing our findings with fellow researchers and informants also increased the credibility of our observations. We claim that the two cases might facilitate learning that can be transferable to similar cases.

### **Case Presentation**

Two units are analysed in this study, strategic alliance A (SAA) and strategic alliance B (SAB). Table 2 presents the case properties.

#### **Strategic Alliance A**

SAA was established in 2008, when eight regional firms recognized the possibility of increasing their efforts in the regional oil and gas industry. Today, SAA consists of seven individually owned firms, each with a similar equity share in the business unit. Combined, the seven firms employ more than 500 people and exceed 38 million Euros in turnover (2012).

Table 2. Case properties

	SAA	SAB
Number of firms	7 (8)	11
Industry composition/ services provided	Welding, plumbing, mechanical fabrication, engineering, materials testing, etc.	Engineering, hydraulics, electrical engineering, technical support and provision, etc.
Employees	500	520
Turnover (Euros)	38 million	57 million
Characteristics	Mainly traditional production/ service provider	More technically oriented
Formality of cooperation	High	Low
Level of heterogeneity	Medium	High

SAA managed to enter into a strategic partnership with main contractor A (MCA), thereby mitigating the disadvantages of small size and remoteness to central markets and decision-makers. After the establishment of SAA, one of the first objectives was to acquire a much-needed source for legitimacy and visibility. Legitimacy was achieved first by qualifying for the Achilles® joint qualification system, a system that identifies, qualifies, evaluates and monitors suppliers and sub-suppliers. A further measure for attaining legitimacy in the oil and gas industry was to qualify for an ISO 9001 qualification. The overall objective of SAA is to serve maintenance and modification markets related to petroleum activities in the Norwegian Sea.

### **Strategic Alliance B**

The formation of SAB involved a different approach. In 2009, main contractor B (MCB) entered into a collaborative agreement with a regional firm in northern Norway. In order for the regional firm to be able to serve a potential contract, an agreement was made to engage a newly formed firm network consisting of 10 regional firms. This agreement soon led to the establishment of SAB between the individual regional firm and the firm network. SAB represented 11 firms with a combined employment of 520 and a total turnover exceeding 57 million Euros (2012).

As opposed to SAA, SAB already had its liabilities covered in the form of a binding agreement with MCB. However, SAB differed from SAA in that the individual firm had a somewhat dominant role in relation to the original firm network. As with SAA, the semidominant firm made several strategic investments, including the ISO 9001 qualification and Achilles® registration. The role of the original firm network was to function merely as a supplier to the semidominant firm. This split liability eventually resulted in the separation of the alliance, and the two units returned to their traditional states. At the conclusion of this study, only the semidominant firm had a role in project Beta.

## **Empirical Findings**

### **Project Alpha**

In Figure 3, Square 1.1 portrays the initial situation before SAA was established. Oil company  $\alpha$  clearly signalled that it emphasized the development of regional suppliers. “From day one, we have focused on contributing to local development based on commercial criteria”, one representative stated. To facilitate this development, one of the company’s first tasks was to communicate that for regional firms to be perceived as potential suppliers, they first had to join forces. This need arose from the regional firms’ small size and lack of capacity.

SAA representatives and sector experts highlighted the important role of the oil company in emphasizing cooperation among regional firms. In particular, the oil company’s plenary seminars were mentioned as both a valuable arena for networking and a conduit for information exchange. The seminars led to initial discussions about cooperation among people working in the regional firms. When  $\alpha$  finished conducting this first stage of mapping potential regional suppliers, a number of firms were deemed appropriate. The second stage of approaching regional firms was to conduct

meetings with each individual firm (Square 1.2). A state of semirelated connectedness among  $A_1, A_2, \dots, A_8$ , and  $\alpha$  was thus constructed.

Sometime after  $\alpha$  had approached each separate firm, SAA was established (Square 1.3). SAA first established a common understanding and agreement of how this interfirm unit was to be organized. A SAA representative explained that the alliance was based on highly formalized premises that were fully agreed upon among all alliance members. The degree of formality assured the interests of all the firms and had a mitigating effect on their innately competitive nature.

One apparent problem remained: SAA lacked the legitimacy and trustworthiness necessary to be perceived as a potential supplier. SAA faced a paradox: to become a supplier in the oil and gas industry, a company should possess a list of achievements, but none of the SAA members did so.

The last stage in our model incorporates the entry of MCA. During the formation and establishment of SAA, MCA was awarded the main contract for the maintenance and modification services in project Alpha. The next move for  $\alpha$  was to actively facilitate an arena for MCA and SAA to communicate and share ideas. This move resulted in two outcomes. First,  $\alpha$  awarded a maintenance contract to SAA. Second, SAA and MCA established a formalized relationship in which MCA was to function as a safety switch for SAA's fulfilment of the contract. At the same time,  $\alpha$  actively monitored this process (Square 1.4).

