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# **Agency–context interaction in industrial path development – a multidimensional approach**

Dissertation for the degree of *Philosophiae Doctor (Ph.D.)* at Western Norway  
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## Scientific milieu

The doctoral project was carried out between 2018 and 2021 at the Mohn Centre for Innovation and Regional Development, at the Faculty of Engineering and Science, Western Norway University of Applied Sciences (HVL).

It was part of the project *Drivers of regional restructuring: Actors, institutions and policy*, managed by Professor Stig-Erik Jakobsen at the Mohn Centre for Innovation and Regional Development. Professor Jakobsen was also the main supervisor for the doctoral project, and Associate Professor Rune Njøs served as co-supervisor. The research leading up to this thesis was funded by Regionale Forskningsfond Vestland (Regional Research Fund for Western Norway).

In March 2020, I was accepted onto HVL's new PhD programme in Responsible Innovation and Regional Development (RESINNREG). In addition to RESINNREG courses, I also attended courses at the University of Bergen and at the Oslo Summer School throughout my doctoral training. Furthermore, in the autumn of 2019, I had a three-month research stay at the School of Economics and Management at the University of Florence (Università degli Studi di Firenze).

The various and active European regional development research milieus are well connected, and so I have also been able to participate in this research community through conferences and webinars during my doctoral training.



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My family and friends deserve significant thanks for sticking with me and for making our lives what they are. I am grateful to my parents for their support and for always listening to me, even though I have been speaking continuously for the past 29 years. I also thank my friends for keeping me sane and being great fun! Finally, my special thanks to Fabio for encouragement and support, for all the golden moments, and for always providing a different perspective.

Nora Geirsdotter Bækkelund

Bergen, 13 January 2022

## Abstract

This dissertation investigates agency in industry path development, and how it interacts with context. A multidimensional approach to agency–context interaction is developed and used to understand both the ability of people to act, and the effects of their actions. The literature has long recognized the interaction between agency and context; this dissertation takes this further by exploring *how* this interaction plays out. Agency–context interaction is understood through five interconnected dimensions: industrial, scalar, institutional, temporal and relational. The industrial, scalar and institutional dimensions highlight how agency interacts with different contextual elements, while the temporal and relational dimensions provide an understanding of how this interaction plays out. Although descriptions of all five dimensions exist in the literature, most contributions have focused on one or a few dimensions, and the industrial dimension prevails. Herein, the relational dimension, which is usually implicit, but is used explicitly to strengthen our understanding of people’s ability to act. Thus, to expand and link the path development literature’s perspective on agency, this multidimensional approach integrates insights from relational economic geography and adjacent literatures.

To find out how agency–context interaction plays out, three tourism path development cases in rural Western Norway were investigated. The dissertation is based on three papers, which contribute to answering the research questions by highlighting different dimensions of agency–context interaction in path development. Paper #1 focuses on how the types of agency vary throughout industry path evolution, emphasising the temporal dimension. Paper #2 investigates how actors do institutional work across different geographical scales and social fields to shape established industry path development, thereby highlighting the interconnections between the industrial, institutional and scalar dimensions. Paper #3 takes a micro perspective, investigating how central change agents use skills and knowledge from past experiences in various social fields, thus emphasizing the relational dimension. Together, these three papers advance our understanding of both people’s ability to act and the effects of their actions.

Abstracting from the three cases, the dissertation shows that agency in industry development is enacted by multiple actors. It also finds that actors' ability to act is shaped by the relations they have. Central actors in the three cases used skills, knowledge and networks from past experiences in different social fields, as they worked towards industry development. Industry path development is also enabled by local and non-local connections. Furthermore, the space for agency varies as contextual conditions change over time, while the characteristics of agency vary throughout industry path evolution, both in terms of type of action and of how change-oriented it is. Thus, the dissertation provides theoretical insights that are generally relevant to understanding agency in industry path development, expanding the path development literature's understanding through a multidimensional approach.

## Samandrag

Avhandlinga undersøkjer aktørskap i næringsutvikling, og korleis aktørskap interagerer med kontekst. Ei fleirdimensjonal tilnærming til aktørskap-kontekst interaksjon vert utvikla og nytta for å forstå folk si evne til å handla, så vel som effektane av handlingane deira. Litteraturen på feltet har lenge anerkjend interaksjonen mellom aktørskap og kontekst. Avhandlinga tek dette vidare ved å undersøka *korleis* denne interaksjonen spelar seg ut. Aktørskap-kontekst interaksjon vert forstått gjennom fem dimensjonar: Den industrielle, geografisk nivå, den institusjonelle, tidsdimensjonen og den relasjonelle dimensjonen. Dei tre fyrste retter merksemda mot korleis aktørskap interagerer med ulike kontekstuelle element, medan tidsdimensjonen og den relasjonelle dimensjonen bidreg mot forståinga av korleis denne interaksjonen går føre seg. Sjølv om alle fem dimensjonane er til stades i litteraturen fokuserer dei fleste bidrag på ein eller nokre få dimensjonar, og den industrielle dimensjonen dominerer. Den relasjonelle dimensjonen har for det meste vore implisitt, men vert her nytta eksplisitt for å styrka forståinga av folk si evne til å handla. Dermed integrer den fleirdimensjonale tilnærminga innsikt frå relasjonell økonomisk geografi og relaterte litteraturar med perspektiv frå litteraturen om industriell stutvikling, og både utvidar og knyt såleis betre saman feltet si forståinga av aktørskap.

For å finna ut korleis interaksjonen mellom aktørskap og kontekst spelar seg ut undersøkjer avhandlinga tre tilfelle av reiselivsutvikling i bygder på Vestlandet. Avhandlinga baserer seg på tre vitenskaplege artiklar som bidreg inn mot forskingsspørsmåla ved å belysa ulike dimensjonar ved aktørskap-kontekst interaksjon i industriell stutvikling. Artikkel #1 fokuserer på korleis aktørskap varierer gjennom industriutviklingsprosessen, og vektlegg såleis tidsdimensjonen. Artikkel #2 undersøkjer korleis aktørar arbeider på tvers av ulike geografiske nivå og sosiale felt for å forma utviklinga av ei etablert næring. Dermed framhevar den samanhengane mellom den industrielle, den institusjonelle og den geografiske nivå-dimensjonen. Artikkel #3 tek eit mikroperspektiv og undersøkjer korleis sentrale endringsaktørar bruker kunnskapar og evner dei har tileigna seg gjennom tidlegare erfaringar i ulike sosiale felt. Såleis legg den vekt på den relasjonelle dimensjonen.

Saman bidreg artiklane både til forståinga av folk si evne til å handla, og av effektane av handlingane deira.

Ved å abstrahera frå dei tre empiriske døma finn avhandlinga at aktørskap i næringsutvikling vert utøvd av fleire aktørar. Den finn òg at aktørane si handlingsevne er forma av relasjonane de inngår i. Sentrale aktørar i dei tre døma nyttar både evner, kunnskap og nettverk frå tidlegare erfaringar i ulike sosiale felt når dei arbeider for næringsutvikling. Vidare vert ny næringsutvikling mogleggjort gjennom lokale og ikkje-lokale band. Rommet for aktørskap varierer over tid med endringar i kontekstuelle forhold, og aktørskapet endrar karakter gjennom næringsstien sin evolusjon, både når det gjeld type handlingar og kor endringsorienterte dei er. Med desse funna gir avhandlinga teoretisk innsikt av generell relevans for å forstå aktørskap i næringsutvikling, og utvidar samtidig stitutviklingslitteraturen si forståing gjennom den fleirdimensjonale tilnærminga.



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## List of papers

This dissertation is based on the following three papers:

- #1 Bækkelund, N. G. (2021). Change agency and reproductive agency in the course of industrial path evolution. *Regional Studies*, 55(4), 757-768. DOI: <https://doi.org/10.1080/00343404.2021.1893291>
- #2 Bækkelund, N. G. (2022) Fields of change? Actors, institutions and social fields in the green restructuring of the Flåm tourism industry. Accepted for publication in *Growth & Change* (December 2021)
- #3 Bækkelund, N. G., Jakobsen, S.-E., & Njøs, R. (in revision). The relatedness of knowledge combinations — a micro perspective. Submitted to an international peer-reviewed scientific journal in October 2021

*Paper #1 has been published in open access and can thus be reprinted freely. The versions of Papers #2 and #3 printed herein are proof and pre-publication versions as the papers are yet to be published.*

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# 1. Introduction

As the geographies of production change, some places are thrown into decline while others reinvent themselves. As the spotlight searches for the next Silicone Valley, new livelihoods are being created in places with completely different characteristics (Carvalho & Vale, 2018; Dijkstra et al., 2013; Eder, 2018). Innovation also takes place outside of urban agglomerations (Fritsch & Wyrwich, 2021), so that many rural areas and post-industrial towns, which are often assumed to have dire prospects, continue thriving (Li et al., 2019). This dissertation is driven by curiosity about how this takes place, and by a desire to better understand what people do to make viable lives and futures in the places where they live and to which they feel attached. There are numerous examples of people giving the places they love new dynamism, at least for a while (e.g. Borch, 2010; Li et al., 2019; Rekers & Stihl, 2021; Rossiter & Smith, 2021). In this dissertation three cases of new industry development in rural Western Norway are investigated in detail to explain how they occurred and what people did to make them happen.

In the regional industrial path development literature within evolutionary economic geography (hereafter EEG), new economic activities are seen as emerging from pre-existing resources and past industry structures (Boschma & Frenken, 2006; Martin & Sunley, 2006; Neffke et al., 2011). From this perspective, regional innovation systems (Isaksen et al., 2019; Njøs & Jakobsen, 2018; Trippel et al., 2020), institutions (Bathelt & Glückler, 2014; Benner, 2021; Bole, 2021; Carvalho & Vale, 2018; Strambach, 2010), resources and competences, which have co-evolved with past industry structures, shape which new industry paths are possible and how they develop. Increasing attention has been paid to the role of agency in creating and developing new industry paths (Grillitsch & Sotarauta, 2020; Isaksen et al., 2019; Jakobsen et al., 2021; Njøs et al., 2020; Rypestøl et al., 2021; Steen, 2016). Thus, while some conditions are more favourable than others, new path development is also a question of what actors do with the resources, competences, connections and infrastructures at their disposal (Hassink et al., 2018; Isaksen et al., 2019; Rekers & Stihl, 2021). Accordingly, in this dissertation, industry development is considered a matter of agency–context interaction.

While agency can contribute to new activities that break with past paths, it is also shaped by actors' relations (Grillitsch & Sotarauta, 2020) and contextual factors (Bathelt & Li, 2014). This is often referred to as the paradox of embedded agency (Granovetter, 1985). However, while recognizing the two-way interaction between structure and agency in theory (Grillitsch & Sotarauta, 2020; Sotarauta, 2015), most empirical research on agency in industry path development has focused on how agency influences structures (Isaksen & Jakobsen, 2017; Miörner & Trippl, 2017; Rypestøl et al., 2021). Thus, significant progress has been made towards understanding how agency contributes to industry development. However, there is also a need to better understand how agency, defined as the ability of people to act and have an effect (Gregory et al., 2009, p. 347), evolves. This dissertation aims to shed light on both how agency develops and on how it leads to certain outcomes. It does so by following agency–context interaction over time, to highlight the interplay between structures and agency, as called for by Miörner (2019). This implies a more processual understanding of agency, expanding the dominant output-oriented approach to agency in the industrial path development literature.

To understand the ability of people to act, and the effects of their actions on industry development, I have identified five central dimensions: Industrial, scalar, institutional, relational and temporal. The industrial dimension includes past industry structures and related assets, and has been central in the literature, with much work done on agents' uses of and efforts to change assets and support structures from past industry paths (Hassink et al., 2018; Miörner & Trippl, 2019; Tödtling & Trippl, 2013). The scalar dimension has also been central, highlighting geographical contexts and interactions with actors and structures on multiple scales (Binz, Truffer, et al., 2016; Gong & Hassink, 2019). The institutional dimension draws attention to social guidelines for appropriate behaviour (Bathelt & Glückler, 2014). Actors' interactions with institutions while working for industrial change have increasingly become a hot topic in the literature (Grillitsch & Rekers, 2016; Rekers & Stihl, 2021; Sotarauta, 2017; Strambach, 2010). The temporal dimension, which is key to evolutionary perspectives, connects past, present and future and shows how both industry paths and agency evolve, and thus what shapes actions and their outcomes (Jolly et al., 2020; Smith et al., 2017). Finally, the relational

dimension, to which the industry path development literature has paid less attention (Bathelt & Li, 2014; Yeung, 2020), ties together and highlights the way agents have relations within, work within and draw on different social fields, connecting industries, institutions and geographies. Thus, combining these five dimensions into a single framework, the dissertation provides an analytical approach to agency–context interaction.

Empirically, the dissertation investigates three cases of rural tourism industry development. The villages Sogndal and Flåm, and the small post-industrial town Odda, all developed new tourism-based livelihoods in the last 10-20 years before the Covid-19 pandemic. Such rural contexts lend themselves to the empirical study of agency in industry development, as they include relatively few actors. The three villages are located by different fjord branches in Vestland county, Western Norway. Except for the city regions surrounding Bergen and Stavanger, Western Norway is predominantly rural and sparsely populated. It is also Norway's major tourism region (Innovation Norway, 2019a) with foreign travellers spending approximately 3 500 000 nights in commercial accommodations during 2019 (statistikknett.no, 2020). Being located in the same region, Sogndal, Flåm and Odda have similar general conditions for tourism development. Yet, each has unique characteristics stemming from its particular geographical location and economic history. These cases are thus comparable, but I approach each location and its' actors' efforts as unique cases. By exploring the different ways in which agency processes play out in different industrial path developments, the cases contribute to the development of a multidimensional approach to agency–context interaction.

The theoretical perspective and analytical approach evolved throughout the project. The industrial path development literature was a theoretical starting point, after which new perspectives and insights from other literatures have been included in light of the empirics. This deepened the understanding of several dimensions – and the interconnectedness between them – and thus provided for a better understanding of people's ability to act and the effects of those actions. Thus, by combining the evolutionary perspective with insights from relational geography, neo-institutional theory and adjacent social science literatures, a theoretical



framework for investigating the interplay between agency and context in industrial path development has been developed. This framework allowed me to address the following research questions:

Main RQ: How can the multidimensionality of agency–context interaction be approached analytically?

Sub RQ1: How can people’s ability to act be understood through a multidimensional approach?

Sub RQ2: How can the effects of people’s actions be understood through a multidimensional approach?

By answering these questions, the dissertation contributes towards the path development literature’s understanding of the role of agency in regional industry development. The two sub-research questions address the two sides of agency’s interaction with structure – how agency comes about and how it shapes structures. Answering these questions contributes to our understanding of both what agency is and how it plays out in industry development. These are both matters of agency–context interaction, as highlighted by the main research question. Integrating multiple dimensions of agency–context interaction nuances the hitherto outcome-oriented approach to agency in industry path development. By looking at multiple dimensions to understand both the ability to act and the effects of actions, the dissertation’s approach also increases the compatibility between evolutionary thinking and the role of agency.

Paper #1 (*Change agency and reproductive agency in the course of industrial path evolution*) investigates variation in types of agency across phases of industrial path evolution, comparing the processes in the tourism path evolutions of Sogndal, Odda and Flåm. This paper thus emphasizes the temporal dimension, using it to approach the industrial, scalar and institutional dimensions.

Paper #2 (*Fields of change? Actors, institutions and social fields in the green restructuring of the Flåm tourism industry*) studies processes of interscalar institutional work that shape the direction of the tourism industry’s path

development in Flåm. It shows how the institutional, scalar and relational dimensions are interconnected.

Paper #3 (*The relatedness of knowledge combinations – a micro perspective*) explores the knowledge practices of individuals at the centre of innovation projects that led to industry path development in Odda and Flåm. Here, the relational dimension is brought to the fore as key to understanding how agency is developed.

These papers are discussed in greater detail in section 5. Section 2 introduces current EEG perspectives on agency. This is followed by a discussion of the industrial, scalar, institutional, temporal and relational dimensions, which are then integrated into a multidimensional framework for understanding agency in industrial path development. Section 3 discusses research design and methodology for approaching agency in industry path development. Section 4 presents the empirical context, including industry-specific aspects that must be considered, and additional information about Sogndal, Odda and Flåm, and the local and regional tourism industries. Section 5 discusses the three papers' findings and contributions. Section 6 concludes, summarizing the answers to the dissertation research questions.

## **2. Theoretical framework**

### **2.1 The EEG perspective and path dependency**

As economic geographers increasingly moved away from neo-classical economic analysis and drew inspiration from various heterodox approaches, EEG emerged as a central perspective in the field of regional development (Boschma & Martin, 2010). EEG focuses on how the economy transforms itself from within (Boschma & Martin, 2010), considering the economy as a system that evolves through selection among a variety of firms, technologies and routines, in which novelty is produced through innovation (Witt, 2003). EEG scholars have also combined geography with the aspatial perspective from evolutionary economics, paying particular attention to how economies in different territories develop disparately (e.g. Neffke et al., 2011).

EEG is not a single, homogenous theoretical approach, but rather a mix of approaches that share the characteristics of taking the time dimension seriously, considering the economy to be dynamic, dealing with irreversible processes and paying attention to the generation of novelty (Witt, 2003). Perspectives thus range from generalized Darwinism to complexity thinking and path dependency, while many scholars consider and combine concepts from the different perspectives (Boschma & Martin, 2010).

This thesis builds on and aims to contribute to EEG's path dependency theory strand (Martin & Sunley, 2006). This strand has tended to privilege structural factors. The path dependency perspective's major strength is theorizing the time dimension, emphasizing how past choices influence future developments (David, 1985, 1988). David (1985) illustrated this with the fact that suboptimal technological solutions are used despite available alternatives. The notion has also been applied to organizational routines (Sydow et al., 2009), institutions (North, 1990) and other phenomena, and within EEG to regional industry evolution (Martin & Sunley, 2006). In short, a choice at one point influences future choices until the path reaches a state of lock-in (Sydow et al., 2009). This process can be divided into phases. In the canonical path dependency model, the phases are preformation, path creation, path development and lock-in. However, this description may be overly deterministic (Crouch & Farrell, 2004). Not all developments marked by self-

reinforcing mechanisms lead to lock-in. Accordingly, Martin (2010) developed a path as process model, in which a path may retain its dynamism *or* end in a steady state (lock-in) (Figure 1). In this model agency is among the factors influencing whether and how a path evolves – particularly whether local actors retain dynamism to be able to adapt the industry path to a changing environment.

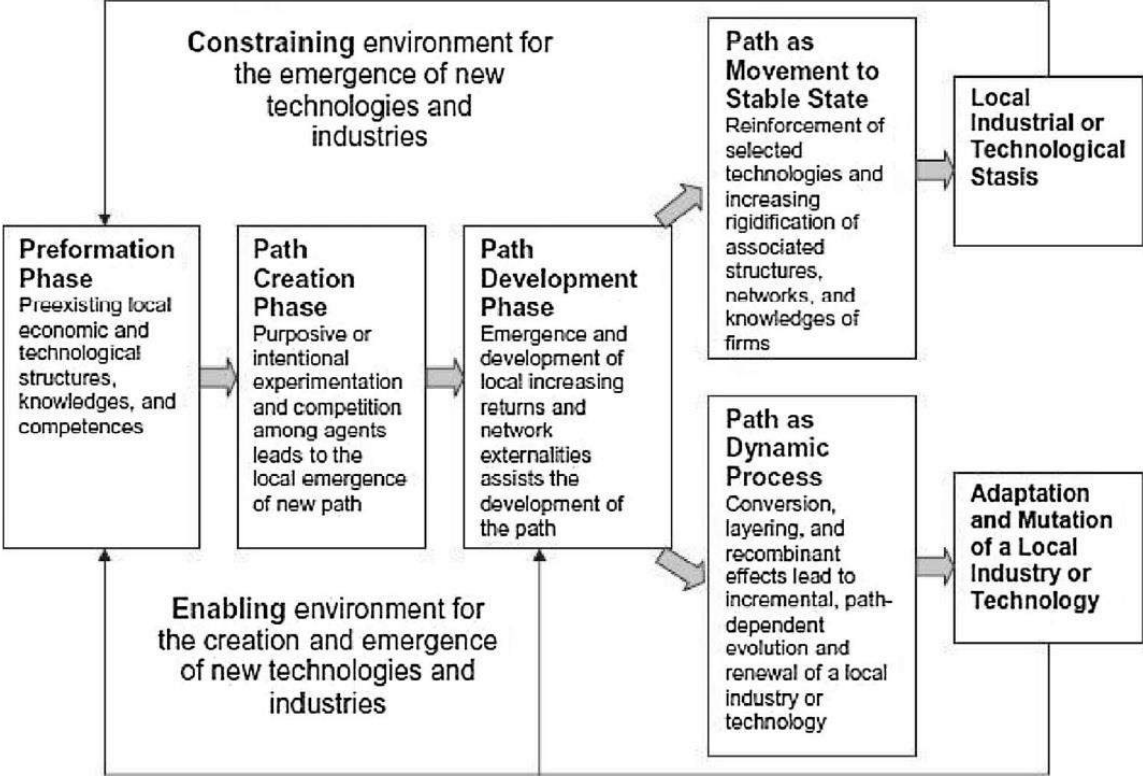


Figure 1: Martin's (2010, p. 21) path as process model.

### 2.2 Agency in industry path development

Martin's (2010) path as process model includes agency as a decisive factor, especially in the later phase of path evolution during which the path may move to a stable state and stagnate or remain dynamic. This opening for agency draws upon Garud and Karnøe's (2001) pioneering work on path creation as an agentic process, and has in recent years inspired efforts to integrate an agency perspective in the industry path development literature. As EEG's strength lies in explaining historic continuity and the gradual evolution of the economic landscape (Boschma & Frenken, 2006), it seems that agency has been introduced to better explain change (e.g. Grillitsch & Sotarauta, 2020). However, the understanding of agency in the

industry path development literature appears to be coloured by its integration into an otherwise structure-centred perspective, as a missing link explaining some of that which cannot be well accounted for by structural factors. In several recent works, agency is defined as “action or intervention by an actor to produce a particular effect”, following Sotarauta and Suvinen (2018, p. 80; see also Isaksen et al., 2019 and Miörner, 2019). This definition strongly emphasizes intentionality and outcome, and it may thus appear that agency is independent actions that produce effects, usually leading to change. Others, like Grillitsch and Sotarauta (2020) and Jolly et al. (2020), use the definition from the Dictionary of Human Geography of agency as “the ability of people to act, usually regarded as emerging from consciously held intentions, and as resulting in observable effects in the human world” (Gregory et al., 2009, p. 347). I find this definition more apt, as agency is *the ability* to act and to produce effects, while actions and their outcome are its manifestation. In this regard, the definition of Sotarauta and Suvinen (2018) appears closer to an operationalization of agency, and it is in fact used as such for instance by Jolly et al. (2020).