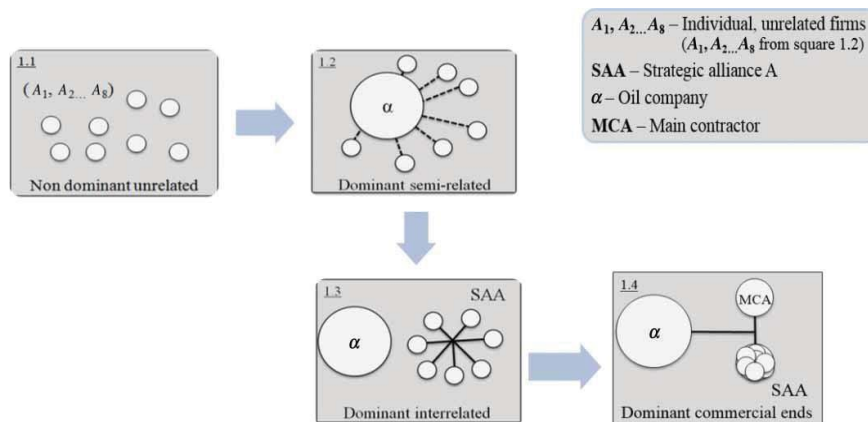


Figure 3. The effect of moderator on alliance and cluster formation (adapted from Romanelli & Khessina, 2005).

### Project Beta

In Figure 4, Square 2.1 illustrates the initial situation prior to the establishment of SAB. Here, the individual firm had semidominance over an established local firm network, and the individual firm and the firm network competed for the same regional customers. In Square 2.2, SAB was formed as a semirelated alliance. At that time, MCB had been awarded a maintenance and modification contract from oil company  $\beta$ , which included the involvement of SAB. The alliance was established because the semidominant firm depended on additional capacity to carry out its 50% share of the contract with MCB. Thus, the basis of the SAB alliance was of a different nature than the collectively established SAA. In addition, SAB was formed with no influence from  $\beta$ .

$\beta$  and MCB communicated only with the semidominant firm. At the same time, an independent variable was introduced in the form of a corporate development programme (CDP) aimed at developing and qualifying northern Norwegian suppliers. The information then flowed from  $\beta$  to SAB through the CDP, while the semidominant firm fed information from  $\beta$  and MCB to the alliance partners. At this stage of

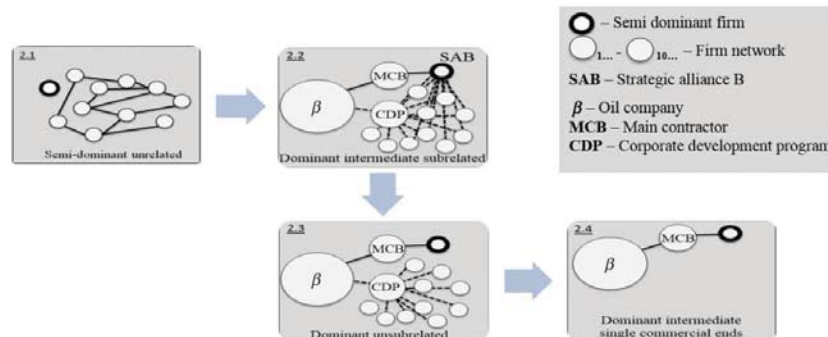


Figure 4. The failure of moderating alliance and cluster formation (adapted from Romanelli & Khessina, 2005).

development, SAB started to show signs of deterioration, and interaction between the original firm network and the semidominant firm weakened. Eventually, this lack of communication led to the separation of SAB, which resulted in the semidominant firm operating independently of the original firm network (Square 2.3). Following the separation, the firm network's only relation to Beta was its mediated communication with  $\beta$  through the CDP. Square 2.4 illustrates the end situation, in which the remaining actors in project Beta were  $\beta$ , MCB and the semidominant firm.

## Cross-Case Analysis

### Role of Moderator

Initially, projects Alpha and Beta shared various similarities. However, as the empirical findings illustrate, each project's sequence of events resulted in a different outcome. For the regional firms in project Alpha, the path into the oil and gas industry was initiated with the establishment of an alliance network, which can be observed as a formal mode of cooperation (Huggins & Johnston, 2010). A representative from SAA explained the reasons for establishing an alliance network:



“The alliance was established as a direct consequence of the oil company’s interest in having us do so. Individually, each company in the alliance simply represented too much of a risk for  $\alpha$  to consider us to be a potential supplier.”

Thus, the role of oil companies  $\alpha$  and  $\beta$  was central to the projects’ outcome. Figure 3 illustrates, first, how  $\alpha$  facilitated the formation of SAA through direct interaction with each individual firm and, second, how  $\alpha$  moderated the interrelation between MCA and SAA. Figure 4 shows that oil company  $\beta$  chose a different approach. Its role as moderator was effectively delegated to MCB, the semidominant firm and the CDP. Both  $\alpha$  and MCA established field offices to overcome the vast geographic distance to the new suppliers. An SAA informant highlighted the opportunity for daily communication with the contractor as a crucial success factor:

“I believe the localising of key project functions in the region, and purchasing and recruitment in particular, represents the key to success. This mitigates the cruel disadvantages related to lack of proximity.”

Table 3 further illustrates the oil companies’ different approaches towards regional firms in projects Alpha and Beta.

Table 3. Quotes illustrating the role of moderator

	Alpha	Beta
Role of moderator	<p>“<math>\alpha</math> has been exemplary in terms of feeding the regional suppliers with information about the industry, but even more importantly; they have connected regional suppliers to national and international actors. This way, regional suppliers have had the opportunity to display their skills and capabilities” (sector expert)</p> <p>“We bring in our skills and expertise in cases where firms lack specific assets. This way, local firms can increase their sets of competences” (<math>\alpha</math> representative)</p>	<p>“We soon established a quality assurance system, and they (MCB) visited us three times for revisions. This illustrates that in fact we were facing the same strict requirements set by <math>\beta</math>” (semidominant firm representative)</p> <p>“The way that <math>\beta</math> has approached the region is pretty much the exact opposite of what <math>\alpha</math> has done in the Alpha project. <math>\alpha</math> has displayed a true will to challenge the traditional way of approaching local communities” (sector expert)</p>

“ $\alpha$  functioned as a door-opener for them (SAA), and now they have been awarded a contract. This is both exemplary by  $\alpha$ , and necessary for regional suppliers trying to develop” (sector expert)

“They ( $\beta$ ) have been here for quite some time now, but really, nothing has happened” (public official)

“ $\alpha$  has chosen to organize the contract structure so that smaller firms can take part.  $\beta$ , on the other hand, has a business-as-usual-approach to their project. The size and complexity of contracts are simply unattainable. Basically their contract structure excludes close to all firms in our region” (SAB representative)

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### **Structure and Formality of Alliances**

In SAA, the formality of cooperation was premised mainly on the individual firms' equal equity share in the alliance. The level of formality in the cooperative arrangement led to a mutual interest in fostering a collective good for the alliance. This collective good, in turn, proved to minimize potential conflicts arising out of different strategies and levels of influence related to the SAA activities. The composition of SAA's actors can be argued to represent an appropriate level of heterogeneity in terms of both services/goods provided and firm size (Menzel & Fornahl, 2010).

The regional firms in SAB based their mode of cooperation on less formalized agreements. The nature of this type of network is more closely related to random interaction (Huggins & Johnston, 2010). An informant from the firm network explained the allocation of responsibilities between the actors in SAB: “*They (the semidominant firm) do all of the formal coordination (with MCA), while our role is to do what we are asked to do.*” This dimension of interaction and informal relationship led to the collapse of SAB. This result can be analysed in relation to the findings of Lechner and Leyronas (2012) indicating that firm performance is positively associated

with firms' connectedness in a regional network, and to the findings of Johannisson (2000) indicating that firms with more partners have better firm performance.

The semidominant firm, which successfully survived the processes of separating from SAB and intensifying relationships with both MCB and b, had performance attributes surpassing those of the firm network and held a higher rank in the Beta value chain. Thus, the level of heterogeneity in SAB may have been too high, as Menzel and Fornahl (2010) found in their study.

Empirical studies have shown that a positive relation exists between structural holes and firm performance (Lechner & Leyronas, 2012). The semidominant firm obtained a network rich in structural holes. Square 2.2 in Figure 4 illustrates a situation in which

Table 4. Quotes illustrating the structure and formality of alliances

	Alpha	Beta
Structure and formality of alliances	<p>"One of the first things we did was to establish a set of common principles. The main principle is that all major decisions will be made based on majority verdicts" (SAA representative)</p> <p>"All alliance partners get access to three main aspects through this contract; access to new markets, firm development, and exclusivity due to the status of our partner (MCA)" (SAA representative)</p> <p>"I have no belief in business vice cooperation based on nonformalised agreements. All eight firms have paid the same amount of money into the unit (SAA). I believe this is the only way to secure cooperation based on commercial criteria where all partners' interests are retained" (SAA representative)</p>	<p>"Our main goal is to develop our oil and gas related competences through this contract, and thereby be able to take on future contracts. Part of this competence leveraging will be developed by drawing on the skills of our alliance partners" (semidominant firm representative)</p> <p>"We wanted direct contact with them (β) because of two reasons: 1; the ability to develop our competences through direct and continuous interaction with the oil company, and 2; the opportunity to yield more profit. As a sub supplier the margins are awfully low because of the high number of competitors" (firm network representative)</p>

the semidominant firm benefits from information flows from both dominant parties in the relationship ( $\beta$  and MCB) and from the firm network. This relationship marks what Burt (1992) has called the basis of competition, namely, the process of securing productive relationships (Table 4).