Although one may observe actions and outcomes, agency can only be *understood* in context, not only in terms of ‘making sense of’ actions but also understanding how agents are able to do what they do and produce certain effects. Agency is shaped by context over time (Grillitsch & Sotarauta, 2020). It is built up through learning and relations developed through past experiences. Furthermore, actors who get involved with and contribute to shaping new industry paths become embedded in these paths, and their agency is shaped by this embeddedness (Garud & Karnøe, 2003). Accordingly, developing an understanding of agency in industry path development requires a processual perspective on industry development, in which agency and contextual factors are considered to interact over time (Martin, 2010). In this dissertation, an approach to understanding agency–context interaction is developed by combining multiple theory-informed dimensions.

### **2.3 Agency–context interaction**

In integrating an agency perspective into the industry path development literature within economic geography, the focus has been on how agents interact with, build

upon and transform existing industry structures (Isaksen et al., 2019; Miörner & Trippel, 2019). Accordingly, agency stemming from, and working with, industry and support structures has been central. This also involves agency working on international industry linkages (Trippel et al., 2018). The influences of other local factors, like culture and institutions (Bole, 2021; Martin & Sunley, 2006), are also often mentioned. Recently agency's interaction with institutions has been explored in greater detail (e.g. Benner, 2021; Carvalho & Vale, 2018; Gong & Hassink, 2019; Rekers & Stihl, 2021; Sotarauta & Suvinen, 2018), rather than being simply noted as a factor shaping industry paths (Boschma & Frenken, 2009). Thus, the focus has been on both contextual factors that make up the conditions for path development and agency's impact on these contextual factors.

In the literature, temporal perspectives have been used to investigate how the space for actions leading to certain outcomes varies across time. However, temporality can also help us understand how agency is embedded, how it develops and how actions in one moment build upon those from the past. Yet these aspects can only be fully understood by combining the temporal perspective with a relational perspective which allows for linking agency across time, scale and different contextual elements. In fact, although the notions of distributed agency (Garud & Karnøe, 2003) and place-based leadership (Grillitsch & Sotarauta, 2020) allude to the relational perspective, this has remained implicit in the industry path development literature. Furthermore, learning (Ibert, 2007) and collaboration are two phenomena central to agency in industry development that are better understood through a relational perspective. Therefore, this thesis incorporates insights from relational economic geography (Bathelt & Glückler, 2011; Bathelt & Li, 2014; Fløysand & Jakobsen, 2011; Sunley, 2008) to develop a processual approach to agency in industry development.

Considering both time and human relations contributes to a greater understanding of *why* agents have their ability to act and make effects, and of *how* this plays out. Herein, agency is defined as the ability of people to act and have an effect, drawing on the definition of the word in the Dictionary of Human Geography (Gregory et al., 2009). This definition, emphasizing the ability to act, matches a processual understanding of agency in which the past not only manifests in habits and routines

(Emirbayer & Miche, 1998) but in accumulated experiences, knowledge and network relations. This approach to agency–context interaction is developed by combining five dimensions: industrial, scalar, institutional, temporal and relational. While the first three – which are currently central to our understanding of agency in industrial path development – highlight agency’s interactions with different aspects of context, the latter two contribute analytical tools for approaching this interaction as a dynamic, situated process. In the next section each dimension, their place in the existing literature and new insights gained from other literatures, are discussed, and the relational dimension is introduced. This discussion leads up to a multidimensional framework for approaching agency–context interaction in industry path development.

### **2.3.1 The industrial dimension**

From an evolutionary perspective, the resources and competences of established industry activities are considered the foundation for the emergence of new industries (Boschma, 2014). Individuals develop routines, knowledge and competences through experiences in regional industries, which they combine and use in new entrepreneurial endeavours. Thus, industry composition shapes the agency of individuals within a region, enabling them to start new activities by diversifying into similar ones (Frenken et al., 2007; Neffke et al., 2011) or by combining technology and knowledge from established activities in wholly new ways (Boschma et al., 2017; Grillitsch et al., 2018). This relates to research showing that dynamic industrial milieus can become rearing grounds for new ventures, particularly spin-offs from established companies (e.g. Jakobsen et al., 2005; Klepper, 2007; Saxenian, 1994). These perspectives also imply that the potential for new industry creation is limited in regions with less industrial sector variety, like most rural areas or small towns dominated by a single industry. Furthermore, actors in some regions may be better positioned to act in terms of external networks and influence as a result of, among other factors, the region’s established industries (Trippel et al., 2018). This includes regional innovation systems – “the institutional infrastructure supporting innovation within the production structure of a region” (Asheim & Gertler, 2005, p. 299). Innovation systems tend to co-evolve with regional industry paths and are shaped by existing industry structures, set of

knowledge organizations and networks (Frangenheim et al., 2020; Tödtling & Trippl, 2013). Thus, innovation systems are also a part of the industrial dimension and provide a support structure that entrepreneurs and established firms may use when innovating.

Having co-evolved with established industries, innovation systems are more geared towards some types of industry development than others (Deegan et al., 2021; Tödtling & Trippl, 2013; Trippl et al., 2020). Thus, new path development also involves reshaping innovation systems. In this respect, Isaksen et al. (2019) suggest that path change requires a mix of firm-level agency and system-level agency. System-level agency refers to action aimed at transforming regional innovation systems to foster change, which is achieved by creating new organizations and changing informal institutions and networks (Tödtling & Trippl, 2013). Broadening the scope somewhat, Grillitsch and Sotarauta (2020) propose three types of agency that contribute to new path creation: Schumpeterian entrepreneurship, institutional entrepreneurship and place-based leadership. Schumpeterian entrepreneurship refers to innovative entrepreneurship by newcomers as well as by established firms, institutional entrepreneurship to agency that creates new institutions or transforms existing ones (Battilana et al., 2009), and place-based leadership to agency that mobilizes and co-ordinates the efforts of multiple actors for new path creation (Grillitsch & Sotarauta, 2020).

By including aspects beyond the purely industrial, the trinity of change agency represents a step away from the path development literature's tendency to ascribe entrepreneurs and innovative firms the role of introducing novelty through innovation, while also portraying their agency as largely a product of existing industry structures. Yet, this paradoxical underlying assumption has not been directly confronted, as focus has been mostly on actions and their outcomes, and less on agency as *the ability* to act. A micro perspective on skills and knowledge used in industry development provides nuance by uncovering heterogeneity and allowing for exploring the role of non-industry experiences in developing agents' ability to act. Non-work relations and other contextual aspects, such as institutions (Sotarauta, 2017), may be more important than is sometimes assumed. Therefore,



agency in industry path development can be better understood by exploring the overlap between the industrial dimension and other dimensions, which will be discussed in the next sections.

### **2.3.2 The scalar dimension**

Scale has been an important dimension in studies of agency in path development, including in interaction between local and non-local firms (Trippel et al., 2018), between policies at different territorial scales (Dawley et al., 2014; MacKinnon et al., 2019) and in the impacts of events and processes at different scales (Rossiter & Smith, 2021). The latter is central to the notion of critical junctures, which often emerge through parallel changes or events at different scales and the interactions between them (Grillitsch & Sotarauta, 2020; Smith et al., 2017).

Regarding policy and scale, attention has been directed towards the impacts of national policy (Grillitsch & Rekers, 2016) and how local actors use them for regional industry development (Dawley et al., 2014). Linked to this, actors may use national policy and international connections to overcome regional-level disadvantages (Miörner & Trippel, 2017). However, disadvantages can also stem from processes at different scales. While this is often thought to reduce the space for agency, actors may work to change conditions at different scales to their advantage. For instance, Gong and Hassink (2019) investigated how industry actors work to change industry-specific institutions stemming from policy, contributing to a multi-scalar understanding of agency. The focus on policy may lead to a rather hierarchical scale concept (Marston et al., 2009). However, this is not absolute as agents embedded at lower scales may influence policy at higher scales (Gong & Hassink, 2019; Jakobsen et al., 2021), or use policy instruments towards their own goals (Dawley et al., 2014; Fløysand & Jakobsen, 2005).

A similar understanding of scale can be seen in the notion of non-local linkages, which are key to attracting various types of resources that may be locally unavailable, like knowledge (Bathelt et al., 2004), financing (Binz, Truffer, et al., 2016), markets (Fløysand & Jakobsen, 2011) or political influence (Gong & Hassink, 2019). When making strategic couplings, agency crosses scale. Yet, there is a tendency towards associating the international level with power (Hambleton, 2019),

for instance, in work on branch plants where the impacts of multinational firms are often presented as factors with which local actors must deal (Fløysand et al., 2017; Rekers & Stihl, 2021). However, local actors may enact agency not only to attract new multinational companies or adapt when they leave, but also to work for positive synergies while the branch plant remains, thus promoting longer-lasting development (Fløysand et al., 2017).

### **2.3.3 The institutional dimension**

In EEG, institutions are commonly defined as the formal and informal rules that guide human activity, following North (1990). Institutions function as social guidelines for appropriate and legitimate behaviour (Bathelt & Glückler, 2014; Benner, 2021), consequently influencing how industries develop in different places (Gertler, 2010; Zukauskaitė et al., 2017). Simultaneously, institutions co-evolve with industry paths (Boschma & Frenken, 2009) thereby carrying the legacies of both past and existing industry paths (Martin & Sunley, 2006). This is also expressed in innovation systems, which are shaped by institutions, while also carrying formal and informal institutions that shape actors' behaviour – with important implications for innovation and economic development (Tödtling & Trippl, 2013). Agents tend to be more aware of formal institutions, such as laws and regulations, actively interpreting and adapting their behaviour to these (Grillitsch & Rekers, 2016; Strambach, 2010). On the other hand, agents often internalize informal institutions, which shape their attitudes, values and expectations (Gertler, 2004). Informal institutions have implications for the perceived acceptability of different behaviours and ways of operating, and thus for actors' ideas and search for economic opportunities and solutions to problems (Fuenfschilling & Truffer, 2014).

While institutions were previously presented as a structural factor shaping industrial evolution (Boschma & Frenken, 2009; Rodríguez-Pose, 2013) and constraining agency (e.g. Martin & Sunley, 2006), regional development scholars have also begun to elaborate on the role of agency in relation to institutions (Grillitsch & Sotarauta, 2020; Njøs & Jakobsen, 2018; Rekers & Stihl, 2021; Sotarauta, 2017; Strambach, 2010). This has emerged as an important issue, since existing institutions may become obstacles to the introduction of radically new products and services; thus it

may be necessary to alter institutions, for instance in order to introduce more environmentally friendly solutions (Binz, Harris-Lovett, et al., 2016). Following in the footsteps of transition studies (e.g. Fuenfschilling & Truffer, 2016), EEG scholars have recently paid increasing attention to agency-institution interactions. Such interactions were implicit in some discussions of the role of institutions in the development of new economic opportunities (e.g. Carvalho & Vale, 2018). However, this issue has been treated more explicitly in recent works that combine institutional geography with an agency perspective (Gong & Hassink, 2019; Rekers & Stihl, 2021). While contributions such as those by Grillitsch and Rekers (2016) and Gong and Hassink (2019), and early work by Strambach (e.g. 2010), primarily shed light on how actors interpret, stretch and adapt to institutions, the impact of agency on institutions has recently moved to centre stage. Thus, the notions of institutional entrepreneurship (DiMaggio, 1988) and institutional work (Lawrence et al., 2011) have been adopted from organizational studies. Institutional work refers to actions aimed at the creation, maintenance or disruption of institutions (Lawrence & Suddaby, 2006). In comparison, institutional entrepreneurship is a monodirectional concept referring to agents initiating divergent changes and actively participating in implementing them (Battilana et al., 2009).

In transition studies, a literature tangent to the industrial path development literature, the notion of institutional work has been introduced to investigate agentic processes in sociotechnical systems (Fuenfschilling & Truffer, 2016). From that perspective, sociotechnical systems are shaped and given direction as different actors interact while doing institutional work that pushes in different directions. On the other hand, institutional entrepreneurship has become a popular concept in the industrial path development literature (Carvalho & Vale, 2018; Grillitsch & Sotarauta, 2020; Jolly et al., 2020; Rekers & Stihl, 2021; Sotarauta, 2015). There, the focus has been on how agents work to change institutions to foster new economic development, in character with the change-driving role ascribed to agency in this literature.

The institutional work approach in transition studies highlights the co-presence of different and sometimes contrasting institutions relating to the same industry

within a territory (Fuenfschilling & Truffer, 2016). Thus far, the agency perspective in EEG has not accounted for within-context institutional heterogeneity to the same extent, but has approached institutional complexity by adding a scalar perspective (Gong & Hassink, 2019; Grillitsch, 2015; Sotarauta, 2017; Zukauskaite et al., 2017). From this perspective, agents deal with institutions at multiple scales, which have different implications for their activities (Grillitsch & Rekers, 2016; Zukauskaite et al., 2017). Actors may be perceived as having greater agency towards institutions at the local scale (Marston et al., 2005); however, actors may enact agency to shape institutions at different scales (Gong & Hassink, 2019). Thus, it seems that a geographical understanding of agency-institution interaction is emerging in the field. However, institutional complexity within geographically delimited contexts should be more clearly incorporated into this perspective. This would require a conceptualization in which multiple institutions may exist in parallel within the same context. In such a conceptualization, social fields may be spaces of struggle in which multiple institutions compete (Emirbayer & Johnson, 2008) and actors do institutional work to maintain or promote certain institutions or undermine others (Fuenfschilling & Truffer, 2016). By conceptualizing the institutional landscape as heterogeneous both within and across scales, we may also gain a better understanding of heterogeneous agency in institutional change processes.

#### **2.3.4 The temporal dimension**

The temporal dimension is central in all evolutionary thinking and research, including work on agency in industrial path development. A key insight here is that the conditions for agency vary across time (Rossiter & Smith, 2021). Some periods may be characterized by strong path dependency, while at other times there may be more space for doing something different. The notion of critical junctures points to such openings, but also implies that the range of options available in the future may be delimited by the choices made at the critical juncture (Rekers & Stihl, 2021; Sydow et al., 2009). Critical junctures are connected to macro developments beyond agents' control. These macro developments represent the passing of history – in other words, time. The importance of macro developments at critical junctures can be seen by two aspects: opportunity spaces and problematic situations. While an opportunity space must necessarily exist for a critical juncture to be possible

(Grillitsch & Sotarauta, 2020), critical junctures are frequently marked by problematic situations, which are often tied to macro developments. According to Emirbayer and Miche (1998), problematic situations create distance from received patterns and may thus trigger change-oriented agency. For instance, actors in industrial towns that have experienced industrial decline have found themselves in a problematic situation, in which business-as-usual was unviable. However, the potential for change agency depends on the opportunity space, which is also tied to macro developments during the same time period. For instance, opportunities to build new industry within biotechnology (Rossiter & Smith, 2021) or wind power (Dawley et al., 2014; Sydow et al., 2021) stem from technological developments, environmental challenges and societal needs that have built up over a longer course of time. At the critical juncture such macro developments intersect with local needs, resources and capabilities, and observant actors use these opportunities for industry development.

While the temporal dimension contributes useful insights into varying conditions for agency over time, it also allows an approach to agency itself. In empirical investigations, time is often an ordering principle to approaching actions and their outcomes (e.g. Jolly et al., 2020; Rekers & Stihl, 2021). However, a temporal perspective can also lay the foundation for a better understanding of how agency develops and is enacted. Many scholars have drawn inspiration from Emirbayer and Miche's (1998) temporal conceptualization of agency, in which actions are informed by past experiences, but also oriented towards the future (Steen, 2016). Nevertheless, actors' expectations of the future are built on their interpretations of current conditions, viewed in light of past experiences. As noted by Grillitsch and Sotarauta, "the differences between individuals as regards perceived opportunities and capabilities to act are to a large extent shaped by the experiences and encounters individuals have had in the past" (Grillitsch & Sotarauta, 2020, p. 714). Accordingly, important aspects of agency itself as being in constant interaction with context may become clearer by attending to the temporal dimension of how experience, skills, knowledge and network relations are developed. When agency is considered to be socially and territorially embedded (Hess, 2004), this embeddedness has developed over time. When an actor is able to communicate with

and co-ordinate actors from different milieus (Sotarauta, 2016), their understanding of the different milieus' perspectives and priorities has been developed through contact with them over time. When an actor's initiatives have succeeded or failed in the past, this influences their own and others' perceptions of the actor's abilities and the potential to carry through with certain types of initiatives. I would argue that these aspects concerning how agency is built up have often been underplayed or black-boxed in the literature. In this dissertation, the temporal dimension contributes to integrating actors' past experiences, towards a processual understanding of agency. However, the way agents accumulate and use combinations of different experiences can best be understood at the intersection of multiple dimensions, especially the relational dimension, to which I now turn.

### **2.3.5 The relational dimension**

Following Garud and Karnøe's (2003) notion of distributed agency, EEG's understanding of agency has generally been one of agency spread across multiple actors. This is intuitive, as an industry must consist of multiple actors. Thus, industry development is not just a matter of starting a firm (Schumpeterian entrepreneurship) but requires collaboration between multiple actors. This is reflected in Isaksen et al.'s (2019) focus on the parallel roles of firm-level and system-level agency in path change, and in Grillitsch and Sotarauta's (2020) trinity of change agency for new path development. In particular, the notion of place-based leadership, which was introduced from the leadership literature, incorporates the relational dimension as it draws attention to how common efforts are organized in informal networks (Sotarauta, 2016). Being able to co-ordinate involves having influence on others, not by force but by inducing them "to willingly do things they would not otherwise do" (Sotarauta, 2016, p. 52). Since this influence is not exercised through formal hierarchies or sanctions, it is instead related to the social embeddedness of both leaders and followers (Granovetter, 1985).

The relational aspect of institutional entrepreneurship has not been granted the same attention within the industry path development literature, yet institutions can only change if enough actors adapt their behaviours to the new institutions (Weik, 2011). Whether actors choose to do this may depend on a range of factors, such as

the fit between the new and the established institutions (Fuenfschilling & Truffer, 2016). However, it also depends on agents' network positions, as certain individuals' network positions enable them to act as institutional entrepreneurs (Battilana, 2006). More precisely, actors who are tightly linked to others in their network have a greater ability to carry out minor changes, while those who have less closely linked networks, or who find themselves at the intersection of multiple networks, are more likely to introduce divergent institutional changes (Battilana & Casciaro, 2012). This has several implications. One is that actors may be more willing to collaborate and adapt to changes if they stem from a known and trusted source. Another is that actors are also enabled by finding themselves at the intersection between different milieus. Being less strongly embedded in one specific milieu allows greater space for generating novel ideas (Zukauskaitė, 2015). Related to this, actors who find themselves in such bridging positions are familiar with the priorities, logics and jargons of the different milieus without having fully internalized them. This eases communication with actors from different milieus (Sotarauta, 2016) and offers opportunities for novel combinations of ideas or knowledge from different sources, consistent with Schumpeter's (1934) concept of innovation as new combinations. It thus emerges that agency is a relational phenomenon, as the effects of individuals' actions often depend on others. It also becomes increasingly clear that agency is built and shaped through social relations. To further develop the understanding of agency in the field, it may thus be fruitful to more thoroughly incorporate insights from 'the relational turn' in economic geography (Bathelt & Glückler, 2011; Ettliger, 2003; Fløysand & Jakobsen, 2011).

To approach the relational aspects of agency, we need to consider the relations between different actors not only as singular relationships, but as parts of different groups or collectives of multiple relations. To this end, the concept of social fields is well suited (Bourdieu & Wacquant, 1992; Hilgers & Mangez, 2015). Social fields are characterized by "dense patterns of social relations, marked by a particular time-spatial scale and knowledge production that constrains and enables the agency of actors" (Fløysand & Jakobsen, 2011, p. 329). The participants in a field share a common meaning system and interact more frequently with each other than with actors outside the field (Scott, 1995). While this common meaning system organizes

interactions within the field, fields can also be characterized by competition between agents who are trying to shape the field's dominating institutional logic (Bourdieu & Wacquant, 1992; Emirbayer & Johnson, 2008). Some fields have a more distinctively social nature, such as the family field or the local community field, while others are of a more professional nature. Fields have different norms, expectations and ways of thinking – different institutional logics – and different knowledge is shared in different fields. Actors participate in multiple fields, and through their relations different fields are tied together and overlap so that social relations in one field may allow for the exchange of information and perspectives across other fields (Ettlinger, 2003). For instance, casual conversation among the inhabitants of a local community might serve as an information source about competing firms in a context in which firms themselves do not exchange information directly (Fløysand & Jakobsen, 2011). Such field-crossing seem to be particularly prevalent in rural places, as they are more spatially contained and include a relatively limited number of actors (Fløysand & Jakobsen, 2011). However, actors mixing fields that represent different spheres of life can also be observed in urban contexts; for instance, when trust is transferred from non-work spheres to the professional sphere (Ettlinger, 2003; Granovetter, 1985) or when individuals use personal networks from their education, work or private relations in searches for job opportunities (Vinodrai, 2006).