**Disadvantages of Peripheral Localization and Small Firm Size**

Previous studies have suggested that SMEs in peripheral regions face additional challenges to competitiveness beyond organizational size (Cooke, 1996; Vossen, 1998), and such additional challenges were observed for the regional firms in this study. The regions in which the firms were located have traditionally suffered owing to their vast distance from both markets and decision-makers. However, the different characteristics often associated with peripheral regions were somewhat challenged in this study. A representative from oil company  $\beta$  recalled that regional firms possessed novel expertise:

“We have visited quite a few firms up there, and what we see is that, surprisingly, many of them possess valuable knowledge and expertise. In my opinion, much of what we are looking for actually exists close to the field activities.”

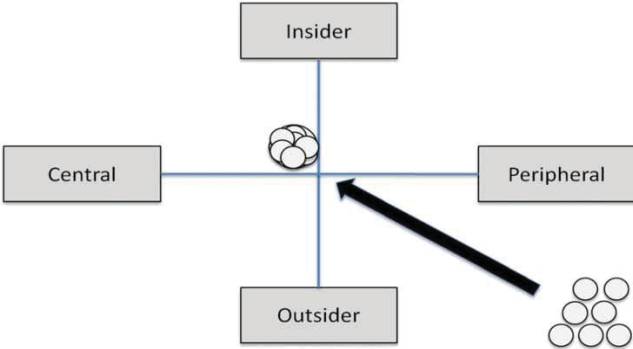


Figure 5. The mitigating effect of cluster formation on level of periphery.

This statement clearly illustrates some of the many issues that northern Norwegian firms face. Because of their lack of proximity to strong clusters, large firms such as MCA and MCB have never been forced to look for suppliers outside their own contexts.

Figure 5 illustrates the shift in how the regional firms in SAA moved from a state of fragmentation to a state of an emerging cluster. A fundamental change has taken place since the development of the oil and gas industry in the Alpha region during the mid-2000s. Firms' remoteness to core actors in Norwegian clusters has been mitigated through a combination of three major factors. First, northbound offshore activities have forced established cluster participants to consider remote partnerships and branch establishments. Second, an increased recognition of northern Norwegian suppliers has occurred because of firms' different levels of upgrading and positioning. Third, national policy pressure aimed at both oil companies and main contractors to contribute to regional development has increased.

Table 5. Quotes illustrating the disadvantages of peripheral localization and small firm size

	Alpha	Beta
Disadvantages of peripheral localization and small firm size	<p>"One of the key challenges is to have the opportunity to show what we are capable of. We have most certifications and we have excellent references from related industries, but still it's a long way to actually deliver products or services to oil companies or main contractors" (SAA representative)</p> <p>"Some refer to us as a well hidden gem" (SAA representative)</p>	<p>"Northern Norwegian firms lack three critical components; networks to relevant actors, relevant competences and capabilities, and financial capital" (semidominant firm representative)</p> <p>"We spend millions annually on networking and taking part in relevant arenas. This is extremely cost demanding in the process we are in (entering the oil and gas market), so hopefully it will pay off in the future" (semidominant firm representative)</p>

“If main contractors to oil companies could choose for themselves, I’m certain they would ignore the hassle of looking towards Northern Norwegian for potential suppliers” (SAA representative)

“Entering the oil and gas industry is no easy task. It seems to me like either you have to know ‘somebody’, or you have to more or less pay a contractor in order to take a shot” (SAB representative)

“After a while we saw the cynical sides of the industry. For example, when the contract is signed you have to constantly make sure you get your piece of the pie. This was not what we expected, but I guess it is just a part of the game. Large firms have their ways of cooperating with smaller partners. We realised that we had been naive” (SAB representative)

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The combination of these three factors applies to both project Alpha and project Beta. However, the developments that started taking place during the mid-2000s were most prominent in the Alpha region during the period of this study. The major decision to select an onshore supply base location was made in 2009. This decision spurred extensive investment activity by both municipality administrations and private investors. By 2013, nearly 140 million Euros have been invested in infrastructure, and more than 20 firms have been established in the region (Table 5).

### **Conditions for Firm Development and Cluster Formation**

An emerging cluster structure was observed in the Alpha region because of two main events. First, the regional firms were able to form a strategic alliance with a large national firm while maintaining a close relationship with oil company  $\alpha$ . Regional municipalities also played an important role in making heavy investments in infrastructure for the new industry. This infrastructure, in turn, attracted private capital investments and resulted in the establishment of additional firms in the region (Håkanson, 2005). By December 2012, the Alpha region hosted a growing cluster. This development is very similar to the cluster formation process and place-specific conditions that have been proposed by Feldman and Francis (2004).

One observed cluster effect was the increased availability of resources and flow of external information benefiting firms in the Alpha region (Tallman et al., 2004; Henn, 2013). Additionally, the competitiveness of firms in the Alpha region has drastically increased, mainly because of their increased legitimacy in the national oil and gas industry. Oil company  $\alpha$  had a central role in stimulating the emerging cluster. The ability to cause change and facilitate new market opportunities among regional firms is consistent with existing knowledge about focal firms (Lazerson & Lorenzoni, 1999; Boari, 2001).

A second observation relates to the degree of variation among regional firms. Originally, firms in the Alpha region suffered from stagnation and inertia, but because of their different sets of skills and capabilities, the collective strength (SAA) turned out to represent a catalyst for development. This finding supports earlier studies that have shown that heterogeneity among firms (Nelson & Winter, 1982; Menzel & Fornahl, 2010) and the development of old traditions (Anderson, 2000; Best & Xie, 2006) play an important role in firms' ability to adapt to changing environments.

A third finding supports earlier studies that have suggested that external networks can mitigate disadvantages related to a lack of proximity to industry clusters (Jarillo, 1989; Gulati, 1998). Several informants stated that the semidominant firm spent vast resources on entering national arenas to overcome the barrier of its peripheral localization. Because of these activities, a critical relationship was established with MCB (Table 6).

Table 6. Quotes illustrating the conditions for firm development and cluster formation

	Alpha	Beta
Conditions for firm development and cluster formation	<p>"If you look at similar projects in similar small regions, we actually have an advantage. We already have an established industry that represents a promising starting point" (SAA representative)</p> <p>"If now things actually start to roll, I'm sure that this will set off an immense development. Activity fosters activity" (Sector expert)</p> <p>"We want other firms to establish within the region because we believe that a wider set of actors will, as a collective, have increased chances of gaining ground in the national and international market for oil and gas services" (SAA representative)</p> <p>"Many of our existing suppliers are dissatisfied with our emphasis of establishing up there (the Alpha region). They see it as an unnecessary cost because they are able to serve us from their current location down south. We still communicate it's an advantage to be located closest to the project activities" (a representative)</p>	<p>"One of the major things we have done is to go through with the ISO9001 qualification. It illustrates a kind of commitment, or seriousness if you like. In addition, we invested in new state of the art headquarters. These, and other things, I believe has been noticed in the national arena. It illustrates that we are ambitious and proactive" (semidominant firm representative)</p> <p>"I believe the way forward is to concentrate Northern Norwegian oil and gas activities in two or three onshore locations, no more than that. It's simply not enough offshore activity (drilling, exploration, etc.) or existing industry to warrant oil and gas hubs in every other municipality" (sector expert)</p>

## Discussion

This paper poses two research questions: (1) In what way can large oil and gas companies facilitate the formation of regional networks and strategic alliances? (2) How can large-scale oil and gas projects and strategic alliances foster regional cluster formation? Studies have shown that networking is more prevalent among firms with



high spatial proximity (Huggins & Johnston, 2010). Similarly, our findings suggest that in peripheral regions, spatial proximity can be considered a key determinant of the formation of regional strategic alliances.

In project Alpha, the role of oil company  $\alpha$  was a prominent feature in facilitating a successful alliance formation. The catalyst for its success rested on the moderating effect of merging a regional alliance with a large national contractor. In project Beta, oil company  $\beta$  had no direct moderating role in the process of fostering SAB, nor did  $\beta$  affect the relationship between SAB and MCB. Accordingly, because of its direct interaction with MCB, the semidominant firm in SAB was the only regional firm that gained access to external knowledge and learning. Although scholars have claimed that firms independently identify the need for an alliance and the partners available (Gulati, 1998), our findings show that dominant actors may facilitate the best possible approach to alliance formation. Our findings suggest that the alliance formation process takes a rather different approach in peripheral regions because of limited access to alliance partners and a lack of alliance capabilities.

In addition, our findings illustrate that for small firms, establishing alliances with large firms facilitates the highest value in terms of accessing resources, knowledge and new markets. Despite varying results in both this study and previous studies (Vandaie & Zaheer, 2013), our findings are consistent with much of the literature on strategic alliances between small and large firms (Alvarez & Barney, 2001; Yang et al., 2013).

In project Beta, a structural hole (Burt, 1995) was observed between the initial firm network and MCB. This structural hole created a knowledge gap between the two actors owing to the lack of formal ties, whereas the semidominant firm gained early access to higher-quality information. Additionally, the semidominant firm was placed in a situation in which it had the ability to take part in two separate interactions

(Gnyawali & Madhavan, 2001). This structural hole and the subsequent knowledge gap ultimately led to SAB's failure. The findings thus support earlier studies that have demonstrated that cooperative arrangements facilitate the transmission of knowledge and information (Koka & Prescott, 2002; Casanueva et al., 2013).