The relational dimension also highlights that knowledge development and learning is a social process, as shown by concepts such as communities of practice (Wenger, 1999), thought collectives (Fleck, 1979) and epistemic communities (Knorr-Cetina, 1999). These concepts all approach knowledge development and learning as interactive processes within groups, communities or fields. Sometimes learning is explicit, as in education or professional training, but individuals also acquire knowledge unconsciously, such as ways of operating, perspectives, cognitive frames, symbolic knowledge and know-who, gained through participation in certain fields. In innovation and regional development studies, local knowledge networks and contact with external networks have been emphasized as key to knowledge development processes in innovation (Bathelt et al., 2004; Boschma, 2005; Sotarauta, 2017). Although this involves scientific and technical knowledge, non-



local ties are also important for accessing other types of knowledge, such as knowledge about markets, symbolic knowledge (Manniche, 2012) and knowledge of accessible external resources (Tripl et al., 2018). As non-local actors often participate in different fields than do local actors, collaboration with the former may give the latter access to different knowledge or resources and markets that are key to path development (Binz, Harris-Lovett, et al., 2016; MacKinnon et al., 2019).

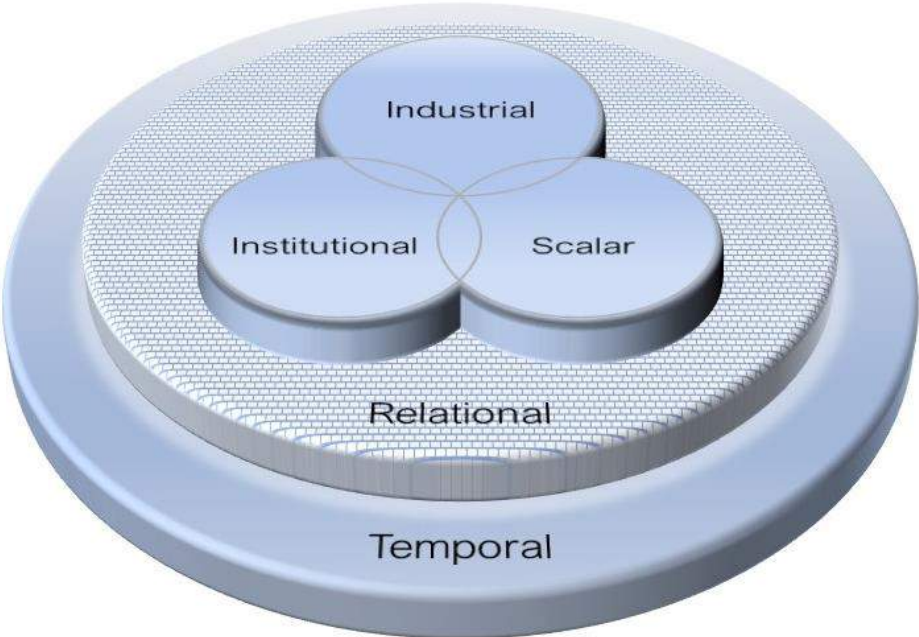
The literatures on knowledge and innovation networks show that learning (and innovation) is an interactive process, and highlight the relational dimension as knowledge exchange and collaboration are not determined by geographical vicinity, but by cognitive proximity and the usefulness of ties (Boschma, 2005; Giuliani, 2007). Being the foundation for decision-making and the basis for coming up with new ideas, an individual's knowledge shapes their agency. However, as should be clear from the discussion above, learning is only one side of the relational dimension of agency. Tying together actors and drawing on resources from different fields are a major catalyst to making things happen (Sotarauta, 2016). This is usually favoured by prior contact with the actors and a certain understanding of the fields one aims to involve through these actors. In other words, agency is enacted together with, and in relation to, others; and the ability to act is built on past relations.

As shown by the foregoing discussion, actors' interactions with different contextual dimensions are interconnected through relations. Thus, the relational dimension integrates multiple dimensions in an approach to agency–context interaction. This allows for a processual understanding of agency in industry development by including and connecting relations and learning from multiple past experiences with actions that draw upon and change different contextual elements in efforts towards industry development. The next section draws together this multidimensional framework, showing how it unites existing insights and allows for the generation of new insights about people's ability to act, and how their actions contribute to industry development.

## **2.4 Towards a multidimensional framework**

In this dissertation agency in industry development is approached through five analytical dimensions, highlighting different aspects of interactions between agency

and context. The industrial, scalar and institutional dimensions each steer attention towards different elements of the geographical context in which actors operate. Past research focusing on these dimensions provides insight into how contextual factors limit the scope for agency and how agency may contribute to shaping the context and industry paths. I argue that this agency–context interaction can be better understood as relationally and temporally embedded, because it is through relations that agency is influenced by and shapes different contextual factors, and this interaction unfolds and evolves across time. Thus, integrating the industrial, scalar, and institutional dimensions with the relational and temporal dimensions allows for an analytic approach to agency–context interaction, to understand both actors’ ability to act and how their actions shape industry path development. Figure 2 illustrates this multidimensional approach.



*Figure 2: Five dimensions of agency–context interaction in industrial path development.*

The five dimensions provide different, albeit sometimes overlapping perspectives and insights. The industrial dimension gives insight regarding the implications of existing industry structure for future industry development, often explained by resources, competences and knowledge, but also by local culture and institutions that have co-evolved with industry (Baumgartinger-Seiringer et al., 2020; Martin & Sunley, 2006). Thus, it has important overlaps with the scalar, institutional,

relational and temporal dimensions. The scalar dimension contributes an understanding of the implications of geographical location and interlinkages, sharpening the lens for examining agents' interactions with contextual factors at different geographical scales. In this sense, the scalar dimension clearly intertwines with the institutional and relational dimensions. The institutional dimension conceptualizes social structures that shape agency and ties these to different milieus (e.g. industry, local community), here conceptualized as fields. Institutions may be specific to certain social fields or territories and can change over time. In other words, the institutional dimension has important contact points with the other four dimensions.

I argue that although there are overlaps between all five dimensions, understanding *how* agency interacts with context requires a relational and temporal perspective. The relational and temporal dimensions provide analytical tools for approaching agency–context interaction as a process, rather than just accentuating different aspects of context with which agency interacts. Therefore, in Figure 2, the industrial, institutional and scalar dimensions are embedded within the relational and temporal dimensions. The temporal dimension is an ordering principle for all evolutionary thinking and allows us to analytically separate the development of embedded agency from its effects, to explore the interactions between agency and structure in industry development. Through the temporal dimension, it also emerges that there is greater space for change agency (and new industry development) during some moments than others, and that this is connected to macrostructures or historical development (Grillitsch & Sotarauta, 2020; Rossiter & Smith, 2021). Thus, the temporal dimension highlights the role of factors with which actors have no direct contact, but that still shape their space for agency. Through the relational dimension, we see how actors operate across multiple social fields (Fløysand & Jakobsen, 2011; Sjøtun, 2020) and thus tie together elements from the contextual dimensions. In highlighting how actors interact with multiple aspects of a context, the relational dimension provides an approach to exploring how agency develops, is enacted and produces effects in interaction with context. Thus, together the relational and temporal dimensions provide insight into both how agency builds on relations and how these relations – and associated assets – are activated when

exercising agency. This is key to understanding agency–context interaction in industry development processes. The main insights or perspectives gained through each dimension are summarized in Table 1.

<b>Paper</b>	<b>Main dimension(s)</b>	<b>Focal areas</b>
<b># 1</b>	Temporal	Varying space for agency at different moments, due to different developments and structures Agency is built up over time
<b># 2</b>	Industrial	Industry mix, assets, skills, knowledge and support structures
	Scalar	Interscalar linkages Events and developments at multiple scales
	Institutional	Conceptualizing non-material social structures as social guidelines
<b># 3</b>	Relational	Relations within and between fields are central to developing agency and enabling change

*Table 1: Primary dimension(s) in each paper, and each dimension's focal areas*

The three papers in this dissertation emphasize different dimensions. Table 1 shows which dimensions are emphasized in each paper. Paper #1 emphasizes the temporal dimension and in this respect, it is a typical EEG paper. It shows how inhabitants in rural communities enact agency at critical junctures, both using opportunities and being pushed by urgent local problems. Through the temporal dimension, the interaction between local industry conditions and macro developments is drawn to the fore, while overlaps with the scalar and relational dimensions emerge from the importance of ties between local and non-local actors in industry development. Paper #2 emphasizes intersections among the institutional, industrial and scalar dimensions. It shows how institutions interact across scales, but also how agency works by crossing fields, entering new fields and activating higher-scale fields to gain leverage towards the targeted institution. Finally, Paper #3 focuses on the relational dimension. It explores how actors combine knowledge and practices developed through participation in different fields. This paper illustrates that

multiple embeddings shape agency insofar as not only professional fields, but also those tied to leisure activities, volunteering and local politics, provide learning used in innovation projects.

Collectively, the three papers show that the five dimensions overlap and intertwine, but that they all add something unique to the analysis of agency in industry development. Since they are intertwined, the insights gained from emphasizing one dimension shed new light on the others. Combining the industrial, institutional and scalar dimensions provides a perspective that considers how agency interacts with industry and other parts of society in parallel. Combining these with the relational and temporal dimensions also shows how agency is shaped by the institutions in the social fields in which agents participate, and how agency contributes both to maintaining and changing these institutions over time. Through the relational dimension, it also emerges how agency develops and is enacted through relations with others (Battilana & Casciaro, 2012; Grillitsch & Sotarauta, 2020; Weik, 2011), and that moving between diverse fields is central to agency in industry development (Fløysand & Jakobsen, 2011; Sjøtun, 2020). Relations are built up and change over time, and actors may strategically establish new relations for industry development aims.

I argue herein that a processual approach to agency, rather than focusing only on outcomes, provides greater insight into the roles of agency in industry development and how this agency plays out. Seeing agency–context interactions through the temporal and relational dimensions is the foundation for this processual approach. The relations that are key to agency are developed over time, both within specific places and with more distant ties. Thus, at different moments in time agents may have different knowledge that informs their actions, different inspirations for new ideas and different network positions, and thus different abilities to mobilize resources. Furthermore, industry development involves long-term efforts by agents working towards a goal over time, adapting their strategies according to the results of their actions, to the development of new relations and to changing contextual conditions. The contextual conditions change as a result of past agency (Bathelt & Li, 2014) and interactions between different contextual factors at different scales. Thus,

agents' knowledge, experiences and networks, and the contextual conditions under which they act, vary over time, also due to the interaction between agency and context.

This approach ties into a recurring theme in EEG works on agency about the respective roles of, and the interactions between, agency and structure in industry development (Grillitsch & Sotarauta, 2020; Isaksen et al., 2019; Miörner, 2019). There is general agreement that structure and agency interact. However, as aptly put by Miörner, “there is a need to move beyond the simple implications of the argument that actors are embedded in, and influence, structures and highlight the interplay between structure and agency...” (Miörner, 2019, p. 69). In line with evolutionary thinking, temporality has been a tool for accomplishing this (e.g. Jolly et al., 2020), often drawing inspiration from structuration theory (Giddens, 1984) and Emirbayer and Miche's (1998) temporal conceptualization of agency. Archer argues that temporality may be used in a more fruitful way if analytically separating structure and agency as “structure logically predates the action(s) which transform it” and “structural elaboration logically postdates those actions” (Archer, 2010, p. 238). However, this separation may be difficult in practice. Structures are multifaceted and multiple actors enact agency for different goals, influencing different structural elements or having contrasting influences on the same structures. Agents may have internalized certain institutions (which thus shape their agency) and have their space for action limited by the available resources, while working to set up new organizations or build new infrastructures. Thus, agency can be shaped by some structuring elements while transforming others. In short, structure-agency interaction is multidimensional, which makes it difficult to fully understand the discrete impacts of structure versus agency in an industry development process. However, exploring the complexity of this interaction is a small step towards highlighting the interplay between structure and agency in industry path development, adding nuance to existing approaches in the literature.

### **3. Methodology**

The aim of this dissertation is to contribute towards a better understanding of agency–context interaction in industry development. Working towards this goal requires detailed empirical investigations of how key actors operate in specific cases of industry development. Yet, an understanding that is valid beyond the specific contexts can only be achieved through theoretical generalization (Gong & Hassink, 2020). Following critical realist thinking, generalizing is not a matter of extrapolating from individual cases to a population, but rather of generalizing through abstraction (Danermark et al., 2002). Abstraction implies developing theory. The entire research process herein – from design to data collection to analysis – was designed to further develop theory about agency in industry development. This chapter describes the methodology used towards achieving this goal, and the analysis process, by drawing on, recombining and expanding existing theory. Section 3.1 lays out the dissertation’s ontological and epistemological foundations. The choices regarding research design are further elaborated upon in the next section (3.2), followed by a discussion of the data collection methods (3.3) and analytical approaches (3.4).

#### **3.1 Critical realism as philosophical embedding**

How we conduct research depends on how we believe it is possible to gain knowledge about the world. In other words, it is a matter of epistemology. However, many epistemologies rest on an ontology; that is, a philosophy of the nature of being. This is also the case in critical realism. Critical realist ontology asserts that reality exists independently of our knowledge about it, but this reality is not immediately observable. Accordingly, this ontology excludes both positivist and poststructuralist approaches. In line with this thinking, reality’s unobservability is the reason for science to exist. This is because, as stated by Danermark et al. (2002, p. 20), “... if reality were transparent, there would be no need for science”.

Roy Bashkar (1978), the father of critical realism, distinguishes between three ontological domains: the real, the actual and the empirical. The real is the reality, which we cannot directly observe. This consists of objects and structures of necessary relations between objects. However, we are only able to observe events in

the empirical domain. These events are generated by mechanisms in the actual domain. Mechanisms may or may not be triggered, meaning that a specific event is not an ‘automatic’ consequence of certain underlying structures, but also depends on whether certain mechanisms are triggered. Thus, the observable events caused by underlying structures and mechanisms vary with contingent conditions, which influence whether mechanisms are triggered and how they play out. Figure 3 shows Andrew Sayer's (1992, p. 117) illustration of the relationship between structures, mechanisms, events and contingencies, making the methodological implications of the three ontological domains more tangible.

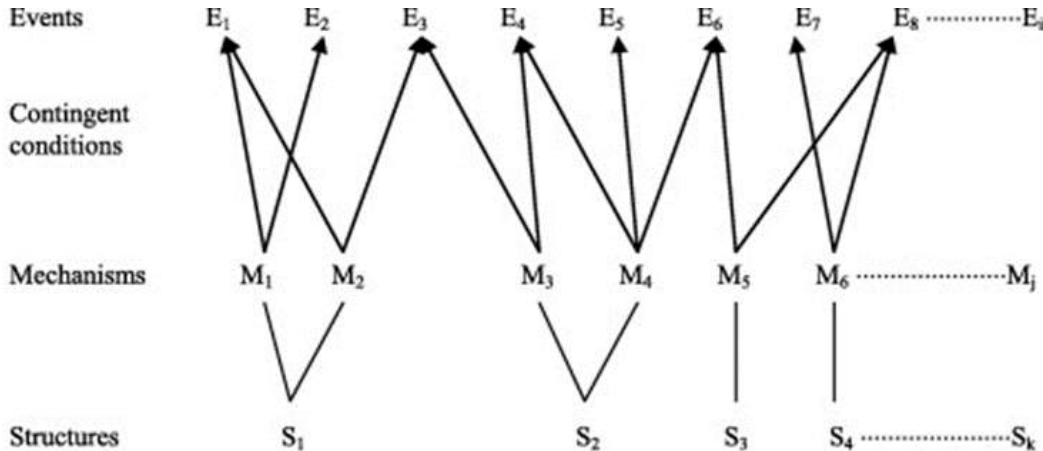


Figure 3: Structures, mechanisms and events. Source: Sayer (1992, p. 117).

The aim of research is to gain knowledge about the real domain. This requires that we identify the mechanisms and contingent conditions influencing an event, and in turn, distinguish these from the structures that give objects (or actors) certain causal powers. This is done by abstracting from the empirical domain; that is, by developing theory based on empirical events. Theories tell us *why* certain phenomena take place. As theories separate the context-dependent (contingencies) from structures and mechanisms (necessary conditions), they allow for bringing findings from one context to another (Njøs, 2017, p. 47). However, theories are not the final, complete truth. We therefore continue refining, rearranging, redefining, and sometimes falsifying, existing theoretical constructs by applying them to new empirical material (Fairclough, 2005). This was also the case in this project, which began with a theoretical apparatus developed by others. For instance, the notions of



path dependency and related variety informed data collection, while Grillitsch and Sotarauta's (2020) trinity of change agency was applied when abstracting from the empirical material. Misfits and contradictions between empirics and theoretical constructs, and phenomena that remained unexplained, were then used to inform refinements, new concepts or new combinations of concepts. For instance, the notion of reproductive agency was introduced to the path as process model in Paper #1, and concepts from cognitive theory were combined with social fields in Paper #3.

Agency is central in this dissertation. As human agency is, according to Bhaskar (1989) *the* major difference between the object of study in the social sciences versus the natural sciences, critical realists have discussed the issue at length (Archer, 2010; Harvey, 2002; Sayer, 1992). Social sciences need to be able to consider society, but also the humans within it. Just as society is not possible without individuals, so too can individuals' existences and actions only be understood in relation to the society in which they take part. This leads to a major methodological challenge, insofar as society is only accessible to us through individuals' experiences (Sayer, 1992). Thus, we must move from the observation of these experiences towards an understanding of society. This is done through abstraction and theorization. Critical realism's stratified ontology aids these operations. According to this ontology, reality consists of multiple strata, where higher strata are built upon, but cannot be explained by lower strata (Danermark et al., 2002). For instance, electrons are at a lower stratum than atoms, but the structure and 'behaviour' of atoms cannot be fully explained by electrons. This is because each stratum has emergent properties. Similarly, individuals are on a lower stratum than society. Thus, individuals are part of society, but society cannot be reduced to the sum of individuals' psychologies and actions. Therefore, events can be generated by mechanisms from the agentic stratum as well as the societal stratum.

However, things are complicated by the interdependency between individuals and society, agents and social structures. Social structures exist only through actors' activities and conception of these activities (Bhaskar, 1989). Furthermore, social structures, unlike natural structures, are only relatively enduring. Margaret Archer (2010) builds on this insight in her approach to structure and agency, in which a

temporal perspective contributes to analytically resolving the dilemma of the interdependent dialectic between the two. At any given moment, agents enact agency within the space consented by existing structures. When aiming for change, existing structures are also the material being moulded. Thus, agency is shaped and restricted by existing structures. However, actions may contribute to changing future structures. Thus, through a temporal perspective one may distinguish the impact of structure upon agency from the impact of agency upon structure. This is a foundation for approaching agency, both empirically and analytically (Grillitsch et al., 2021). Observations of common patterns of actions, and of agents' understandings of their space for action, can be abstracted towards an understanding of established structures. Actions and perceptions that deviate from these structures are events from which we can abstract towards agency. The outcomes of these actions shape future structures, which lay the foundation for future social activity, through which actors will both reproduce and reshape these structures.

A methodological implication of this is that although critical realism is a realist alternative to hermeneutical approaches, meaning and interpretation can be empirical events from which we may approach agency. Just like the researcher, agents do not 'see' underlying structures. Rather, agents act based on their perceived realities. These perceptions build on observed events, which are subsequently interpreted and given meaning. Agents' perceptions and the meaning they ascribe to their social surroundings can be the foundations for actions with real effects (Fairclough et al., 2002). Thus, perceptions and meanings ascribed to certain things or social activities can be relevant to understanding agency, but sometimes also structures, as shared perceptions and meanings may gain structural properties.

To move beyond a collection of observations of actions and perceptions, towards an understanding of agency–context interaction in industry development, abstraction from events is key. This was aided by working with multiple qualitative cases. As contingencies usually differ between cases, comparison is useful for separating contingencies from generative mechanisms and underlying structures with causal powers. For example, coupling local activities with external resources is a necessary

condition for industry path development, while the availability and source of these resources are contingent and case-specific. The comparative research design, intended to ease the movement from the empirical domain towards theory (Baxter, 2010), is described further in the next section.

### **3.2 Research design**

The project was designed as a multiple case study, investigating and analytically comparing agency–context interactions in three rural tourism cases of industrial path development. The cases were selected based on variance in the dependent variable, that is rural tourism industry development (Gerring, 2017). Given how many ways a tourism industry might develop in a location, and how many categories of touristic locations and activities exist, it would be naïve to believe that an overview of all relevant variables and all cases from which to choose is possible. Thus, fully representative case selection, which is often considered the aim of case selection in quantitative methods (Seawright & Gerring, 2008), is excluded. Rather, for the aim of theory development through in-depth case studies, the cases were strategically chosen based on a few criteria to ensure that they were true cases of tourism industry path development. The overall criteria for finding places where tourism industry paths had developed were tourism growth over time and local specialization in a distinct type of tourism. To increase comparability and reduce background noise, the cases were also selected from the same general context. They were each a village – Flåm, Odda and Sogndal – by the fjord, had similar distances to the nearest city and were in Vestland county, Western Norway.

Beyond being rural tourism locations, the main criteria for case selection were indicators of tourism path development, in particular growing visitor numbers over time, emergence of new types of tourism activities that had not existed prior to path development, and a distinct development profile. The three cases stand out as having more visitors than most rural locations in the region. Flåm especially had a large number of visitors, which had increased over time (see Table 2). Odda too saw exceptional growth since the emergence of the town's new tourism industry path, and Sogndal has had a notable increase in student numbers at the University of Applied Sciences since the mountain sports festival was first organized. Although

the purely quantitative increase in visitor numbers qualifies Sogndal as a case of tourism path development, upon closer inspection this number is a poor indicator. Sogndal is a strategic infrastructure point, where many travellers simply stop over for the night. In addition, many outdoor sport tourists, who are a major target group for Sogndal, may not use formal accommodation as wild camping is legal and common in Norway. Rather, the new path can be observed in Sogndal's new tourism ventures, media attention to outdoor sports in Sogndal, and from the student numbers at the University of Applied Sciences (the connections between student numbers and outdoor tourism in Sogndal are elaborated on in Paper #1).

Furthermore, developments in each case can be tied to specific ventures and types of activity. Along their paths, new activities tied to the same type of tourism have emerged. The last selection criterium is related to this; each village also saw the development of a distinct type of tourism, namely outdoor sports tourism in Sogndal, mass hiking tourism in Odda and mass tourism based on a scenic railway in Flåm. Thus, they may be considered specific industry development paths. In addition to being a requirement for actually being a case of industrial path development, the specificity of these developments indicates that there are causal mechanisms at play beyond taking part in the global tourism growth observed prior to the Covid-19 pandemic (UNWTO, 2020). Accordingly, events in the histories of the three places are a good entry-point towards the interactions between agency and contextual factors that contributed to tourism industry development in the three cases.

	<b>Development over time - annual visitor numbers</b>		<b>Type of tourism activity</b>	<b>Role of tourism</b>
Flåm	2005: ca. 500 000	2018: ca. 1 000 000	Mass tourism based on scenery	Tourism as specialization
Odda	2013: ca. 20 000	2018: ca. 90 000	One-attraction destination: hiking tourism	Tourism as diversification
Sogndal	Students in 2005: 2245  Other population: 2974	Students in 2018: 3022  Other population: 3733	Niche tourism: outdoor sports	Tourism as complementary

*Table 2: The magnitudes, types and roles of tourism in Flåm, Odda and Sogndal.*

Agency takes many forms, and how it plays out depends on a variety of aspects relating to the agency itself and its interactions with contextual factors. The phenomenon of industry path development also has a large degree of equifinality, meaning that many different causal paths may lead to new industry path development (Seawright & Gerring, 2008). Thus, following critical realist thinking, exploring diverse cases may be fruitful for distinguishing between necessary and contingent conditions, and thus for developing theory that fits more than one type of causal path (Danemark et al., 2002, p. 105). It is therefore valuable to work with multiple cases and to use the variance between them for analytical purposes.

For the same reason, it is also advantageous to study empirical cases that differ from those that laid the foundation for the theory to which the study aims to contribute. The three rural tourism development cases stand out from the empirics used to lay the foundation for agency research in EEG and path dependency theory (Bennat & Sternberg, 2020), where attention has been primarily directed at urban and technology-intensive industries (Schubert et al., 2013), followed by heavy industries in need of breaking out of lock-in (e.g. Hassink, 2010). In contrast, the specific dynamics in rural areas have received less attention (Eder, 2018; Isaksen & Sæther,

2015). Working with cases that differ markedly from those upon which a theory was based is a form of implicit comparison (Seawright & Gerring, 2008) and a good starting point for further theory development. Rural cases are also particularly well suited to the study of agentic processes, as they involve a smaller number of actors and industry paths. This makes it easier to both trace the paths of who did what, when and how, and to gain an overview of the relationships between actors, the impacts of context on actors and the multiple effects of actions.

Mechanisms and structures that are obscured in some situations may stand out in others; through comparative reasoning, mechanisms may be detected also in the cases where they are obscured (Danermark et al., 2002). In this sense, working with multiple cases eases retrodution (Baxter, 2010). For instance, although the opportunity space for agency stands out more clearly in the case of Sogndal, once attention has been drawn to the notion of opportunity space, it becomes evident that developments in Flåm and Odda were also possible because of certain (external) trends. Similarly, the role of Schumpeterian entrepreneurship stands out clearly in Odda, while developments in Sogndal and Flåm were driven by unexpected actors doing Schumpeterian entrepreneurship in unexpected ways. Thus, on the one hand, there emerges the central role of Schumpeterian entrepreneurship in new industry path development; on the other, the atypical forms of Schumpeterian entrepreneurship necessitate a reconsideration of some assumptions about this type of agency. This illustrates how working with multiple cases favours theory development.

### **3.3 Methods**

The cases are approached through process tracing (George & Bennett, 2005; Pike et al., 2016) to gather a type of data that allows us to answer questions about *how* agency interacts with context and *how* and *why* this contributes to new industry path development. Detailed qualitative data should not only allow investigation of the causal relationships suggested by existing theory; they should also allow for discovery of aspects that have been heretofore obscured in existing theory based on other cases. Thus, consistent with the overall aim to produce new theoretical insights (George & Bennett, 2005), this dissertation relies primarily on qualitative

data, which were collected through different methods in three phases. In the first phase, data were collected to identify suitable cases of tourism industry development, as specified by the research design. Background material on the tourism industry in Western Norway was collected by reading reports, strategy documents and newspaper articles, and doing observation at sectorial events. Lists of tourism enterprises in the region and visitor number statistics in different locations were also consulted. Interviews were conducted with eight individuals in positions central to the regional tourism industry. Based on this material, Sogndal, Odda and Flåm were chosen as the project cases.

In phase two, which began in February 2019, I mapped out the sequence of events in the tourism development in the three villages through process tracing (George & Bennett, 2005; Gerring, 2017), or, in the language of EEG, by tracing the path (Pike et al., 2016). I collected written material on the three cases and conducted initial interviews with actors who appeared to have played a central role in tourism development in the three villages. Based on this material, other interviewees were chosen. The semi-structured interviews all covered some of the same topics, such as how the place had developed over time. This strengthened the comparability of the data. However, the interview guides were also adapted to the actor type, for instance with specific questions regarding matters with which they had been involved. The interviews were recorded and transcribed as data collection proceeded. When I had sufficient material, I organized the information in temporally coherent paths. As far as possible, I cross-checked information from interviews with written sources, and collected additional written sources such as minutes from meetings of residents in Flåm, and newspaper articles and documents from the municipal archives in Odda. According to Yin (2014), combining different types of sources helps to increase the internal validity of data. Indeed, cross-checking interviews and triangulating between different types of sources allowed me to correct for some of the errors deriving from the weaknesses of human memory (Henning, 2019).

In the third phase, I targeted specific gaps in the data material. For Paper #1, this meant filling information gaps, cross-checking certain information or causal relationships. However, most of the third phase was concentrated on Papers #2 and

#3. Both papers have a basis in the paths that were mapped in Paper #1 (see Figure 5). However, they focus on different dimensions of agency–context interaction. The idea for Paper #2 emerged from the path narrative developed in Paper #1, but required significant additional data. The debates and conflicts regarding cruise tourism in Flåm were clear in the documents and interviews previously collected, but I needed more data on who did what, particularly in relation to the policy processes. Furthermore, documents had to be collected systematically to allow text analysis. A detailed overview of these documents is available in Paper #2. Paper #3 focuses on the micro level, that is, the individual, what shapes their agency and how they enact it. This focus emerged from the interview material collected in the second phase. Nevertheless, some additional and follow-up interviews had to be conducted to fill gaps and gain sufficiently detailed data for micro-level analysis.

In total, the data material for the dissertation consists of 36 interviews and about 800 pages of reports, documents and newspaper articles. Figure 4 presents a general overview of the material collected for each paper, showing how the data collected for Paper #1 provides the background data for Papers #2 and #3.

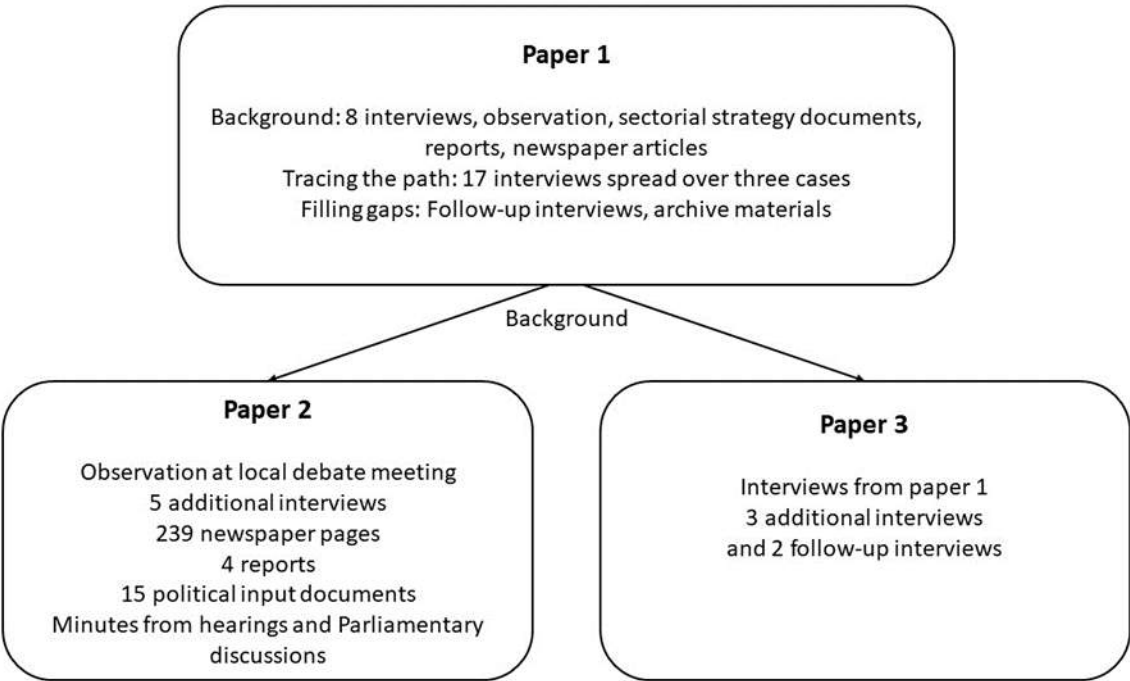


Figure 4: Data collected for each paper.



### 3.4 Analysis

Agency and its interaction with context can only partially be arrived at empirically. We may observe actions and outcomes, but not why or how agents do what they do, or why this leads to certain outcomes. Accordingly, the agency process needs to be arrived at analytically. Analysis goes on throughout the entire research process as there is continuous movement between the concrete and the abstract, empirics and theory (Danermark et al., 2002). For instance, sorting information chronologically during data collection is a first analysis step, serving not only to understand whether pieces are missing, but also as an important indicator of causal relationships (Butzin & Widmaier, 2016; George & Bennett, 2005). However, analysis moves centre stage as the data material becomes more consistent. This involves moving from considering useful theoretical approaches to reinterpreting the material in greater detail by abstraction and considering the relations between objects (Danermark et al., 2002). For instance, the relations between critical junctures and agency are an abstraction of specific situations experienced by people in the case villages, specific actions undertaken in these situations and the observed outcomes of these actions.

The material was also analysed to identify recurring events, topics and narratives. Some events and narratives were expected, while others were surprising. As expectations are informed by theory, unexpected patterns are a sign of shortcomings in existing theory. The unexpected may thus be a source of new theoretical insights. For instance, many of the people central to the cases had unexpected professional backgrounds relative to their tourism achievements. In the narratives about how they started their activities, several entrepreneurs also emphasized experiences from leisure activities. Abstracting through abduction, work and leisure are different learning experiences. Accordingly, I gathered additional data on actors' backgrounds and how they carried out their tourism development activities. By using learning and knowledge combinations as guiding topics, we (my co-authors for Paper #3 and I) considered different conceptualizations of the processes described in the empirical material. While some patterns could be 'explained' through familiar concepts, others did not fit. Attention was thus directed towards the difficult parts of the material. Eventually, this led us to introduce the notion of cognitive frames to a

theoretical perspective that generally emphasizes learning as gaining knowledge about something, i.e. a view on knowledge as an 'object'.

The focus of Paper #2 also emerged from the interview material. From the process tracing in Paper #1, the public debate and political work surrounding cruise tourism in Flåm appeared to be a matter of institutional change. Process tracing for Paper #2, with emphasis on who did what in which context, was combined with text analysis as written statements are an observable form of institutional work (Lawrence & Suddaby, 2006). In total, 289 pages of articles, opinion pieces and editorials from the local newspaper, published between July 2014 and July 2020, were uploaded to NVivo and coded for topics and actors who made statements. For instance, environmental sustainability, economic sustainability, nature protection, cruise tourism and local protests were recurring topics. Different arguments were detected within the topics, and actors were connected to arguments. This allowed for chronological sorting of the arguments of different actors. Arguments presented at hearings and policy documents were also considered in the chronology. This allowed me to analyse which actors had changed their argumentation over time. In doing so, the different targets of argumentation in different contexts also had to be considered. Combining information from newspaper articles with interview materials and political documents, I connected shifting argumentation and institutional logics to new connections established between actors, and to new practices and policies. This eventually led to the insight that changes in institutional logic are connected to institutional work across different social fields. Furthermore, changes in policy and practices were both drivers and material outcomes of institutional change. In this sense, the approach was inspired by Fairclough's (2003, 2005) critical discourse analysis, which combines discourse analysis with the analysis of other actions, events and elements.

Investigating institutional change implies studying structures as well as the agency moulding them. In this case, agency is accessible by viewing statements in their contexts, and in relation to actions. Institutional logics are structural and can only be arrived at through additional thought operations. One may distinguish between different institutional logics based on goals, priorities and values (Fuenfschilling &

Truffer, 2016). These are not directly observable but can be approached by relating multiple statements and by considering reasons for those statements to have been made in certain contexts. Based on whose argument aligned with which logics, and in which contexts, I could identify different social fields, which were either dominated by one logic or characterized by clashing logics. Following the argumentation of different actors in multiple social fields across time gave an overview of interactions between fields and institutional change that came about as a result of these interactions and of actors' institutional work.

The abstractions made throughout the analysis were informed by existing theory; that is, abstractions made by other researchers in the past (Gong & Hassink, 2020). Informed by the empirical material, theoretical perspectives and concepts were then combined in new ways, and in some cases, their meanings were adjusted. As explicated by Fairclough (2005, p. 923), abstraction to theoretical concepts is not done for the sole purpose of theory development, but also to better understand the phenomena under study:

*Social research proceeds through abstraction from the concrete events of social life aimed at understanding the pre-structured nature of social life, and returns to analysis of concrete events, actions and processes in the light of this knowledge.*

The theoretical frameworks developed herein have allowed for understanding the observed events. They may not be the only explanation for these events, but they certainly allow for understanding them better than if the course of events were simply described. In addition, they also render insights from these concrete experiences more transferrable to other empirical contexts.

## **4. Empirical context**

In the spirit of economic geography as a contextual science (Asheim, 2020), some key aspects of the industrial and geographical context need to be brought to the fore. Empirically, this dissertation investigates the development of tourism industry paths in Sogndal, Odda and Flåm. Certain characteristics of the three villages, their histories and local communities, are central to understanding their tourism industry path development and how agency plays out in these. Thus, it is worth briefly describing the three local contexts, as well as the industrial context. Peculiarities of the tourism industry may have implications for studying the role of agency in industry development. Furthermore, because there have been debates regarding the economic importance of tourism in Norway (E. W. Jakobsen & Espelien, 2010), it is also worth examining the role of tourism in the region where Sogndal, Odda and Flåm are located.

### **4.1 The tourism industries**

As pointed out by Leiper (2008), the tourism industry can more precisely be referred to as plural tourism industries because it is defined by the activity of its customers (i.e. tourists) rather than by that of the companies. It thus consists of several industries in which tourists make up an important portion of the customers, that is, industries producing different parts of the tourism experience. These are primarily accommodation, transportation, food and beverage services, experiences (e.g. cultural activities, organized nature experiences) and tourism services (e.g. tour operators) (E. W. Jakobsen & Espelien, 2010). In several of these industries, services are sold to locals and work travellers in addition to national and international tourists.

For the segment in which services are offered to foreign travellers, the tourism industries are export industries (Teigen, 2012). Export earnings have often been part of the rationale behind public efforts to develop tourism industries. Another and probably more important reason is that tourism was a growing sector globally and in most countries (Innovation Norway, 2019a), at least until Covid-19 was declared a pandemic in 2019. While tourism is not among the most profitable activities (Teigen, 2012), it is a service industry that can be developed in places that lack the

preconditions for developing most other growth industries. Thus, tourism has often been promoted as an opportunity in rural areas for population retention, maintenance of public services and employment when the primary industries decline (Carson & Carson, 2018; Hall et al., 2016; Neumeier & Pollermann, 2014; Teigen, 2012). Similar tourism investment rationales have been presented for towns and cities experiencing industrial decline (Cruickshank et al., 2014; VanHoose et al., 2021). Maintaining services, common goods and local communities is thought to contribute to the attractiveness of these rural and post-industrial places, maintaining inhabitants' quality of life and preventing decline into irrecoverable conditions, thus keeping the door open to new, future developments.

Nonetheless, there are many problematic sides to development through tourism industries. From an economic point of view, earnings are often lower compared with many other industries (Teigen, 2012). A large portion of tourism jobs also pay lower wages (Åberg & Müller, 2018; Ioannides & Zampoukos, 2018). Services in tourism are often of a type where effectivization or automatization would reduce service quality. This means that successful tourism development creates jobs, especially for workers without higher education. However, it also means that labour costs carry a notable competitive disadvantage for tourism industries in countries like Norway, where the living costs impose a relatively high minimum wage (Svalastog, 2010). Linked to this, the tourism industries are often considered to have an innovation deficit (Hjalager, 2002, 2010). Although any deficit may have been somewhat exaggerated due to the difficulty of measuring service innovation (Kofler et al., 2018), it is safe to say that the tourism industries have not yet found innovative solutions to the challenges of either labour intensiveness, or multiple social and environmental sustainability issues.

The tourism industries have persistent challenges with externalities. On the one hand, many factors that directly influence customer satisfaction are beyond the control of the single firm; on the other, the (positive and negative) impacts of tourism activity go beyond the influence of any single business. Tourism has a large environmental impact, both place-specific (e.g. littering, landscape wear) (Dosquet et al., 2020; Evju et al., 2021) and globally (i.e. climate gas emissions) (Gössling &

Peeters, 2015). Due to externalities, tourism of a magnitude that provides economies of scale runs the risk of undermining the very assets that make the destination attractive to tourists (Milano et al., 2019; Randelli & Martellozzo, 2019). This is especially clear with regards to nature and rural tourism, where travellers enjoy natural or cultural landscapes, silence and ‘authenticity’, all of which are assets that may be damaged by receiving too many tourists and developing infrastructures calibrated for large-scale tourism (Garrod et al., 2006).

The particularities of the tourism industries when it comes to strong connection to place and the importance of efforts beyond the firm, carry implications for agency in tourism development, and thus for *studying* agency in tourism development relative to other industry development. Two major implications are that agency is likely to be spread across many actors and that it should be relatively easy to observe. These implications are tied to the structure of the tourism industry in that it consists of several tourism industries, meaning that many different actors are involved in development efforts. It also means that someone must take on the extra work of coordinating. Because tourism is expected to create much-needed workplaces, public sector actors are likely to be central, particularly in rural contexts. Tied to this, collaborative efforts at the place level are also likely to be ‘up in the day’ as people discuss their shared goals. This relative ease of observing agency in tourism development also follows from the strong interconnections between tourism development and place and local community, not only in the efforts to create positive interactions, but also to handling negative impacts of tourism on the local community. If negative impacts become too strong, this often becomes a local topic, and there will, in most cases, be further agency in response. The variety of actors likely to be involved in tourism development and the necessary overtness of some of their activities are advantages to studying agency in the tourism industry. In other words, there are reasons to expect agency in tourism industry development to be more distributed than agency in the development of some other industries. Furthermore, there are reasons to expect that interactions between agents will be relatively open, and thus more observable. However, although this may play out differently empirically across different industry development paths, in abstract terms, agency – how it develops, is enacted and contributes to industry development

– is a multidimensional phenomenon from which insights can be drawn across geographical and industrial contexts.

## **4.2 Western Norway and the tourism industries**

The villages investigated herein are all located in Vestland county, Western Norway. Vestland has 630 000 inhabitants and covers an area of 33 871 km<sup>2</sup>. Hence, it is predominantly rural and sparsely populated, with the exception of Bergen and its semi-urban surroundings. In terms of value creation, oil and gas is the largest industry in Vestland, while marine and maritime industries are other important export-oriented value creators in the region. However, in terms of employment, tourism (as defined by NACE-codes) creates more jobs than oil and gas (Vestland Fylkeskommune, 2020, p. 26).

The region has a long history of tourism, dating back to English lords visiting villages to fish salmon and after the 1840s, more regular travellers visiting the fjords by steamer. Western Norway is still the Norwegian region that is visited by most foreign tourists, as 53% of foreign tourists in Norway visited Western Norway in 2019 (Innovation Norway, 2019a). For the average tourist, nature is the primary reason to visit Norway (Innovation Norway, 2019b). As home to the most famous fjords, Vestland is a key tourism area in Norway, in which many visitors search out rural destinations on the fjords.

Globally, the tourism industries experienced strong growth until the Covid-19 pandemic hit in 2020 (Jus & Misrahi, 2021). This was also the case in Vestland. The number employed in accommodations and restaurants, which are the tourism industries that are most classifiable as such and therefore providing the most reliable statistics – grew from 17 768 in 2010 to 20 330 (from 3% to 3.2% of the population) in 2019 (SSB, 2021b). As Covid-19 hit, this number fell in 2020 to 16 679. In rural Vestland communities that specialize in tourism, the sector is a key source of employment (Teigen, 2012). This shows that tourism development can indeed be real industry development, but the dramatic effects of the Covid-19 pandemic on these specialized locations also reveal the vulnerability from having a large portion of jobs in this industry.

### 4.3 Case locations

The empirical material was drawn from the villages of Flåm, Odda and Sogndal. As shown by Figure 5, each village is located at the end of a different fjord branch in Western Norway.

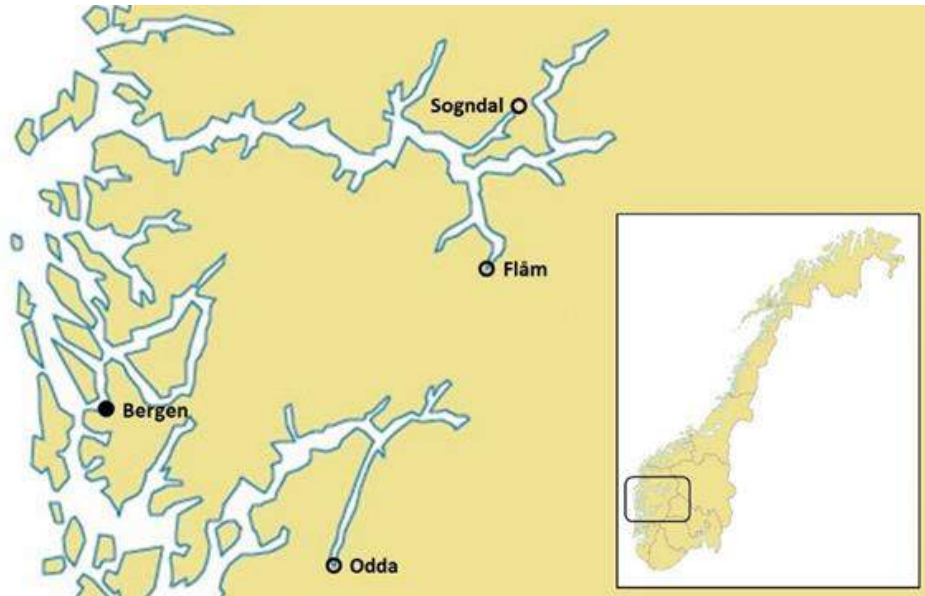


Figure 5: Cases located in Sognefjord and Hardangerfjord in Vestland.