With regard to research question two, in project Alpha, oil company  $\alpha$  had an active role. The role of dominant firms is considered one of the prerequisites for cluster development (Rugman & Verbeke, 2003; Doutriaux 2008). The bases of what developed into an emerging cluster structure were, therefore, several nondominating regional firms and one that held a dominant leadership role. These bases can be characterized as an asymmetrical cluster (Rugman & Verbeke, 2003), in which a dominant firm intentionally facilitates development by first linking regional firms (as in this case) and later linking those firms with a main, national contractor.

The level of firm heterogeneity played a role in facilitating the emerging cluster structure in project Alpha. As discussed in the theoretical section of the paper, firms' different characteristics influence the motivation to geographically cluster (Shaver & Flyer, 2000). In this paper, our empirical findings illustrate that because of the lack of other alternatives, the small peripheral firms had no objections to clustering. MCA and MCB, on the other hand, were willing to put efforts into establishing strategic partnerships with firms located in peripheral regions (Lazerson & Lorenzoni, 1999).

Although earlier studies have focused mainly on external knowledge channels in welldeveloped clusters (Henn, 2013), our study brings a novel contribution premised by the context of a peripheral and emerging cluster.

## **Conclusions and Implications**

Several conclusions can be drawn from this study. First, in the event of a large-scale project entering a small peripheral region, the dominant actor needs to function as an active and inclusive moderator to facilitate firm development and potentially emerging cluster structures. The role of the dominant actor as a moderator is important because of dominant actors' ability to share knowledge and their authority in connecting large firms to small regional firms. Second, if regional firms are to successfully establish forms of alliances or networks, their cooperation must be based on formalized agreements.

The theoretical implications of this study can first be associated with networking in entrepreneurial firms. Our findings suggest that firms aiming to develop by entering new markets are affected by the mode of networks that they are able to establish. Informal, weak-tie networks may lack the necessary structure to properly release the potential benefits of collective efforts. In addition, our findings support the literature on structural holes. By linking the dimension of peripheral localization to the concept of networks, theoretical progress can be made.

Moreover, our study clearly illustrates that dominant firms in large-scale projects play a crucial role in the emergence of potential cluster structures. In peripheral regions, the presence of such actors can facilitate external linkages that contribute to knowledge and learning, thus mitigating the disadvantages of small firm size, remoteness and a lack of legitimacy for peripherally located firms. This is a novel, but context-dependent, theoretical contribution to the existing literature on cluster emergence.

The practical implications of our study are the following. First, entrepreneurs in similar contexts may learn from our findings related to the structure of the networks established, and that dominant actors that enter a region can be beneficial in the sense that they can mitigate the disadvantages of firms' peripheral localization.

Second, policy-makers can draw upon our results by examining how policies can affect the approach of dominant actors entering small regions. Policy-makers should emphasize that parts of project organizations should be localized at project sites. Measures should be aimed at project managers at the earliest project phases. In this way, project managers would have the possibility to adapt and implement measures aimed at project stakeholders.

Finally, we illustrate that the highest value for small peripheral firms trying to enter new markets results from interactions either with large firms central to large-scale projects or direct interactions with project operators.

### **Limitations and Further Research**

The study has several limitations related to its methodological approach. The data used to investigate the cases were based on accounts provided by key individuals. Although most of these individuals represented their respective firms, some responded on behalf of a larger group of firms (e.g. the manager of the firm network in SAB).

Moreover, our results show that the collective gain differs between SAA and SAB. One possible explanation of this result is the differing composition of the firms in the two alliances. The traditionally oriented characteristics of the firms in SAA may have facilitated entry into the new business area. Further, both SAA and SAB (except for

the semidominant firm) firms were viewed as homogeneous groups. If a distinction had been made among the firms, we may have arrived at different results.

These issues can be explained mainly by the selection criteria set by the regional populations, however. When studying phenomena in peripheral regions, the amount of accessible cases can be very limited, as was the case in this study. Previous studies have illustrated that the performance and composition of clusters and regions vary; thus, owing to the idiosyncratic features of case regions, our findings cannot be directly transferred to different contexts.

For further research, one interesting issue would be to study in greater detail the relationship between small firms and large firms in strategic alliances. Another interesting issue would be to look more closely into cases in which clusters have emerged despite the absence of critical actors, such as a research community and institutions for collaboration (Tödtling & Trippl, 2005).

Despite its limitations, we hope that this study offers valuable and novel insights about how firms in two regions have experienced change and development resulting from the entry of large-scale oil and gas projects.