#### 4.3.1 Flåm

Flåm is located at the end of the Aurlandsfjord, a branch of the Sognefjord. This village of approximately 360 inhabitants received about a million visitors annually prior to 2020. The travel distance from Flåm to Bergen, the city closest to all three case villages, is 168 kilometres. However, unlike the other two case locations, Flåm has a rail connection, which has been key to its tourism development. The sidetrack connecting Flåm to the Oslo-Bergen line was built for infrastructural purposes in 1941 and repurposed for tourism in the 1990s. Following this, a cruise terminal was constructed in Flåm (see Figure 6), allowing higher visitor volumes and more predictable ticket sales.





*Figure 6: Flåm village centre and cruise terminal. Photo: [www.norwaysbest.com](http://www.norwaysbest.com)*

The Nærøyfjord, to which Flåm is the closest cruise harbour and transportation hub, gained UNESCO world heritage status in 2005, and visitor numbers to Flåm have increased rapidly since 2011, reaching a million annual visitors by 2019. Contemporarily, Flåm AS, the publicly owned tourism company managing the Flåm railway, historic hotel and several public infrastructures in the village centre, reached a turnover of €21 700 000 in 2019. Figure 7 shows that Flåm's population also grew as tourism growth accelerated from 2011 onwards. By 2019, ca. 10% of Aurland municipality inhabitants worked in the tourism industries (SSB, 2020); this proportion can be expected to be higher in Flåm, where these tourism jobs are concentrated. Many such jobs were created by entrepreneurs who set up activities that were complimentary or alternative to the Flåm railway, and there has thus been a diversification to different tourism segments. However, in one form or another, Flåm is highly dependent on tourism.



Figure 7: Flåm population. Source: Statistisk sentralbyrå.

With this economic success, sustainability challenges related to the tourism path have also grown. Some Flåm residents were bothered by noise and smoke from the cruise ships, and both visitors and residents have found the village overcrowded on busy days (Nicolaisen, 2020). This led to protests by residents in 2014 and 2015. Subsequently, the Maritime Authorities measured high levels of NO<sub>x</sub>, SO<sub>x</sub> and greywater emissions in the Nærøyfjord (Sjøfartsdirektoratet, 2017). As a result, special regulations for the world heritage fjords, and thus for all ship traffic to Flåm, were developed. Flåm AS has also invested in hybrid and electric sightseeing boats, and the harbour authorities installed a new sewer treatment system for cruise ships, adjusted harbour fees to disincentivize docking by the most polluting ships, and obtained funds to install a shore power system for cruise ships. Thus, the Flåm tourism industry is demonstrating a certain adaptive capacity. Yet, the long-term sustainability of mass tourism in Flåm remains uncertain.

#### 4.3.2 Odda

Odda is the easternmost point of the Hardangerfjord, at a travel distance of 193 kilometres from Bergen. This post-industrial town is home to about 7000 inhabitants. In the late 1800s, it was Norway's most popular tourist destination (Markhus, 2020). Then, in 1906, the first smelting plant was built in Odda, and the picturesque village evolved into an industrial town specializing in metallurgic

industries. The transformation can be seen from the photos in Figure 8, showing Odda in the 1890s (left) and 1920s (right).



Figure 8: Odda in the 1890s vs. Odda in 1924. Photos: Snapshots of the past and Kraftmuseet.

Odda had 9000 inhabitants during its industrial heyday. However, its industrial decline in the 1990s led to a dramatic reduction in workplaces and inhabitants (Jakobsen, 2003), after which Odda came to be described as “the rotten apple in Hardanger”. In the attempts to cope with this industrial decline, tourism was again drawn forth as an opportunity. After the closure of the largest smelting plant (Figure 8, left), some wanted to apply for UNESCO world heritage status for Odda’s industrial heritage, as part of a strategy to promote industrial history tourism. This led to a divisive debate between those who wished to demolish versus those who wanted to protect the old industrial structures (Cruickshank et al., 2014). Eventually the UNESCO application was withdrawn, but most of the smelting structures remained.

Since 2013, Odda has undergone significant tourism development, increasing from approximately 20 000 visitors in 2013 to roughly 100 000 in 2019. This development has primarily been within the hiking tourism sector, with actors from the local tourism industry and the regional destination marketing organization (DMO) promoting the Trolltunga rock formation, in the mountains near Odda. Visitors sharing photos of themselves on Trolltunga created a positive feedback loop, and its popularity grew exponentially. The annual value creation from tourism in Odda has been estimated to have increased by €5.7 million from 2012 to 2017 (Wigestrang, 2018). However, this rapid growth in visitors has had a downside, with



crowding, litter, landscape wear and many rescue operations for hikers who got lost or surprised by bad weather in the mountains. Local actors have collaborated to both limit the negative side effects and create synergies from hiking tourism to other types of activities, such as the industrial heritage museum, a via ferrata and farm visits, and possibly a funicular in the near future.

### 4.3.3 Sogndal

Sogndal (shown in Figure 9) is located on a branch of the Sognefjord and has a travel distance of 220 kilometres to Bergen, including one fjord crossing via ferry. Sogndal has about 4000 inhabitants and is a centre for the surrounding areas, being a larger village with several public sector employers, public services and shops. Since the late 1800s Sogndal has been a regional education centre, with both upper secondary school and a folk high school (*Folkehøyskole*). In 1975, a rural university college was established in Sogndal, which has evolved to become a University of Applied Sciences campus (Yttri, 2008). The university is an important public employer, and attracts about 2300 students annually (HVL, 2021). This influx of young (students) and highly educated people (teaching and research staff) is a foundation for different synergies, which have been key to tourism-related development in Sogndal.



Figure 9: Sogndal, with the University of Applied Sciences campus and sports facilities in the foreground.

Sogndal's favourable location, in terms of road infrastructure, makes it an attractive stop-over, also for travellers coming to visit other locations in the area. Sogndal has three hotels, as well as other accommodation providers, which hosted about 80 000 foreign visitors annually prior to the Covid-19 pandemic (statistiknett.no, 2019). However, the tourism development assessed in the current study was small-scale, focusing on mountain sport niches. This development arose from the Mountain Sports Festival, which was first organized in 2008. This was followed by a television series on mountaineers, featuring several people from Sogndal. In the same years the ski lift in the Sogndal valley was expanded and upgraded, and new lodgings and mountain guide activities were established. On the one hand, Sogndal's new image favoured small-scale tourism businesses specializing in mountain sports tourism; on the other, and more importantly, it had a positive place branding effect, making Sogndal a more attractive place to live and study. This is reflected by the growth in numbers of both the student population (from 2245 in 2005 to 3022 in 2018), and regular residents (from 2974 to 3733 during the same years) (SSB, 2021a). By December 2019, in percentage Sogndal had one of the largest municipal population growth rates in Norway (Johnsen, 2019).

## 5. Contributions

This article-based dissertation contains three scientific papers that contribute in different ways to answering the dissertation's research questions. Papers #1 and #2 are single authored. For Paper #3, which is co-authored with Stig-Erik Jakobsen and Rune Njøs, I am the first author and contributed ca. 70% of the work, while the co-authors contributed ca. 15% each. I came up with the idea, designed the study, conducted data collection and did the major share of the analysis, while the manuscript was prepared together with Jakobsen and Njøs, who especially contributed to the literature review and theoretical framework, and to critically reviewing the intellectual content of the paper. The three papers' overall aims, findings and contributions to the literature, as well as to answering the dissertation's questions, are discussed in the following sections.

### 5.1 Paper #1: Change agency and reproductive agency in the course of industrial path evolution

Published in *Regional Studies* (2021), this paper investigates the variations in types and roles of agency throughout tourism industry path evolution in Sogndal, Odda and Flåm. From a theoretical perspective, the paper argues that agency work in EEG has been too change-oriented, using agency as a variable to explain new path creation and path change. In this way, agency has not been properly incorporated into the evolutionary perspective. Two steps are thus taken to nuance the perspective on agency and better integrate it into the evolutionary perspective. First, a distinction between change agency and reproductive agency is introduced. While reproductive agency has sometimes been presented as obstruction in the literature, in this paper it is also considered a positive force for the stabilization of recent paths. Further nuance is added by introducing specular categories of change agency and reproductive agency types, thus ending up with Schumpeterian entrepreneurship versus replicative entrepreneurship, institutional entrepreneurship versus institutional work and change leadership versus maintenance leadership. Second, variation in types of agency throughout industrial path evolution is conceptualized through Martin's (2010) path as process model. This is also helpful to elucidate the connection between agency at different points in time.

The evolution of the tourism industry paths in Sogndal, Odda and Flåm is presented chronologically, shedding light on the different roles of agency over time, and the connections between different types of agency and agency at different stages of path development. In particular, the cases show how agency in the path creation phase is connected to initiatives in the preformation phase, and how reproductive agency in the development phase builds on and stabilizes changes made in the path creation phase. It emerges that reproductive agency is also a productive force in building and stabilizing industry paths, but that some degree of change agency is often positive for retaining dynamism. It also emerges from case analysis that the passage from preformation to path creation, and thus towards the phase of most intensive change agency, is marked by a critical juncture, often entailing the combination of a problematic situation (necessitating change) and an opportunity space (making change possible). Furthermore, the empirics show that the same individual can enact multiple types of agency, both simultaneously and over time. Nor are the different agency types necessarily tied to certain formal positions. For instance, in Flåm, a public sector actor enacted Schumpeterian entrepreneurship, while a private person was key in institutional entrepreneurship in Sogndal.

Paper #1 contributes towards the understanding of agency in industry path development in three ways. First, it moves beyond the change-oriented understanding of agency that dominates in the existing literature, while showing that reproductive agency is also agency, and that it can be a positive force for industry development rather than just obstructing change. Second, it partially reconciles agency with an evolutionary perspective by showing how agency builds upon both the structures and the agency of the past. Conceptualizing the interactions between agency, problematic situations and opportunity space within the path as process model also contributes to uniting agency with the evolutionary perspective. Third, while emphasizing the temporal dimension, the paper highlights multidimensionality by drawing forth how aspects of industry, institutions, scale and human relations intertwine, and how agency works across elements of all dimensions. It uses the temporal dimension to approach these agency–context dynamics, elucidating the multiple and varying, yet interconnected, roles of agency in industrial path evolution.

## **5.2 Paper #2: Fields of change? Actors, institutions and social fields in the green restructuring of the Flåm tourism industry**

Paper #2 was accepted for publication in *Growth & Change* January 24<sup>th</sup>, 2021. It investigates the processes of institutional change that drive and shape the ongoing green restructuring of the Flåm tourism industry. The point of departure is that a scalar perspective helps us to better understand how institutional logics interact and how agents do institutional work. The paper adds to this by developing a framework sensitive to the actors, institutional logics and social fields in green restructuring of industries. This is done by drawing on Bourdieu's notion of social fields as areas of conflict over goals, meaning and acceptable practices, which is linked to institutional logics. This is then expanded with a geographical perspective on social fields, building on Fløysand and Jakobsen's (2011) work. By considering interactions both within and between fields, the implications of scale for institutional work and change are emphasized.

Flåm has advanced from a site of conflict over cruise ship pollution and noise, to being presented as a spearhead for the green restructuring of tourism in Norway. The multiscale social fields framework is applied to explain this change. Conflicting logics in the Flåm tourism industry field provoked institutional work that challenged the field's prevailing economic logic. Institutional work by protesters, and the reactions to it, created overlaps with other fields at different scales, particularly the maritime industry and national environmental policy fields. In turn, actors from the maritime industry field did institutional work promoting green technology logics both in the Flåm tourism industry and environmental policy fields. Through interactions with actors from the maritime industry and national environmental policy fields, Flåm actors have increasingly adopted the green technology logic. The spread of the cleantech logic has likely been eased by the logic's dual goal of continued economic growth and reduced environmental impact, making it compatible with multiple logics. However, it also emerges that the scale of different fields has implications for institutional change and that actors use scale strategically when creating overlaps with or referring to the logics of higher-scale fields.



Paper #2 contributes to the economic geography literatures on institutional change and green restructuring in several interconnected ways. It develops an approach to institutional change that takes into account institutional change across social fields at multiple geographical scales. Applying this approach to the green restructuring of the Flåm tourism industry, it emerges that some actors shape the priorities within a field more than do others. This is not just as a result of their different positioning within the field, as was often Bourdieu's focus, but because it also depends on the interplay between the logic they promote and the dominant logic within the field, and whether they are able to create fruitful overlaps with higher-scale fields. Thus, the paper offers an approach to understanding the implications of scale for agency and institutional change. Finally, by combining agency, social fields, scale and institutional logics, Paper #2 emphasizes the interconnections between the industrial, scalar and institutional dimensions.

### **5.3 Paper #3: The relatedness of knowledge combinations — a micro perspective**

Paper #3, co-authored with Rune Njøs and Stig-Erik Jakobsen, is currently under review in an international journal. It addresses what we perceive as a static and 'flat' perspective on knowledge combinations in the EEG literature, particularly in the related variety strand. The empirical observation of multiple, unrelated knowledge combinations by individuals in the tourism industries in Flåm, Odda and Sogndal prompted the question of how knowledge combinations take place, particularly across industries that are usually classified as unrelated. While sympathetic to the relatedness approach, we find that it blackboxes the processes through which such combinations take place. To better understand how knowledge combinations take place in innovation processes, the perspective is opened up to aspects of knowledge not usually considered in the relatedness approach. We do this by drawing on theoretical perspectives from the wider knowledge literatures within economic geography, and from cognitive theory, and by taking a practice-oriented micro-level approach. Part of the economic geography literature promotes a practice perspective on knowing. The notion of knowledge bases emerges from this perspective, as it, differently from the relatedness concept, builds on different knowledge development practices. Furthermore, this literature emphasizes the interactive nature of learning,

which we conceptualize using social fields in which interactive knowledge practices take place. As knowledge is both relational and individual, we tie these interactive processes to the individual level through two cognitive theory concepts, namely knowledge domain and cognitive frames. This distinction also shows that knowledge has multiple dimensions, so that it may be closer on one dimension and more distant on another.

Paper #3 came about deductively, starting with observations of unrelated knowledge combinations by individuals in all three cases investigated in this project, then proceeding to gather more data on these individuals' backgrounds and how they had used their experiences in the innovation projects. To allow sufficient detail within the space limits of a scientific paper, we use the four most interesting examples as illustrative cases. Thus, we present the backgrounds and ways of working of the two individuals at the centre of each of the Trolltunga and Flåm railway projects. Only one of these four individuals had past experience in the tourism sector; the others used and combined knowledge from different past experiences. The cases show two main modes of combining knowledge: first, translation of knowledge from one field to another, where it is then combined with knowledge concerning the new field; and second, by mixing knowledge from different past experiences. Furthermore, it emerges that both domain knowledge and cognitive frames shape these combinations. In one case, it may even be argued that it was primarily the cognitive frames that contributed novelty. The cases also indicate that both the opportunity for and value of a specific knowledge combination is context dependent.

This paper contributes to EEG's understanding of knowledge relatedness and knowledge combinations in several ways. First, by coupling the notion of relatedness, which is based on statistical approaches, with a micro perspective, it sheds light on the multiple ways that knowledge may be more or less related as individuals learn in different social fields, and thus know about the same or different things and approach problems in similar or different ways. Second, by emphasizing the social embeddedness of knowledge, it emerges that knowledge from other fields beyond education and work may be included in innovation processes – particularly from leisure activities and political and voluntary work. Third, the importance of

cognitive frames to the novelty of cross-field knowledge combinations points towards the usefulness of a practice perspective. It also indicates the multidimensionality of knowledge relatedness and knowledge combinations, which has not been granted much space in the relatedness literature. Finally, the paper shows that new ideas emerge from individuals' interactions with context, and that the usefulness of new combinations is also context dependent. In other words, there may be aspects other than regional industry composition and the presence of certain knowledge bases that influence which knowledge combinations are made and what impact they have. Thus, the paper highlights the relational dimension as it provides for in-depth explorations of how agency is developed through relations and in interaction with context.

## **5.4 Main findings**

The three papers in this dissertation each shed light on agency–context interaction in industry development from different angles, emphasizing and connecting different dimensions. Together, they provide five main findings that contribute towards the dissertation's objective of understanding how people contribute to new industry path development in rural places and thus give these places new dynamism.

A first central empirical finding, which confirms existing knowledge, is that *agency in industry path development is enacted by multiple actors*. As implied by Garud and Karnøe's (2003) notion of distributed agency and Grillitsch and Sotarauta's (2020) trinity of change agency, different actors do different things and contribute in different ways to path development. With their varying current positions and past experiences, actors have access to different resources. Thus, the contribution of different actors is key to mobilizing necessary resources. This emerges clearly in Paper #1, which shows how people involved in place-based leadership in Sogndal gather resources, ranging from public and private funds to voluntary work, useful information and access to the right channels to draw attention to the village and its mountain sport festival. Similarly, a few people in Flåm mobilized different types of resources from various sources, such as municipal council decisions, funding from the local bank and external business collaborators. This ties in with different actors having different knowledge (Paper #3) and spheres of influence (Paper #2) due to

their past experiences and current embeddedness in different social fields. Thus, path development requires contributions from multiple actors, who enact agency through relations. This links up to the second finding, which also draws on relational perspectives.

The second finding is that *actors' ability to act is shaped by the relations they have*. Relations influence actors' ability to act, not only because agency is enacted in relation to others, but also because their learning is shaped by relations. As different perspectives and institutional logics prevail in different social fields, actors gain familiarity with multiple perspectives and institutional logics by participating in multiple social fields. On the one hand, being familiar with multiple logics and perspectives enables the development of innovative ideas (Paper #3) and provides alternative logics when doing institutional work (Paper #2). On the other hand, knowing a field and its logic is necessary to operate within and contribute to shaping the field (Paper #2). Furthermore, learning is also an interactive process, and actors' knowledge is shaped by the various fields in which they have participated. An actor's knowledge, both in terms of domain knowledge and cognitive frames, increases their propensity and ability to act in certain ways rather than in others (paper #3). Thus, agency itself is shaped by actors' participation in different fields. Different people will have different experiences from education, work, leisure activities, voluntary and political work, etc. However, the presence of certain fields is also context-specific. Thus, through interactive learning, agency is shaped to some extent by context. While actors are mobile and can participate in social fields in various places throughout their lives, unique combinations of fields may be found in different places. Furthermore, knowledge and relations from past experiences will be combined with knowledge and relations in local social fields. The utility of, and novelty provided by, different knowledge and perspectives will depend on the context in which it is used. Accordingly, actors' knowledge practices and their contribution to industry path development are context-specific.

A third finding is that *industry path development is enabled by local and non-local connections*. All the necessary resources for industry path development are rarely available in one place, especially in rural settings. Therefore, the actors working for

industry development establish and use relations across scales. This can play out in many different ways. For instance, the mayor of Flåm reached out to the national railways and SIVA, both of which became important business partners providing necessary funds and resources (Paper #1). In Odda, collaboration with the national tourism marketing system was key to making Trolltunga famous (Paper #1); however, related to the second finding, using this system efficiently depended on prior familiarity with it (Paper #3). Similarly, in Sogndal, central actors' embeddedness in the Norwegian back-country skiing milieu enabled them to connect local resources with the growing back-country skiing trend (Paper #1). Furthermore, to tackle challenges that emerged as the path evolved, actors in Odda involved external expertise and funding, while actors in Flåm connected with actors in non-local fields as they worked to shape their institutional landscape (Paper #2). Thus, non-local connections provide access to both economic and knowledge resources, and allow actors to tap into positive trends and opportunities for influence beyond the local scale. From a temporal perspective, it emerges that although actors often use established non-local ties, it is not unusual for them to establish new relations when needed. However, prior relations are often advantageous, as actors will then be familiar with the field they wish to influence or draw resources from (Paper #2 and #3). Again, this shows how actors' ability to act is shaped, but not determined, by their relations.

The fourth finding also emerges from temporal and scalar perspectives. In line with other studies (e.g. Rossiter & Smith, 2021), it was discovered that *the space for agency varies over time with changing contextual conditions*. At times, developments at different scales align in ways that necessitate action or offer new opportunities. These moments become critical junctures. For instance, the opportunity to develop hiking tourism to Trolltunga was linked to several international economic and life-style trends, while work by different local actors, and those in the Norwegian tourism promotion system, used opportunities stemming from these wider trends and developments. From a relational perspective, these alignments may be considered as alignments between developments in different social fields at different scales. Actors working for industrial path development create new ties across scales and between fields that were not

connected before. The opportunities to do so are not equal at all times. Nor are the opportunities equally visible. Thus, while the opportunity space is decisive in allowing for new path development, critical junctures are often also marked by problematic situations. These push actors to search for opportunities and enact agency, as did the Flåm mayor after being informed of the likely closure of the Flåm railway.

The changing space for agency over time ties in with the fifth key finding, *that the characteristics of agency vary throughout industry path evolution, in terms of both type of action and how change-oriented it is*. Paper #1 shows how place-based leadership, which is strongly relational, may be important in the preformation and development phases, while Schumpeterian entrepreneurship and institutional entrepreneurship are likely to play central roles in the path creation and development phases. Yet different types of agency are interconnected across time, as agency in one moment may build on agency from the past or lay the foundations for future action, and may be enacted by the same agent or by agents that are relationally linked. There are also fluctuations between change agency and reproductive agency throughout industry path development, but both contribute positively towards industry development. While change agency is key to creating new industry paths, reproductive agency is necessary for the path to continue developing. Reproductive agency can also lay the foundation for new path development by maintaining positive momentum and predictable institutional conditions. Thus, change agency and reproductive agency are interconnected and build upon each other. Seen through the dissertation's multidimensional approach to agency–context interaction, the variation in types and direction of agency means that it may change some contextual elements while resting upon others. For instance, institutional entrepreneurship works through established networks, and new firm creation builds on existing institutions. From this perspective, both separation in time, as suggested by Archer (2010), and a multidimensional perspective that distinguishes between different actors and contextual elements contribute to our understanding of how structure shapes agency and agency shapes structures.

These findings bring me towards answering the dissertation's research questions, as they shed light on different angles of agency–context interaction in industry path development. The findings that agency in industry path development is enacted by multiple actors who contribute in different ways, and that agency is both shaped by, and enacted through, actors' relations, contributes to our understanding of people's ability to act. The findings on the importance of non-local linkages and convergence of local and external developments contribute to our understanding of how actions produce effects. It emerges that the effects of agency depend both on actors' ability to act and the situation in which agency is enacted. These findings particularly highlight the centrality of the relational dimension to understanding people's ability to act, and the temporal dimension to understanding the effects of people's actions. The relational and temporal dimensions allow for tying together other dimensions of agency–context interaction, contributing to a more nuanced understanding of how this interaction plays out in industry path development.

## **6. Conclusions**

The aim of this work was to enhance our understanding of how people create viable presents and futures in the places where they live. The dissertation shows that those who develop new industry paths do so together with others, working persistently over time. Creating new activities requires a mix of actions and efforts by multiple actors. Accordingly, actors must mobilize each other to gain and maintain the necessary momentum. In this process, finding goals towards which several actors can contribute is key. This often involves changing the ideas about what can and should be done, how it should be accomplished and who should be involved. It also involves expanding networks and establishing new collaborations. Furthermore, and critically, developing new paths involves establishing new firms or changing the direction of incumbent firms. While mobilization of local actors is key, new path development also requires connecting with actors, trends and resources beyond the place. This is tied to spotting risks and opportunities, which often stem from the alignments between local and wider developments at different times. Thus, when giving the places where they live new life, people work with multiple aspects, both locally and using external links, and the involved actors do different things. In other words, agency in path development processes interacts with multiple aspects of context in different ways. Different dimensions of this agency–context interaction have been captured through different perspectives. Therefore, agency–context interaction in industry path development can best be understood through a perspective that integrates multiple dimensions. Accordingly, this dissertation’s main research question asks how the multidimensionality of agency–context interaction can be approached analytically. The next section will elaborate on the conclusions to this main question, and to the two sub-questions regarding how we can understand people’s ability to act and the effects of their actions.

### **6.1 Answering the research questions**

Through the dissertation research, a framework for understanding agency–context interaction has been developed. This framework integrates five dimensions by embedding three dimensions highlighting agency’s interaction with different contextual elements into the relational and temporal dimensions. The industrial



dimension highlights agency's interaction with industry and industry structure, both of which are shaped and conditioned by these, but also shape their development. The scalar dimension places focus on how agency works across scales, while the institutional dimension allows investigation of how agency is shaped by formal and informal guidelines for appropriate behaviour, while also shaping these. These three dimensions are interconnected. This interconnectedness is understood through the relational and temporal dimensions. The relational dimension enables analysis of how agency is both shaped and enacted through interconnections between actors and different contextual elements. The temporal dimension allows events and agency to be connected across time, thereby gaining an understanding of how the opportunities for agency vary over time. Thus, integrating multiple dimensions allows us to approach both the process and outcomes of agency–context interaction.

The first sub-question (Sub RQ1) asks how people's ability to act can be understood through a multidimensional approach. When enacting agency for industry path development, actors use networks and knowledge from various past and current experiences. People participate in multiple social fields, and by linking different fields, agents may mobilize new actor constellations and combine the necessary knowledge and resources for industrial path development (Paper #3). Thus, the relational perspective sheds light on both how agency is enacted and how the ability to act is developed in interaction with context. It shows that one or a few actors may link an industrial field with other fields, both in the local community and at other scales. Using these linkages, agency can be enacted towards different aspects of context, such as by changing institutions while simultaneously setting up a new business and attracting non-local resources (Paper #1). Thus, relations crossing multiple social fields enable a mix of actions that together make for industrial path creation and development.

The temporal perspective on agency further strengthens our understanding of how different past and current experiences shape agents' ability to act. Participation in different social fields entails interactive learning. Accordingly, actors' knowledge is shaped by the fields in which they participate and have participated in the past (Paper #3). This is a matter of domain knowledge, cognitive frames and familiarity

with the fields' institutional logics. What actors know, that is, their domain knowledge, shapes their ability to act, while their cognitive frames influence how they approach problems and opportunities. Furthermore, familiarity with a field's logic eases action within a field, while familiarity with multiple logics enables an actor to break with or challenge a field's logic (Paper #2; Battilana, 2006). Thus, approaching people's ability to act by embedding the industrial, institutional and scalar dimensions in the relational and temporal dimensions makes for an understanding of how agency is developed through interactive learning, and is enacted through relations.

The second sub-question (Sub-RQ 2) asks how the effects of people's actions can be understood through a multidimensional approach. From the cases, it emerges that central actors in industry path development mobilize others and together carry out a mix of actions that give the new path momentum. Such distributed agency is enabled by relations between actors. In this mix of agency, starting economic activities and creating traction and favourable institutional conditions for the new path are key, as seen also from research done by others (e.g. Grillitsch & Sotarauta, 2020; Isaksen & Jakobsen, 2017; Jolly et al., 2020). This entails gathering both local and external resources, which in turn often implies involving non-local actors. Whether starting a new business, mobilizing local actors for a common goal, gaining access to new resources or producing institutional change is possible, and whether these steps will lead to industry path development depends on alignment between local resources and developments and wider developments (Paper #1; Rossiter & Smith, 2021). Local industry paths need to tap into wider markets. In consumer-oriented industries such as tourism, this is often a matter of tapping into emerging trends to benefit from their growth. Therefore, temporally contingent opportunity spaces stemming from alignments between local situations and wider developments are key for new industry path development. The effects of actions vary both with the actions themselves and with the conditions under which they are enacted, and are thus truly a matter of agency – context interaction.

## 6.2 Limitations

While providing an understanding of how tourism industry development takes place in rural places, and of the roles of actors in this development, the specific contents of the developments, the resources used and actions taken remain dependent on context. For instance, which connections can be made with which external developments depends on time, place and actors. Related to this context specificity of development processes, rural regions in Norway may have a relative advantage compared to those in many other countries, as decentralisation policies have channelled resources to rural areas (Teigen, 2019). Thus, the resources available to actors in Flåm, Odda and Sogndal may not be available in other rural contexts. This could reduce the relevance of these findings to development efforts in other rural places. Although such variations in contingent conditions do not limit the validity of mechanism and necessary relationships identified, qualitative case studies are most suited for theory development. The theoretical insights developed need to be integrated with empirical information to be applicable in other contexts. It may for instance be helpful to systematically consider variations in regional development policy and regional actors' access to public resources, and their implications for industry path development in rural places.

Furthermore, the focus on rural contexts may have implications for the contributions to EEG. The dissertation informs our understanding of agency in industry path development by investigating agency in rural tourism industry development. It can be argued that rural contexts lend themselves to the study of agency, due to their smaller number of actors and activities making it easier to identify actions and observe both their backgrounds and effects. However, for the same reasons, we cannot fully exclude the possibility that industry development plays out in different ways, or that there are different roles of agency in this, between rural places and other contexts. Some characteristics of the tourism industries may also have implications for extending insights gained by studying tourism development to understand the role of agency in industry path development in general. As tourism industries have a significant business-to-customer component, and often require smaller start-up investments and less technical specialization among staff relative to other industries, the barrier to entry is lower. Therefore,

tourism may be a more accessible development strategy for many rural areas, and it is in fact often promoted as such (Calero & Turner, 2019; Garrod et al., 2006). However, long-term success is not guaranteed. This distinguishes tourism industries from others for which the entry barriers are higher, but that provide more stability once established. Thus, agency–context interaction may play out differently in the development of other industry paths, and different insights could therefore be gained by comparing path development across industries.

These limitations, which are linked to contextual specificities, stem from a methodological limitation. As agency in path development was, until recently, under theorized, there has been a need for theory development (Hassink et al., 2018). However, significant progress has now been made towards developing theory about agency in path development (e.g. Benner, 2021; Grillitsch et al., 2021; Grillitsch & Sotarauta, 2020; Isaksen & Jakobsen, 2017; Jolly et al., 2020; Rekers & Stihl, 2021; Rypestøl et al., 2021; paper #1). This has been accomplished through qualitative case studies. Nonetheless, as argued also by Grillitsch et al. (2021), the time may have come for more extensive cross-case comparisons to advance our understanding of agency in industrial path development. Cross-case comparison would both provide a more thorough empirical understanding of agency in path development, and contribute to strengthening and further developing our theoretical perspective.

### **6.3 Avenues for further research**

Following up on some of the dissertation's limits and contributions, several avenues for further research emerge. A central contribution of this dissertation is incorporation of the relational dimension, which provides a better understanding of embedded agency and *how* it plays out in industry development. Relational perspectives tie together different elements involved in industry development, also across geographical scales. Accordingly, combining theoretical perspectives from relational economic geography with EEG perspectives is an avenue for future research with high potentials for strengthening the understanding of how industry development takes place.

By focusing on the interaction between agency and context, it becomes clear that not all actions produce the intended outcomes. It also emerges from the empirical

material that some actions may turn out to have a much larger impact than that intended by actors. In some cases, this was clearly linked to convergence between developments, in which certain actions link different developments and thus have a larger impact. However, serendipitous events in which actions unintentionally set in motion wider positive developments may be explored further in future research, as this issue raises important questions about both what agency is and its role in industrial path development.

Empirically, the dissertation focuses on tourism development prior to the Covid-19 pandemic. However, the tourism industries were strongly affected by Covid-19. In evolutionary thinking, external shocks are often thought to set in motion radical change (Njøs, 2017; Simmie & Martin, 2010). Considering the pandemic's impact on the tourism industries, investigating how they have reacted may shed new light on the external shock hypothesis. Many commentators have hoped that abrupt changes from the pandemic might lead to more sustainable practices. Thus, research on how the tourism industries have reacted to the crisis should also investigate whether they have used it to pivot towards greater sustainability. In this respect, it would be particularly interesting to follow up on the case of Flåm, where tourism development has been based on large volumes of travellers, often coming from afar.

The negative side effects of tourism industry development also point towards another avenue for further research. Attention to the 'dark side' of innovation has recently increased (Coad et al., 2021). Perhaps we also need to investigate the dark side of regional development? While there is a growing literature on the greening of industries and green path creation (Jakobsen et al., 2021; Trippel et al., 2020), the perspective needs to be expanded to better understand what can be done to avoid, limit or respond to negative consequences of regional industry development. In practice, the need for development can often be so strong that certain opportunities are pursued despite their risks, while in other cases the negative side effects only emerge later. Therefore, strengthening our understanding of how to avoid or tackle negative side effects of regional development is of high practical relevance. This may be achieved by drawing on insights from the responsible research and innovation (RRI) literature (Jakobsen et al., 2019; Stilgoe et al., 2013), and also other

perspectives (e.g. policy literatures). In any case, we need a stronger understanding of the dark side of regional industry development and how to cope with it.

By combining multiple dimensions of agency–context interaction, this dissertation has indirectly situated agency in place. Although geographical context is core to EEG perspectives, the notion of place has been incorporated to a lesser extent. Insights regarding people’s connection to place, in particular to where they live, may contribute to our understanding of agency in industry development. For instance, agents’ motivations may be tied to their geographical embeddedness as emotional attachment to place, and social ties within a local community can motivate and foster action (Borch, 2010; Cresswell, 2004). In particular, the understanding of place-based leadership may be deepened by connecting it to the place literature in human geography. Not least because the contrast between territorially embedded versus “placeless” actors (Hambleton, 2019) indicates that actors’ sense of responsibility are shaped by their connection to place. Thus, exploring the place-agency nexus holds promise as a fruitful future research endeavour.

#### **6.4 Policy and practitioner implications**

By taking a multidimensional approach to agency–context interaction in industry path development, the dissertation shows that agency that entails a combination of actions by multiple actors contributes to industry path development. It also shows that the space for agency having certain impacts varies over time, with changing local situations and wider developments. Furthermore, the dissertation highlights how agency is enacted through relations which allow for the mobilization of multiple actors and resources. It develops an understanding that industry development requires long-term efforts by locally embedded actors, but that their success is contingent on the availability of resources, the actors’ ability to identify and attract these resources and to connect with the right trends at the right time. These conclusions carry some implications for policy makers as well as practitioners.

One policy implication regards tourism as a development strategy. While tourism has been promoted as an opportunity for rural areas, the economic impact of tourism development has also been debated (Teigen, 2012). The case of Flåm shows that tourism can be a source of economic development and new jobs in rural areas,

but that achieving this economic impact is likely to come at a cost. However, from the other two cases, we learn that tourism may be an important component in mixed development strategies. In addition to jobs in tourism and increased turnover for various local service providers, tourism can create a foundation for maintaining or starting services that would otherwise not have been possible in many rural places. This ranges from taxi services to grocery stores to restaurants, bars, cafes, and sometimes also cultural activities, all of which contribute to the attractiveness of a place. Furthermore, as illustrated by the role of mountain sports tourism in Sogndal, certain types of tourism development may have an important branding effect on which other activities can capitalize. Thus, although tourism development on its own may be a last resort, tourism can be part of a mixed development strategy; the potential for synergies is particularly great if the tourism activity attracts attention and spurs curiosity beyond the typical round-trip tourist.

The insights regarding what agency is and how it plays out in industry path development have important implications for both policymakers and practitioners. As agency is built through past experiences and relations, individuals with varied personal and professional networks have a stronger ability to act towards path development. Therefore, it seems that the involvement of the right people is key. In addition to varied past experiences and networks, central individuals have a strong motivation for the new development path. Thus, in many cases, ‘the right people’ will initiate path development work without public involvement. However, as industrial path development depends on efforts from multiple individuals and groups of people, policymakers and innovation facilitators may foster path development by looking out for ‘the right people’, connecting them and facilitating coordination.

The findings herein show that practitioners need to gather collaborators to gain momentum for a new path. This is often a matter of identifying some common goals that benefit all participants (Sotarauta, 2016). However, it is also necessary to convince the right people about their idea, especially those with access to resources needed to carry out the idea. Related to this, practitioners need both local embedding and to be outward-looking to connect local developments to wider

trends. This is both linked to attracting customers, external resources and collaborators. As local resources, competences and spheres of influence are often limited in rural places, reaching outwards is often key to establishing new paths, and even more so when scaling up and continuing path development. However, for the same reasons, external collaborators must be chosen with caution, and local actors should ensure they set clear conditions that allow them to maintain influence over the development.

Finally, the findings regarding agency–context interaction in industry path development also have implications for national regional development policies. In the three cases, the projects that led to path development have used resources made available by the state. How they did so and the amount of financial resources involved varied. However, the heavier investments made use of nationally available, sector-specific resources, while regional resources were used for smaller investments. The more significant funding was used in ways that diverged somewhat from the primary scopes of the policy instruments. Considering that these investments also had the strongest positive impact, this makes the case for rather generic national support schemes to which local actors can apply.



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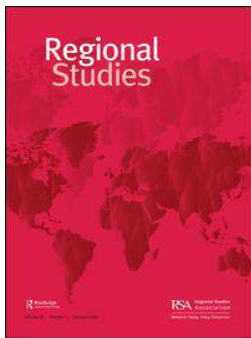
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## Change agency and reproductive agency in the course of industrial path evolution

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# Change agency and reproductive agency in the course of industrial path evolution

Nora G. Bækkelund 

## ABSTRACT

The literature integrating an agency perspective with evolutionary economic geography (EEG) has tended to focus on change agency. This paper introduces a distinction between change agency and reproductive agency. The variegated agency understanding is integrated within a path-as-process perspective. By investigating three cases of rural tourism development, changes in types of agency in the course of path evolution are elucidated. It emerges that both change and reproductive agency are important for industry path development. Thus, the article contributes to a more dynamic and nuanced understanding of the role of agency in path evolution, expanding the hitherto change-oriented agency literature in EEG.

## KEYWORDS

evolutionary economic geography; change agency; reproductive agency; path evolution; tourism

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## INTRODUCTION

In recent years the evolutionary economic geography (EEG) field has started to address its structure centrism by granting increased attention to agency (Grillitsch & Sotarauta, 2020; Isaksen et al., 2019; Kyllingstad & Rypestøl, 2019; Steen, 2016). In this endeavour the focus has been on agency in path creation and diversification (Grillitsch & Sotarauta, 2020; Isaksen et al., 2019; MacKinnon et al., 2019b; Sotarauta et al., 2020). Accordingly, radical change agency has moved centre stage. However, Jolly et al. (2020) highlight the strong presence of reproductive agency in some phases of path evolution. Yet, reproductive agency remains under-conceptualized relative to change agency. It is often understood as a source of lock-in or obstruction of innovation, while other roles it might play in industry development have scarcely been investigated. This paper introduces a more nuanced understanding of reproductive agency, thus proposing a framework for investigating the variations in agency across path evolution.

To examine the different combinations of agency throughout industry path evolution, tourism development in the villages Flåm, Odda and Sogndal in Western Norway has been investigated. The villages are by the Sognefjord and the Hardangerfjord, areas with a long history of

tourism. The three villages are receiving a disproportionately large share of the visitors in the region and have developed industry paths in distinct types of tourism. As a consequence of its networked nature, as well as the indirect impact of visitors on everyone living in a tourism destination (Milano et al., 2019), the tourism sector tends to involve a large number of variegated actors. Therefore, the sector lends itself to a qualitative examination of the varying types of agency in industry development. The following research question is addressed: How do change and reproductive agency vary in the course of path evolution? By addressing this question, the article contributes to nuancing the change-oriented understanding of agency in EEG.

As the tourism geography literature engages both with evolutionary theory and cases of strong agency (e.g., Randedli et al., 2014), it would appear as a fruitful strand of literature to draw upon in order to advance the agency perspective in EEG – especially so when using tourism development cases. However, evolutionary perspectives on tourism have mostly brought insights from EEG to tourism geography, rather than being framed as contributions to EEG or economic geography as a whole (Brouder, 2017; Dieter, 2019, p. 67). To my knowledge, there is no work within the field conceptualizing agency in relation to evolutionary theory. This might reflect a certain

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tendency towards descriptivism in tourism geographies (de Cássia Ariza da Cruz, 2019). Therefore, the understanding of agency in this paper builds upon empirics and existing conceptualizations from EEG and related literatures.

## EVOLUTIONARY ECONOMIC GEOGRAPHY AND AGENCY

In spite of path dependence theory in its original form first and foremost explaining why it is sometimes difficult for businesses or industries to break out of certain tracks (David, 1988), discussions on the role of agency within EEG also spring out of the path dependency literature. The path dependence perspective's structure centrism was first challenged by Garud and Karnøe's (2003) concept of path creation. In their notion of path creation, a new industry path is created through a multi-agentic process. Another question introducing change agency to path-dependent processes was that of breaking out of lock-in (Sydow et al., 2009). Both new path creation and breaking out of lock-in have become central topics in EEG (Grillitsch & Sotarauta, 2020; Hassink, 2010).

Martin (2010) reformulated the path dependence model as processual, to a larger extent allowing for change as well as continuity, and thus for a more significant role for agency in the course of path evolution. While increasing returns, network externalities and positive feedback cycles are key to the development of a distinct path, they do not necessarily lead to suboptimal lock-in (Martin, 2010). Also in established paths, agency may produce dynamism, making path extension, upgrading, diversification or creation possible (Grillitsch et al., 2018).

This study joins the economic geography tradition, defining an industry path as a distinct type of activity of economic relevance to the territory, which gathers sufficient critical mass to produce self-reinforcing effects (Freidin et al., 2019, p. 797). Although new industry paths are distinct from other activities in the region, they are often created from latent potential in pre-existing activities (MacKinnon et al., 2019b; Martin & Sunley, 2006; Njøs et al., 2020). Thus, new industry creation implies both continuity and change. The latter is often attributed to agency, which in EEG is commonly understood as 'action or intervention by an actor to produce a particular effect' (Sotarauta & Suvinen, 2018, p. 90).

While the common definition of agency in EEG focuses on the single actor, it is also argued that change is usually not made by single heroic actors, but rather emerges from the actions of multiple actors with different visions and interests (Sotarauta et al., 2017). Even in the case of one or a few agents working for a specific change, these depend on others for changing practices (Weik, 2011, p. 473) and getting access to resources. Thus, an actor's social network is an integral part of the actor's agency (Battilana, 2006).

Change is not only made by multiple actors, but through a combination of different forms of agency. Isaksson et al. (2019) suggest that more radical change requires both system- and firm-level agency, while Grillitsch and

Sotarauta (2020) distinguish between Schumpeterian entrepreneurship, institutional entrepreneurship and place-based leadership, arguing that these three types of change agency are essential for regional path development.

In line with Schumpeter's (1934) notions of entrepreneurship and creative destruction, Grillitsch and Sotarauta (2020, p. 7) define Schumpeterian entrepreneurship as entrepreneurs 'breaking with existing paths and working towards the establishment of new ones'. They emphasize that although innovative entrepreneurship is central, new path development requires wider changes in institutions. Institutional entrepreneurship is key in making such changes. Following Battilana et al. (2009, p. 68), institutional entrepreneurship is understood as actions leveraging resources to create new or transform existing institutions. As path development requires a mix of actions from several actors, mobilization and cooperation between different actors and interests is also central. Place-based leadership plays this mobilizing role (Sotarauta, 2016). In the trinity of change agency, place-based leadership is defined as conscious efforts to mobilize actors and coordinate their actions 'to stimulate the emergence of a regional growth path ...' (Grillitsch & Sotarauta, 2020, p. 9). While for example a mayor might be a place-based leader, place-based leadership is independent of formal position, and is often relatively hidden. It works through networks and can be distributed among several people (Sotarauta, 2016). As the three categories refer to agency, rather than actors, it is also useful to keep in mind that the one and same actor might enact different forms of agency simultaneously or across time, and that the type of agency enacted does not necessarily coincide with the formal role of an actor.