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### **Note**

1. In this study, the “moderator” refers to the oil and gas companies in projects Alpha and Beta.

- Alvarez, S. A. and Barney, J. B. (2001) How Entrepreneurial Firms can Benefit from Alliances with Large Partners, *Academy of Management Executive* 15(1), pp. 139-148.
- Anderson, A. R. (2000) Paradox in the Periphery: An Entrepreneurial Reconstruction? *Entrepreneurship & Regional Development* 12(2), pp. 91-109.
- Basant, R. (2002) Knowledge Flows and Industrial Clusters: An Analytical Review of Literature, *East-West Center Working Papers, Economics Series no. 40* February(40), pp. 1-77.
- Bell, G. G. (2005) Clusters, Networks, and Firm Innovativeness, *Strategic Management Journal* 26(3), pp. 287-295.
- Best, M. H. and Xie, H. (2006). Discovering Regional Competitive Advantage: Route 128 vs. Silicon Valley. DRUID Summer Conference 2006. Copenhagen, Denmark.
- Boari, C. (2001). Industrial Clusters, Focal Firms, and Economic Dynamism: A Perspective from Italy. Washington, DC, World Bank Institute. **Stock No. 37186.**
- Brenner, T. (2005) Innovation and Cooperation During the Emergence of Local Industrial Clusters: An Empirical Study in Germany, *European Planning Studies* 13(6), pp. 921-938.
- Burt, R. S. (1982) Toward a Structural Theory of Action: *Network Models of Social Structure, Perception, and Action* (New York: Academic Press).
- Burt, R. S. (1992) *Structural Holes* (Cambridge, MA: Harvard University Press).
- Burt, R. S. (1995) *Structural Holes: The Social Structure of Competition* (Cambridge, MA: Harvard University Press).
- Casanueva, C., Castro, I. & Galan, J. (2013) Informational network and innovation in mature industrial clusters, *Journal of Business Research*, 66(5), pp. 603-613.
- Cooke, P. (1996) The New Wave of Regional Innovation Networks: Analysis, Characteristics and Strategy, *Small Business Economics* 8(2), pp. 159-171.
- Dahl, M. S. and Pedersen, C. O. R. (2004) Knowledge Flows Through Informal Contacts in Industrial Clusters: Myth or Reality?, *Research Policy* 33(10), pp. 1673-1686
- Dahl, M. S., Ostergaard, C. R. and Dalum, B. (2010) Emergence of Regional Clusters: The Role of Spinoffs in the Early Growth Process. In: Boschma, R. and Martin, R. *The Handbook of Economic Geography*, pp. 205-220 (Cheltenham: Edward Elgar Publishing Limited).
- Doutriaux, J. (2008) Knowledge clusters and university-industry cooperation, in: C. Karlsson (Ed.) *Handbook of Research on Innovation and Cluster: Cases and Policies*, pp. 149-166 (Cheltenham: Edward Elgar).
- Doz, Y. L. & Hamel, G. (1998) Alliance Advantage: *The Art of Creating Value Through Partnering*, 1st ed. (Boston, MA: Harvard Business Press).
- Ellison, G. and Glaeser, E. L. (1999) The Geographic Concentration of Industry: Does Natural Advantage Explain Agglomeration?, *The American Economic Review* 89(2), pp. 311-316.
- Ellison, G., Glaeser, E. L. and Kerr, W. (2010) What Causes Industry Agglomeration? Evidence from Coagglomeration Patterns, *American Economic Review* 100(3), pp. 1195-1213.
- Feldman, M. P. and Francis, J. L. (2004) Homegrown Solutions: Fostering Cluster Formation, *Economic Development Quarterly* 18(2), pp. 127-137.
- Gibbs, R. M. and Bernat, G. A. (2001) Rural Industry Clusters Raise Local Earnings, *Rural Development Perspectives* 12(3), pp. 18-25.
- Glaser, B. G. and Strauss, A. L. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine.
- Gnyawali, D. R. & Madhavan, R. (2011) Cooperative networks and competitive dynamics: A structural embeddedness perspective, *Academy of Management Review*, 26(3), pp. 431-445.
- Gulati, R. (1998) Alliances and Networks, *Strategic Management Journal* 19(4), pp. 293-317.
- Henn, S. (2013) Transnational Entrepreneurs and the Emergence of Clusters in Peripheral Regions. The Case of the Diamond Cutting Cluster in Gujarat (India), *European Planning Studies* 21(11), pp. 1779-1795.