### Reproductive agency

While attention towards change agency ameliorates the structure centrism of EEG, this perspective has to a lesser extent been able to take agency's contribution to path dependence into account (Sunley, 2008; Sydow et al., 2009). People's actions can also *not* produce change, or produce less radical change. Accordingly, it is useful to distinguish between change agency and reproductive agency (Coe & Jordhus-Lier, 2011). Reproductive agency can be resistance to novel activities (Jolly et al., 2020), but it also involves actions existing in their own right (rather than in opposition to something) and which imply some degree of change, but still hold a small change potential relative to change agency (Kurikka & Grillitsch, 2020). Agency as a stabilizing factor is as many-faceted as change agency and should not be reduced to pure obstruction or equated with non-agency. The literature has not yet developed a conceptual apparatus that captures the nuances in reproductive agency. The aim of this paper is to address this issue, building a novel framework by giving Grillitsch and Sotarauta's (2020) three change-agency types counter categories. The change agency and reproductive agency categories represent two ends of a range, thus giving a more nuanced agency understanding.

While Schumpeterian entrepreneurship refers to the creation of activities that are at least new to the place, the many cases where new firms are created, but where these are similar to existing businesses, will be referred to as replicative entrepreneurship (Baumol, 2010, p. 18). Most entrepreneurship is closer to replicative than to Schumpeterian entrepreneurship. Replicative entrepreneurship is also agency, and it involves change for the individual or the firm. Yet, seen in a wider perspective, replicative entrepreneurship is characterized by gradual improvement rather than radical innovation and change. Thus, it is here considered a type of reproductive agency.

Institutional work will be used as a counter category to institutional entrepreneurship. While institutional entrepreneurship is change oriented (Battilana et al., 2009), the notion of institutional work has a broader range. It includes efforts that contribute to maintaining existing institutions and institutional practices that are often taken for granted (Lawrence et al., 2011). In this paper, institutional work will be used when referring to institutional practices that, unlike institutional entrepreneurship, are not intended to produce radical change.

Place-based leadership is most often associated with change (Benneworth et al., 2017; Coenen et al., 2020; Jolly et al., 2020; Sotarauta et al., 2017). However, one may ask whether 'shared leadership where many different independent actors exercise mutual influence to agree and deliver collective goals' (Benneworth et al., 2017, p. 236) will always be change oriented. Similar networks and collaboration practices may also contribute to strengthening existing activities. Aiming to account for mobilization and collaboration both for change and for maintaining established paths, the contrasting categories change leadership and maintenance leadership are derived from the notion of place-based leadership. Thus, we have a continuum with Schumpeterian entrepreneurship, institutional entrepreneurship and change leadership on the change agency side, and replicative entrepreneurship, institutional work and maintenance leadership on the replicative agency side.

In order to avoid implicit local bias in the theorizing on agency, a distinction between local and non-local actors is added to the perspective. While networks for place development tend to have a strong territorial dimension (Martin & Sunley, 2006), extra-regional linkages, giving access to non-local assets, are also key for path creation and development (Binz et al., 2016; MacKinnon et al., 2019a). Extra-regional linkages are made by relations between local and non-local actors, where the latter have agency too (Binz et al., 2016). Non-local actors may enact the same types of agency as local actors. However, they might steer the path in directions not wished for by local actors because they are often characterized by 'placeless power', meaning they exercise cumulated power without caring about 'the consequences of their decisions for particular places and communities' (Hambleton, 2019, p. 3). Yet, non-local actors may also act for the good of particular places, either as a result of coinciding interests or of their mandate and responsibilities (Fløysand et al., 2017).

## Change agency and reproductive agency in the course of path evolution

In the following section expectations for different dynamics between the various types of change and reproductive agency and the passages between them in the course of industry path evolution are discussed. The discussion is structured according to Martin's (2010) path-as-process model, with an emphasis on preformation, path creation and path development. Thus, the section presents an analytical framework (summarized in Figure 1) which combines the evolutionary dimension with a variegated agency understanding, treating agency as a factor contributing both to continuity and change.

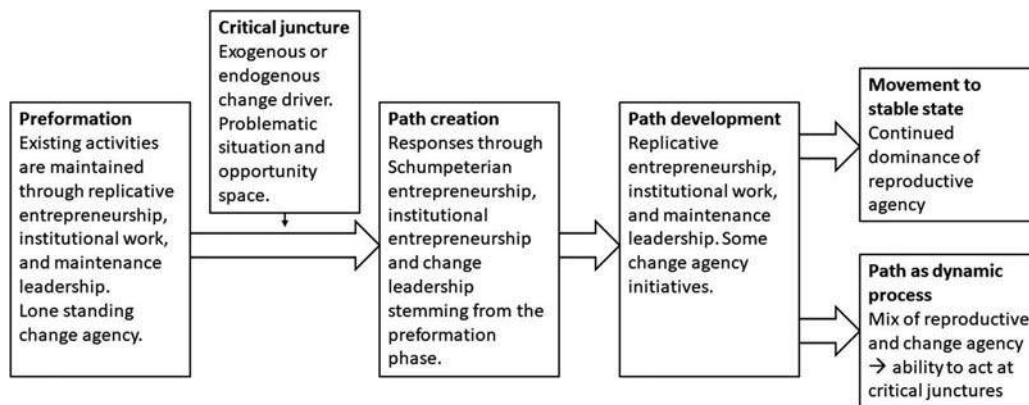
### The preformation phase

By studying the preformation phase, we may understand the conditions from which a path starts (Martin, 2010). In this phase reproductive agency prevails. Habits are slowly evolving as agents reflexively adapt existing patterns to constantly changing situations (Emirbayer & Mische, 1998, p. 968). Through their daily activities, actors are embedded in social networks. While the institutional work enacted in these networks might constrain actors from working for change, such network embedding may also constitute a large part of actors' agency and give leverage in effecting change. Thus, not only constraints but also capabilities and space for action is built up before the events of immediate relevance to path creation (Grillitsch & Sotarauta, 2020, p. 11).

Although reproductive agency prevails, agentic behaviour in the preformation phase can open new opportunities (Smith et al., 2017). Reproductive agency might contribute to maintaining an already favourable environment for industry development, or Schumpeterian entrepreneurship in an otherwise stagnant environment might be the first step towards a new path, inspiring further change agency. For example, the demonstration effect from pioneers of offshore wind made it a focus for the industry development programme in North East England (Dawley et al., 2015). New ideas, or emerging challenges to old paths, may first be discussed in pre-existing networks of place-based leadership. Further, the experience of one's effort making a difference can encourage actors to get involved with or lead change processes in the future, as well as provide knowledge of how to do so (Steen, 2016). Thus, different actions and processes in the preformation phase may gather momentum for a subsequent period characterized by change agency and path change.

### From preformation to path creation

The shift from the reproductive agency patterns of the preformation phase to a change agency pattern in the path creation phase may be explained both by the agency itself (Sydow et al., 2009, p. 5) and by the influence of events and conditions beyond the control of agents (David, 1988). Changes in the context may create new opportunities or problems to which actors respond (Araujo & Harrison, 2002). These produce critical junctures – 'relatively short



**Figure 1.** Types of agency in the course of the path process. Source: Adapted from Martin (2010, p. 21).

periods of time during which there is a *substantially* heightened probability that agents' choices will affect the outcome of interest' (Capocchia & Kelemen, 2007, p. 348). Critical junctures imply the presence of an opportunity space, but also of events that necessitate agency. The notion of 'problematic situation' (Emirbayer & Mische, 1998), inspired by Mead's (1932) theorization of temporality, gives a perspective on the relationship between such contextual events and agency. A problematic situation makes it hard to reproduce existing patterns, thus pushing agents out of routine and allowing for 'reflective distance to received patterns' (Emirbayer & Mische, 1998, p. 972). The pressure experienced by actors in the problematic situation makes their actions more conscious or intentional than what is the case in the daily course of things.

Agency in the face of problematic situations means reading the situation not only in terms of interpreting the problem, but also seeing opportunities (Smith et al., 2017), drawing on network connections that 'were there all along' or creating new ones (Garud et al., 2010). This is possible also in the absence of a problematic situation. An agent that spots and starts working towards a new opportunity may induce a critical juncture on the context as their actions open a window of opportunity that others may or may not utilize (Kurikka & Grillitsch, 2020). Such agency can be conducted by both firm- and non-firm actors (Binz et al., 2016; Isaksen et al., 2019).

In particular, the development of a new path requires Schumpeterian entrepreneurship. Yet, the actions that lead to industry development tend to involve changes beyond the single firm (Grillitsch & Sotarauta, 2020; Isaksen et al., 2019). There is a dynamic between different types of change agency. For instance, the initiating Schumpeterian entrepreneurship might build on institutional changes or initiatives launched through place-based leadership in the preformation phase, materializing an imagined future shared by several actors. Furthermore, theory indicates that institutional entrepreneurship makes divergent change possible by removing crippling limitations or making necessary resources available (Boschma et al., 2017). Thus, a combination of different change-oriented actions affecting different areas are necessary for path creation (Grillitsch & Sotarauta, 2020, p. 11). New

non-local actors are also likely to get involved in this phase, for example through Schumpeterian entrepreneurship, or by doing institutional work beyond the local level.

### From path creation to path development

While the shift of prevailing types of agency between the preformation and path creation phase is marked by a critical juncture, the transition from the change agency dynamics of the path creation phase to the reproductive agency pattern of the development phase is typically gradual. As the path emerges, those that enacted change agency in the creation phase will have vested interests and might not want to drastically change the emerging path (Musiolik et al., 2012). Rather, they might cultivate self-reinforcing dynamics (Fredin et al., 2019; Sydow et al., 2010). Institutional changes introduced during path creation will also shape and constrain the space for agency (Hassink, 2010). For instance, the support structure that might have been developed along with the path also tends to foster path reproduction (Isaksen et al., 2019). Simultaneously, new opportunities emerge as the new path develops. Consequently, more actors are likely to further strengthen the self-reinforcing dynamics of the path through replicative entrepreneurship (Elert et al., 2019).

Although path development is marked by reproductive agency dynamics, this does not imply a total absence of change agency. As an industry path moves from burgeoning industry to growing industry, initial problems and tensions from conflicts of interest are likely to emerge (Mjörner & Trippel, 2019). This is further complicated in the case of unequal power relations, especially between local and non-local actors (Hambleton, 2019). Institutional entrepreneurship might reduce conflicts, curb development-related problems and give direction, thus contributing to the self-reinforcing dynamics and further development of the path. Place-based leadership, both for change or maintenance, may also play an important role in fostering collaboration and common direction, and entrepreneurs might find solutions to new problems or opportunities stemming from the ongoing development. On the one hand, then, reproductive agency plays the major part in path development and can for instance contribute to diversification of established paths, but on



the other hand, some change agency is necessary for the path to continue developing. A situation with too much reproductive agency will likely lead to lock-in and eventually stasis (Martin, 2010), with a high risk of the path disappearing in the face of changing conditions (Isaksen, 2018). A path with a better mix of reproductive and change agency may remain dynamic, with a higher ability to respond to problematic situations and use critical junctures to renew the path.

## METHODS

In this investigation, three cases are examined. Consistent with the evolutionary framework that the study aims to inform, the cases are approached through process tracing (George & Bennett, 2005) or, in the language of EEG, tracing the path (Pike et al., 2016, p. 131). Locality is the point of departure for tracing the tourism development paths backwards from the current situation to their initial events and conditions. In order to understand the role of different events, conditions and actions in the path evolution process, two types of data have been analysed: interviews and secondary sources. Both types of sources have been consulted in two rounds, first for background information and later for reconstructing the course of events in each of the case locations.

Observation at industry meeting points, analysis of secondary sources such as newspaper articles, policy documents and reports, as well as eight interviews with background informants, comprise the background materials. National and regional tourism strategy documents (e.g., Hordaland Fylkeskommune, 2009; Johnsen et al., 2009; Vestlandsrådet, 2014) and reports on the economics of the sector (e.g., Iversen et al., 2014) made up the major share of secondary sources as background material. The background informants, who work in the public support structure or sector organizations for the wider region, were interviewed between November 2018 and January 2019, giving a general overview of the development in different locations.

In order to trace the evolutionary processes in each of the case locations, in the course of 2019 semi-structured interviews were conducted with six actors in Flåm, six in Sogndal and five in Odda. Three follow-up interviews were conducted in August 2020. Including nine background interviews, the interview material consists of 29 interviews. The actors either have long-standing experience from the local tourism sector or from local economic and social life more broadly. Some of them were referred to as key agents by several others. The interview guides were informed by the theoretical framework and by prior analysis of the background materials. Possible biases, as well as hindsight rationalization and the weaknesses of human memory, are important disadvantages of using interviews when studying past events. However, comparing information from different interviews as well as from newspaper articles, and in the case of Odda, archive materials, partly ameliorates these weaknesses. Reconstructing the paths from the increasing amounts of data,

questions were adapted and the search for secondary data directed towards blank spaces and points of contradiction in the collected material. For instance, archive material relating to past tourism and restructuring strategies both filled in gaps and (dis)confirmed claims from interviewees in Odda, while statistics on the number of applicants to the university college confirmed claims from interviewees in Sogndal. Thus, the combination of different sources, and the particular attention towards contradictions in the material, contribute to the validity of the study.

## CASES

The three cases are all located in Western Norway, two of them by the Sognefjord and one by the Hardangerfjord (Figure 2). Being in the same region, the cases have similar formal institutions and political and economic conditions. They also share landscape characteristics, as the villages are all located at the end of a fjord branch. Although they have several commonalities, the three cases have seen the evolution of very different tourism sectors. Thus, the design follows the logic of 'most similar cases, different outcome' (George & Bennett, 2005).

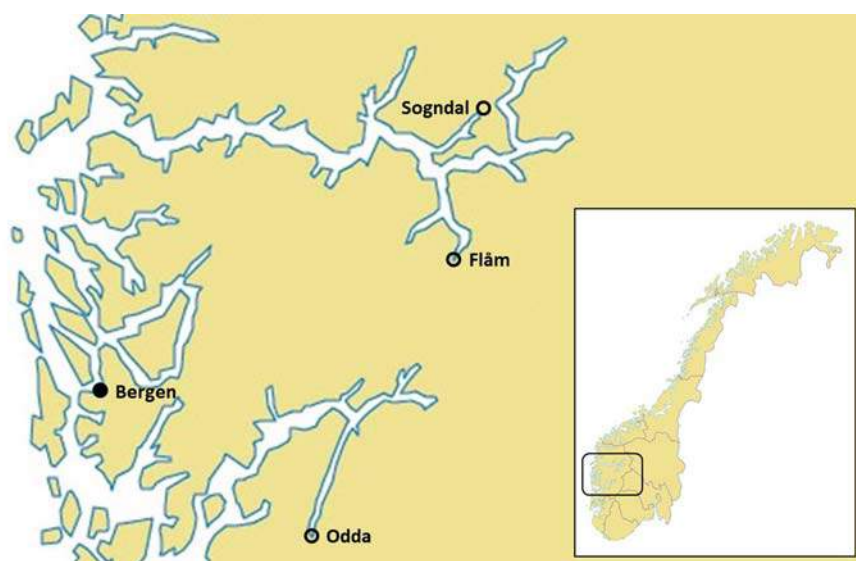
Sogndal village has about 4000 inhabitants and is the centre of a rural region with an even larger population. Sogndal has three hotels and several other providers of accommodation, and in 2018 almost 17,000 tourists stopped there overnight (statistikknnett.no, 2019). While many tourists simply stop for one night, since 2008 the village has made a name for itself within backcountry skiing and climbing. Sogndal's mountain sport tourism is a niche with synergies to important sectors in Sogndal, especially higher education, and thus plays a different role from pure accommodation.

Odda has 7000 inhabitants, and approximately 100,000 visitors per year. Most visitors come to hike to a rock formation called Trolltunga, located 10 km into the mountains. This hiking tourism has seen fast growth since the late 2000s and works as a diversification from metallurgic industries in what has been a 'single industry town'.

Flåm is the smallest village and has the largest number of visitors, with approximately 400 inhabitants and 1 million annual visitors. Tourism is the main economic activity, and a mass tourism strategy has been developed based on a historic railway.

### Sogndal

The establishment of a teachers' school in 1972 and a rural university college in 1975 has been decisive in giving Sogndal unprecedented growth for a village by the Sognefjord. The formation of these educational institutions was a result of a decision made by the state, which has since been an important non-local actor in Sogndal. In the changing political climate of the 1980s the university college took a more business-oriented direction, offering courses in business administration and tourism management (Yttri, 2008). This was both a first step towards the synergies



**Figure 2.** Case villages in Western Norway.

Source: Geographical data are from Kartverket.

that later developed between higher education and tourism and an early example of local agency adapting to that of the state.

A new era of local collaboration and maintenance leadership was sparked when new Union of European Football Associations (UEFA) stadium requirements were introduced, creating a need for a new stadium in Sogndal (Fløysand & Jakobsen, 2007). The stadium was built on the campus plot. Long-term rental contracts for teaching space for the university college allowed for use of state resources for local scopes beyond those intended by the state. Thus, Fosshaugane Campus, the major achievement of what some informants call the ‘Sogndal model’, became a prime example of what can be achieved through persistent collaboration. ‘And that’s one of Sogndal’s characteristics: widespread volunteerism and collaboration’ (local entrepreneur).

The same networks of collaboration that made Fosshaugane Campus possible exercised more change-oriented place-based leadership when a mountain sport festival was organized in 2008. By connecting local resources such as mountaineering guides, glacial researchers, spectacular mountains and good snow conditions at the right time, the festival entrepreneur enhanced the opportunity for Sogndal to tap into the growing trend of backcountry skiing and other mountain sports. Perhaps due to the organizer’s journalistic experience, the festival received media coverage that established the reputation of the snow in the Sogndal valley as among the best in the world. This is a form of institutional entrepreneurship that opened opportunities for entrepreneurship. A contributing factor was also that the regional office of the national television had been looking for a winter sport event to cover. Later, the same journalists launched a reality series called *Fjellfolk* (mountain people), featuring several people from the Sogndal area who work in or spend a lot of time in the mountains. The work behind the series

was both replicative entrepreneurship, as they produced and sold a new television series, and a form institutional work that reinforced the image of Sogndal as a mountaineering and backcountry skiing location.

A ball started rolling with the winter sport festival. They have opened the door for many like us. ... The mountains were here, then the equipment came, interest grew, and then came the mountain sport festival, then came *Fjellfolk* and then came we.

(local tourism entrepreneur)

The festival produced a window of opportunity for other actors in Sogndal to build new or improve existing activities within the tourism field. The networks of past place-based leadership were important both in realizing the festival and in using its momentum to create new activity in the following years. Thus, the initiative of one person contributed to changing the direction of place-based leadership, taking a step from maintenance towards change. At the same time his embeddedness in pre-established networks made both the festival and its wider effects possible.

The niche tourism activities have become a positive force for other activities in Sogndal. In the years following the first festival, applicant numbers to the university college in Sogndal grew more than the national average. ‘I don’t think it’s coincidental that the Mountain Sport Festival started in 2008 and that we then saw an upturn in several of our education programmes’ (board member at the university college). In 2017 the university college started offering a bachelor’s programme in nature-based tourism, thus using and reinforcing Sogndal’s new image as a place for mountain sports. In the years following the first winter sport festival, several new outdoor tourism companies have been established in Sogndal, but the companies are all small and of a lifestyle entrepreneurship character. Commercial developments of the ski lifts and

second-home properties in its surroundings might be the closest Sogndal comes towards Schumpeterian entrepreneurship within outdoor sports. This involves some central actors from the first years of the festival, as well as non-local investors.

Further development of the mountain tourism path in Sogndal would require more entrepreneurship with a higher degree of novelty, or at least at a larger scale. The slow commercial development may partially be explained by the nature of the local mountaineering sector, where mountaineering guides in particular prioritize protecting the mountains above capitalizing on them. It can also be tied to the priorities emerging from maintenance leadership, seeing mountain sports first and foremost as contributing to community and to making Sogndal attractive for other sectors, rather than as an important economic opportunity in its own right. However, the equilibrium around place-based leadership might be shifting. Some are now debating what is being perceived as unjust concentrations of power through non-formal channels. This may change the dynamism of the mountain sport tourism path.

### Odda

Once Norway's top tourist destination, Odda was transformed to an industrial town in the middle of an otherwise picturesque region after the establishment of the first smelting plant in 1908. Since the 1990s, Odda experienced industrial decline. For a town where three industrial companies employed one-third of the population, the situation was critical (Odda Municipality, 2000). From 1997 to 2002, Odda Municipality ran a restructuring project with higher tech industrial spin-offs and tourism development as parallel strategies. In 2003, Odda Smelteverk, the major employer in Odda, finally closed. This loss of 200 jobs represented a critical juncture for Odda. 'Many lost their jobs, and we suddenly had 160 declares in the town centre that we did not know what to do about. Maybe we to a bigger extent saw that we had to change ...' (municipal employee).

In response, some wanted the old production facilities removed to free up space for new activities, while others wanted to preserve them as United Nations Educational, Scientific and Cultural Organization (UNESCO) world heritage and use them for cultural tourism (Cruickshank et al., 2013). The latter group was inspired by past conservation projects, which, among other things, had led to the establishment of an industrial history museum in Tyssedal, 6 km from Odda. The conflict between the industry-oriented maintenance leadership and the tourism-oriented attempts at change leadership constrained effective response. After years of debate, the smelting premises are still there, mostly unchanged.

The development that led to the current tourism growth was independent of Odda's major industrial assets and is not a direct result of the past municipal efforts for tourism development. In 2008, facing an economically problematic situation, one of the local co-owners of a new hotel in Odda tried to create new attractions. He picked a rock formation called Trolltunga and a route for a *via ferrata*.<sup>1</sup> The *via ferrata* was projected together with the industrial history

museum, following the water pipes of the old hydroelectric power station, valorizing this part of the industrial heritage. 'We collaborated with the museum from day one. They have been a very nice collaborator, both as co-advocate and as thought partner for the historical contents in our trips' (mountain guide entrepreneur).