- Henriksen, J. T. (2010) Planning, action and outcome evaluation of the Norwegian petroleum system: A structuration approach to ripple effect studies. PhD dissertation, Bodø Graduate Schools of Business.
- Huggins, R. and Johnston, A. (2010) Knowledge Flow and Inter-Firm Networks: The Influence of Network Resources, Spatial Proximity and Firm Size, *Entrepreneurship & Regional Development* 22(5), pp. 457-484.
- Håkanson, L. (2005) Epistemic Communities and Cluster Dynamics: On the Role of Knowledge in Industrial Districts, *Industry and Innovation* 12(4), pp. 433-463.
- Ireland, R. D., Hitt, M. a. & Vaidyanath, D. (2002) Alliance management as a source of competitive advantage, *Journal of Management*, 28(3), pp. 413-446.
- Jarillo, J. C. (1989) Entrepreneurship and growth: The strategic use of external resources, *Journal of Business Venturing*, 4(2), pp. 133-147.
- Johannisson, B. (2000) Networking and entrepreneurial growth, in: D. Sexton & H. Landström (Eds) *Handbook of Entrepreneurship*, pp. 368-386 (Oxford: Blackwell).
- Kenney, M. and Patton, D. (2006) The Coevolution of Technologies and Institutions: Silicon Valley as the Iconic High-Technology Cluster. In: Braunerhjelm, P. and Feldman, M. P. *Cluster Genesis: Technology-Based Industrial Development*, pp. 38-60 (Oxford: Oxford University Press).
- Koka, B. R. & Prescott, J. E. (2002) Strategic alliances as social capital: A multidimensional view, *Strategic Management Journal*, 23(9), pp. 795-816.
- Lazerson, M. H. and Lorenzoni, G. (1999) The Firms that Feed Industrial Districts: A Return to the Italian Source, *Industrial and Corporate Change* 8(2), pp. 235-266.
- Lechner, C. and Leyronas, C. (2012) The Competitive Advantage of Cluster Firms: The Priority of Regional Network Position over Extra-regional Networks - a Study of a French High-tech Cluster, *Entrepreneurship & Regional Development* 24(5-6), pp. 457-473.
- Marshall, A. (1920) *Principles of Economics*. 8th ed. London: Macmillan.
- Martin, R. and Sunley, P. (2003) Deconstructing Clusters: Chaotic Concept or Policy Panacea?, *Journal of Economic Geography* 3(1), pp. 5-35.
- Menzel, M.-P. and Fornahl, D. (2010) Cluster Life Cycles - Dimensions and Rationales of Cluster Development, *Industrial and Corporate Change* 19(1), pp. 205-238.
- Nelson, R. and Winter, S. (1982) *An Evolutionary Theory of Economic Change*. Cambridge: MA: Harvard University Press.
- Park, S. H., Chen, R. and Gallagher, S. (2002) Firm Resources as Moderators of the Relationship Between Market Growth and Strategic Alliances in Semiconductor Start-ups, *The Academy of Management Journal* 45(3), pp. 527-545.
- Patton, M. Q. (2002) *Qualitative Research and Evaluation Methods*. 3rd ed. Thousand Oaks: Sage Publications.
- Porter, M. E. (1990) *The Competitive Advantage of Nations*. London: Macmillan.
- Porter, M. E. (2003) The Economic Performance of Regions, *Regional Studies* 37(6&7), pp. 549-578.
- Romanelli, A. M. & Khessina, O. M. (2005) Regional industrial identity: Cluster configurations and economic development, *Organization Science*, 16(4), pp. 344-358.
- Rugman, A. M. & Verbeke, A. (2003) Multinational enterprises and clusters: An organizing framework, *Management International Review*, 43(3), pp. 151-169.
- Schmitz, H. (1999) From Ascribed to Earned Trust in Exporting Clusters, *Journal of International Economics* 48(1), pp. 139-150.
- Scott, A. J. (2005) *On Hollywood: The Place, the Industry*. Princeton: Princeton University Press.
- Shaver, J. M. and Flyer, F. (2000) Agglomeration Economies, Firm Heterogeneity, and Foreign Investment in the United States, *Strategic Management Journal* 21(12), pp. 1175-1193.
- Tallman, S., Jenkins, M., Henry, N. and Pinch, S. (2004) Knowledge, Clusters and Competitive Advantage, *The Academy of Management Review* 29(2), pp. 258-271.
- Todtling, F. and Trippel, M. (2005) One size fits all? Towards a Differentiated Regional Innovation Policy Approach, *Research Policy* 34(8), pp. 1203-1219.

- Vandaie, R. and Zaheer, A. (2014) Surviving Bear Hugs: Firm Capability, Large Partner Alliances, and Growth, *Strategic Management Journal* 35(4), pp. 566-577.
- Virkkala, S. (2007) Innovation and networking in peripheral areas - a case study of emergence and change in rural manufacturing, *European Planning Studies* 15(4), pp. 511–529.
- Vossen, R. W. (1998) Relative strengths and weaknesses of small firms in innovation, *International Small Business Journal*, 16(3), pp. 88–94.
- Yang, H., Zheng, Y. and Zhao, X. (2014) Exploration or Exploitation? Small Firms' Alliance Strategies with Large Firms, *Strategic Management Journal* 35(1), pp. 146-157.