In this collaboration Schumpeterian entrepreneurship was coupled with the change leadership behind the industrial history museum. Yet, local collaboration did not change the situation alone. In 2008, the same year as the hotel was on the verge of bankruptcy, the destination marketing organization (DMO) of the Hardanger region made a new marketing strategy, using images of the Trolltunga rock formation on all their materials and communications. 'We wanted something that drew attention, really. And then we found Trolltunga. ... And at the same time [entrepreneur] established [mountain guide company]. It happened contemporarily. And we have kept in touch throughout the years' (Hardanger DMO).

After discovering each other, the DMO and the Trolltunga mountain guide entrepreneur contacted the supra-regional DMO, which became an important non-local agent for tourism development in Odda. Through the networks of the national tourism marketing organization, the images of Trolltunga gained a massive reach, being displayed in Times Square and on the front page of *National Geographic Traveller*. As visitors came, had their photograph taken on Trolltunga, and shared the images on social media, the marketing had a self-reinforcing effect. As a result, the number of visitors grew from 1000 in 2009 to 50,000 in 2015 (Hardanger, 2015).

Rapid growth gave the Odda community a much needed boost, with an estimated increase in value creation from tourism from approximately €1.3 million in 2012 to €7 million in 2017 (Wigestrand, 2018, pp. 28–33). However, quick growth also caused 'growth pains'. In 2016, there were 40 cases of mountain rescue emergencies. The DMO invited all relevant actors to participate in finding solutions, which involved changes in information and marketing, improvements to physical infrastructure, as well as having safety staff along the trail. In this phase, heterogeneous actors were aligned through maintenance leadership from the DMO. The municipality took a central role in carrying out these changes. Some of the common solutions were institutional changes, introduced to avoid self-undermining effects from tourism growth, thus illustrating how change agency might also have a path-reproducing effect.

Then we no longer wanted attention at any cost and agreed that all photos, TV and video produced at Trolltunga had to fit within the behaviour we want people to have there.

(Hardanger DMO)

So that's how we work, to make tourism as little of a hassle as possible to the locals. For instance, we have moved a part of the trail to steer away from a popular cabin area on the way to Trolltunga.

(municipal employee)

Since the Trolltunga breakthrough, some new activities have emerged through replicative entrepreneurship. Several non-local actors have expressed interest in Odda and Trolltunga. In dialogue between the mountain guide entrepreneur and the municipality, some projects were deemed unsuitable while others have been welcomed but have yet to materialize. By 2019 visitor numbers stabilized, and one might ask whether local actors will be able to further develop the path that has been created. Until now, commercial entrepreneurship of significance, except for the hotel and mountain guide entrepreneur, is missing. However, the municipality is conducting a public inquiry for a big sky-lift project by a non-local investor group. Although the new tourism path lacked foundations in local norms and imaginations, continued work for tourism development by the municipality and others might indicate a change away from purely industry-focused maintenance leadership.

### Flåm

A railroad line, constructed for infrastructural purposes in 1941, is the foundation for today's large-scale tourism development in Flåm. However, the development does not start with the construction of the line, but rather with the risk of its abandonment. In the 1980s, several railway side tracks around Norway were closed. After warnings from the new county governor, who had previously worked for the national railways (NSB), Aurland municipality initiated a train-based tourism development project in 1994. The change leadership surrounding the project pointed out train-based tourism as a future trajectory for Flåm. The project augmented the perceived importance of the railway, now going beyond its infrastructural function and the jobs at the railways.

In 1997, in spite of having been involved in the tourism project, the NSB decided to terminate the operations of the Flåm railway. In this problematic situation, the mayor, who found himself in a position of particular responsibility, enacted strong change agency. Together with the municipal tourism secretary, he presented the NSB with a tourism-based business model for turning the small deficit into significant profit. The NSB joined the project on the condition that the municipality would buy the railway infrastructures and build a cruise terminal in Flåm. While most municipalities would not have been able to do so, this was a possibility because Aurland municipality had a significant income from hydroelectric energy production. By setting conditions, the NSB as a non-local actor significantly shaped the path taken by Flåm, opening the door for other powerful non-local actors. A highly unusual organizational constellation was formed as the municipality and the local bank together bought the railway and the hotel, while the NSB were paid for operating the trains. In making this deal, the same parties were involved in institutional as well as Schumpeterian entrepreneurship. While the mayor and the local bank were acting for the good of the village, they created a profit-seeking actor that subsequently came to shape the trajectory of Flåm. However, they were careful to make this a

publicly owned 'capitalist', later rejecting an interested private investor due to disagreements about the further development of Flåm as a destination, thus combining maintenance leadership and replicative entrepreneurship.

There was an investor group that expressed interest. ... In principle, it was wrong to privatise the whole area. They wanted to put up a fence towards the local community rather than involving them in the development. ... And the happy outcome was that we parked the investor group and got Siva<sup>2</sup> with us.

(former mayor)

The municipality and the partly publicly owned company Flåm AS developed the railway, the cruise terminal and the hotel, constantly dealing with powerful non-local actors. Meanwhile, entrepreneurs opened and developed other accommodation, restaurants, shops and activities. The development phase is marked by replicative entrepreneurship, by both local and non-local actors. Although entrepreneurship always involves some degree of change, the cumulative effect has been to reproduce and strengthen the mass tourism path.

Non-local actors have been pushing for growth without concern for the cumulated local effects. Flåm AS and some other local actors have cultivated the growth, trying to maximize local value creation and limit negative side effects. For this purpose, Flåm AS has encouraged and supported local entrepreneurship, while also buying some local companies in order to develop them for tourism purposes. In this way, Flåm AS is exercising both entrepreneurship and maintenance leadership, and fulfilling some of the functions of a destination marketing and management organization. Taking on these wider roles, the company has also enacted institutional entrepreneurship. This form of institutional entrepreneurship contributes to the self-reinforcing dynamics of continued new venture formation within tourism in Flåm. 'That has been one of the strengths here, that everyone knows everyone. You can give input, join and get traction from the big actors. That new things are started and we get new experiences, that's a win-win situation' (local entrepreneur).

In response to tensions regarding crowding and pollution from cruise traffic, in 2015 and 2016 the organization managing the Nærøfjord world heritage park attempted to reduce the gap between industry and inhabitants through dialogue conferences. This maintenance leadership has contributed to solving problems related to crowding and travellers trespassing on farmland. However, the pollution issues remain. Through the UNESCO status gained by the Nærøfjord in 2005, the state too entered as a non-local actor, representing a counter-power to the tourism industry forces. In May 2018, Parliament decided that all traffic in the world heritage fjords must be zero emission by 2026.

When it comes to starting to set requirements, the UNESCO-status has been a weight in that direction. ... I'd say that thus far we have managed to balance different



considerations, so the tourism industry machine has not run out of control. ... What happens now when it comes to emissions is surprisingly positive, and it goes faster than I had expected. And what makes me feel a bit optimistic is that the [local] industry itself, at least when they talk to me, are no longer screaming for more, more, more.

(former mayor)

While adaptations have been made locally, it is still unknown whether the cruise industry will adapt or whether they will redirect their routes. As long as other ports are accessible, the latter is the cheapest and easiest solution – the most logical for actors without particular care for or responsibilities towards Flâm. Through their non-local institutional entrepreneurship, Parliament is playing an ambiguous role, protecting nature and inhabitants with the risk of undermining the livelihood of Flâm. They have created a new problematic situation. The question is whether local agents this time will be able to create solutions to the problem.

## DISCUSSION AND CONCLUSIONS

As illustrated by the empirical analysis, the prevailing types of agency vary between the path creation phase, which is characterized by change, and the phases where more stability is needed for the path to develop. Seen in retrospect, the paths build on developments and actions that took place in the preformation phase. This historical continuity indicates that even radical change agency has an evolutionary element to it, as it may build on pre-established networks or materialize future visions that emerged over time.

The shift from the reproductive processes of the preformation phase to the change dynamics of path creation can often be traced to a critical juncture, which in two of the discussed cases were triggered by problematic situations. A critical juncture is not made only of problems, but also by an opportunity space that makes certain changes possible. Both the problematic situations and opportunity space at least partially stem from exogenous processes to which agents respond. While non-local actors play an important role in making change possible, in the three cases agency by local actors was key in initiating path creation. This makes sense in light of the agency-triggering effect of problematic situations, which are problematic for specific places or for certain people (Emirbayer & Mische, 1998). Thus, the shift from reproductive to change agency is produced by a mix of exogenous forces and agency by locally embedded actors.

The path creation phase is characterized by the intertwining of Schumpeterian entrepreneurship with change agency beyond the firm. Change agency may be concentrated in a few agents and does not necessarily correspond to their formal position. For instance, institutional entrepreneurship and place-based change leadership may be enacted by firm actors (Grillitsch & Sotarauta, 2020). Perhaps more surprisingly, the case of Flâm shows that public actors too may enact Schumpeterian entrepreneurship. The cases of Flâm and Sogndal

also show that the one and same actor may be involved with several types of change agency in a concentrated period of time. Further, in the path creation phase local actors typically involve non-local actors who contribute resources that are not available locally. These actors may continue influencing subsequent path evolution (Binz et al., 2016).

The shift from change agency dynamics to the reproductive agency patterns of path development is gradual. Due to vested interests, agents actively reproduce and strengthen the path (Musiolik et al., 2012). Thus, the same actors who enacted change agency in one situation may enact reproductive agency in another. Compared with the path creation phase, where a few actors tend to enact several types of change agency, agency is more distributed in the path development phase. As the emerging path opens new opportunities, replicative entrepreneurship and complementary activities add critical mass. Place-based leadership is likely to focus on maintenance, as with the dialogue conferences in Flâm. Such reproductive agency may indeed be a positive force for development, without which a path is unlikely to stabilize. Yet, there may be a mix between reproductive and change agency also in the path development phase. For instance, new collaborations and the creation of new institutions in Odda are changes. However, these changes also contribute to the development of the path, as they counter self-undermining effects stemming from the path itself. This illustrates that there is a continuum between change agency and reproductive agency. Such nuance makes analysis less crisp, but it also keeps the door open for some of the complexity of structure–agency interactions and the relationship between intention and outcome, immediate effects and the greater picture.

Although the three cases all have a stronger presence of change agency in the path creation phase and of reproductive agency in preformation and path development, there are variations in the agency mix seen in the different cases. For instance, place-based leadership, both for maintenance and change, is most accentuated in Sogndal, while Schumpeterian entrepreneurship has been most accentuated in Flâm. Also, there has been more change agency in Flâm than in the two other cases. In Odda change agency has continued through path development, but it is being enacted by different actors than those who created the path.

The differences between the paths, both in agency patterns and type of tourism, point towards different future developments. Covid-19 created a problematic situation in 2020, which might represent a critical juncture for places specialized in tourism. This is not so much the case in Sogndal, where mountain sport tourism was already mostly focused on the national market. The positive trend in student numbers continued in autumn 2020 too. However, the resistance recently faced by maintenance leadership might be a step towards changing dynamics, which could speed up, slow down or otherwise alter the tourism path development. In Odda Covid-19 represents a significant challenge, but it seems to have

provoked temporary adaptation rather than long-term change agency. Continued action for strengthening the tourism path indicates that self-reinforcing dynamics are in play, and that place-based leadership is starting to consolidate around the hiking tourism path. This illustrates how agency responds to past agency and thus has an evolutionary element to it. This is also the case in Flåm, where the tourism sector is experiencing a double problematic situation, with the challenge to adapt to new environmental regulations and a significant loss of income in 2020 due to the Covid-19 pandemic. Yet local actors are investing in green technological solutions while doing institutional work in order to shape the environmental regulations to their advantage. Thus, change agency and reproductive agency are being enacted simultaneously and partly by the same actors. Accordingly, at this critical juncture the Flåm tourism path seems to continue as a dynamic process, as suggested by Martin (2010).

The agency perspective of this paper contributes towards an understanding of how human actors may foster regional development. The importance not only of willingness and ability to change, but also of building upon lasting structures, emerges from the investigation of changing agency patterns in the course of path evolution. By directing attention towards reproductive agency in addition to change agency, the paper also contributes to nuancing the understanding of agency and to partially reconciling agency with an evolutionary perspective. While change agency is key to path creation, reproductive agency is necessary for the path to develop. The observed passages between phases characterized by different agency patterns also indicate that the more radical change agency is often connected to critical junctures, which at least partly stem from exogenous events or developments. Thus, new paths cannot be explained by local agency or exogenous shocks alone, but by a mix of local and exogenous developments that offer opportunities and create pressure for change. Accordingly, it emerges that actions contributing to change can be intended and strategic, but also reactive, as they are influenced by problematic situations.

The paper has utilized two supplementary conceptual tools in understanding the relationship between endogenous and exogenous forces. A distinction between local and non-local agents draws to the fore the key role of non-local actors in bringing new resources (Binz et al., 2016; Miørner & Trippel, 2019), as well as the disproportionate influence they may thus gain (Hambleton, 2019). The concept of critical junctures represents another type of link between local path evolution and wider developments, which is also a step towards taking into account the changing conditions for agency across time. The study has some limits as it draws solely on cases from the rural tourism industry, which has several peculiarities relative to other industries. Accordingly, agency and its relationship with exogenous events and processes in industry development should be further investigated and nuanced in future research in other regions and industries. The multiscalarity of agency also needs to be further explored and

conceptualized beyond the local, non-local distinction. In addition, new questions emerge regarding the background, knowledge and social networks of key agents in industry path development.

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## NOTES

1. *Via ferrata* (in Italian) means iron path and refers to steep mountain paths equipped with fixed ladders, cables and bridges.
2. A public company that develops, owns and finances national infrastructure for innovation and industry development.

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# Fields of change? Actors, institutions and social fields in the green restructuring of the Flåm tourism industry

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## **Abstract**

The need for green industrial restructuring is increasingly being recognised, also within the tourism industries. This paper investigates the green restructuring of the tourism industry in the village Flåm, where actors and social fields at different geographical scales are involved. A multi-scalar perspective on social fields, with their different institutional logics, provides a framework for approaching the roles of overlapping logics and actors' institutional work in driving and giving direction to green restructuring. The investigation finds that institutional change in different fields is interconnected through scalar overlaps and through actors' institutional work across fields.

Keywords: Green restructuring, institutional change, social fields, institutional work, institutional logics, scale, tourism

## **1. Introduction**

In many rural areas tourism has offered opportunities for economic development (Calero & Turner, 2019; Garrod et al., 2006). However, tourism as an activity can produce sustainability issues both locally and globally (Gössling & Peeters, 2015). Too much success in terms of visitor numbers (and, consequently, economic gain) may also undermine the very aspects that made a destination popular in the first place, as local pollution, landscape wear, overcrowding, exaggerated construction and touristification reduce the desirability of visiting the destination (Milano et al., 2019;

Randelli & Martellozzo, 2019). When it comes to UNESCO world heritage sites, which are per definition rare, fragile and listed for protection, the promotion of tourism appears particularly paradoxical (Dosquet et al., 2020). Yet, many scholars and practitioners alike argue that environmentally sustainable tourism is possible (Bramwell et al., 2017). However, there are different visions of how to achieve it.

This paper investigates the way in which sustainability issues have been treated in Flåm, a popular rural destination by the Nærøysfjord natural world heritage area in Western Norway. In 2019, prior to the covid-19 pandemic, Flåm received 157 cruise ships and about a million visitors – no small number for a village of 300-400 inhabitants. Considering the magnitude of operations, tackling sustainability issues in Flåm is a matter of industrial restructuring towards a greener direction. The type and direction of industrial development in places and regions is strongly intertwined with institutions (Sjøtun & Njøs, 2019; Sotarauta et al., 2020), not least when it comes to green restructuring of established industries (Henrysson & Nuur, 2021). Following Njøs et al. (2020), green industrial restructuring is understood as a shift towards industry structures that are both economically sound and more environmentally sustainable. As green restructuring is often normatively motivated, it may be both a result (Späth & Rohracher, 2010) and a driver (Sjøtun, 2019) of institutional change. Agency plays a central role in producing institutional change that shapes the direction of industrial development (Benneworth et al., 2017; Sjøtun, 2019; Sotarauta et al., 2020). So does the interaction between different institutional logics, where contrasting institutions tend to provoke change (Friedland & Alford, 1991). Thus, approaching the institutional change tied to the green restructuring of the Flåm tourism industry requires a framework for understanding the coexistence of

different institutions and the ways actors adapt to and shape the institutional landscape.

The coexistence of different institutions within and across contexts is here conceptualised with the notions of institutional logics (Thornton & Ocasio, 2008) and social fields (Bourdieu & Wacquant, 1992; Fløysand & Jakobsen, 2001), while the agency of actors within these fields is approached through the notion of institutional work (Lawrence & Suddaby, 2006). The paper departs from an understanding that the ways institutional logics interact and agents do institutional work is better understood through a multi-scalar perspective (Gong & Hassink, 2019), while adding to this understanding by developing an analytical framework sensitive to the actors, institutional logics and social fields in green restructuring of industries. Empirically, the paper exemplifies how the green restructuring of the Flåm tourism industry field is shaped by conflicting logics and institutional change in different social fields across geographical scales. Thus, the paper answers the following research questions:

How can we understand the green restructuring of tourism industries through a multi-scalar social field approach?

What is the role of actors, institutional logics and social fields in the green restructuring of the Flåm tourism industry?

## **2. Institutions and change**

In line with North (1990), institutions are commonly understood as the formal and informal rules that guide human activities. Institutions shape the attitudes, values and expectations of actors (Gertler, 2004) and function as social guidelines for appropriate and legitimate behaviour (Bathelt & Glückler, 2014; Benner, 2021). Institutions are often perceived as rather static, slowly evolving with their

surroundings, changing radically only in the face of shocks (Fuenfschilling & Truffer, 2016). An example of this is the delegitimization of established technologies or ways of operating after disasters or scandals. Yet, institutional change does occur also under other circumstances (Benner, 2021; Strambach, 2010); this can be tied both to the structure of the institutions themselves (Friedland & Alford, 1991) and to the ways agents interact with them (Battilana et al., 2009; Sotarauta, 2015).

Recent research in economic geography has particularly focused on the role of agency in institutional change (Benneworth et al., 2017; Gong & Hassink, 2019; Sjøtun, 2019; Sotarauta et al., 2020). Humans may change institutions through embedded agency, where “actors are constrained, but also enabled by institutional structures, which, in return, are socially constructed by them” (Fuenfschilling & Truffer, 2014, p. 776).

This process has been approached with the notions of institutional entrepreneurship (DiMaggio, 1988) and institutional work (Lawrence & Suddaby, 2006). While institutional entrepreneurship is about the creation and institutionalization of new institutions (Bækkelund, 2021; Zietsma et al., 2016), institutional work is “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions” (Lawrence & Suddaby, 2006). Hence, the concept ranges from the creation of new institutions to the reproduction of existing institutions. The latter may be part of the explanation for the stability of institutions, rather than taking this for granted. Furthermore, institutional work for upholding established institutions may also contribute to shaping emerging institutions.

## **2.1 Social fields and institutional logics**

The struggles over institutions take place in the contexts where these institutions order social life. The notion of field has been fruitfully applied when approaching such institutional contexts (Zietsma et al., 2016). While scholars in organisational



studies have developed the notions of organisational fields (DiMaggio & Powell, 1983; Scott, 1995) and strategic action fields (Fligstein & McAdam, 2012), these field approaches are inspired by sociological work, especially that of Pierre Bourdieu (eg. 1984, 1999; Bourdieu & Wacquant, 1992). Different field perspectives have a series of commonalities, in particular an understanding of fields as areas of frequent interaction with a common meaning system (Scott, 1995). However, the organisational perspectives consider fields to consist of organisations (DiMaggio & Powell, 1983) and other collective actors (Fligstein & McAdam, 2012), while Bourdieu's social fields are populated by individual actors who have different connections and relations to each other (Bourdieu & Wacquant, 1992). Thus, when studying a case where individuals do institutional work outside of organisations (eg. in a local community) the social fields approach appears the most apt.

A social field “consists of a set of objective, historical relations between positions anchored in certain forms of power...” and “prescribes its particular values and possesses its own regulative principles” (Bourdieu & Wacquant, 1992, p. 16-17). In other words, fields are fields because actors who work for a specific goal (eg. scientific production or environmental regulation) interact or relate to each other over time, thus developing a shared implicit understanding of what the field is about. As conceptualised by Bourdieu, social fields are spaces of struggle over position *and* over what the field is about (Emirbayer & Johnson, 2008; Painter, 2000). The latter is not only matter of the field's goals, but also of why and how these goals should be achieved (Martin, 2003). For instance, as in the case of Flåm, why and how more sustainable ways of doing tourism business should be developed. Such ensembles of goals, values, beliefs and rules, ordering and providing meaning to the practices within a field, make up the field's institutional logic(s). Thornton and Ocasio define

institutional logics as “the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organise time and space, and provide meaning to their social reality” (1999, p. 804). Fields can have one prevailing logic, but, as will be seen from the empirics, they may also be influenced by several institutional logics (Thornton & Ocasio, 2008) that overlap (Glynn & Lounsbury, 2005) or compete (Fuenfschilling & Truffer, 2016). Thus, in their struggle over the field’s goals, actors do institutional work to change or maintain the prevailing logic, often drawing on contradictions within the field or in the meeting point between fields with different logics.

The contact-points between different fields with different institutional logics are sources of institutional change as multiple logics “provide alternative meanings” (Friedland & Alford, 1991, p. 254), allowing actors to use different frames of interpretation in their institutional work. Accordingly, actors who have contact with different institutional fields may use the differences between the fields’ institutional logics in their work for institutional change (Battilana, 2006; Zietsma et al., 2016). Fligstein and McAdam (2011) consider fields to be more distant or proximate depending on how frequently actions in one field impacts another field. We must also consider that the fields’ logics may be more or less proximate or contradictory, which has important implications for interfield institutional work and institutional change (Friedland & Alford, 1991). Although it is recognised that institutions in similar fields, such as financial industry fields, may vary across geographical contexts (Lounsbury, 2007), the distance and connections between fields and their different institutional logics have primarily been considered in aspatial terms. In the next section,

geographical approaches to social fields and institutional logics are discussed and a perspective sensitive to geographical scale is developed.

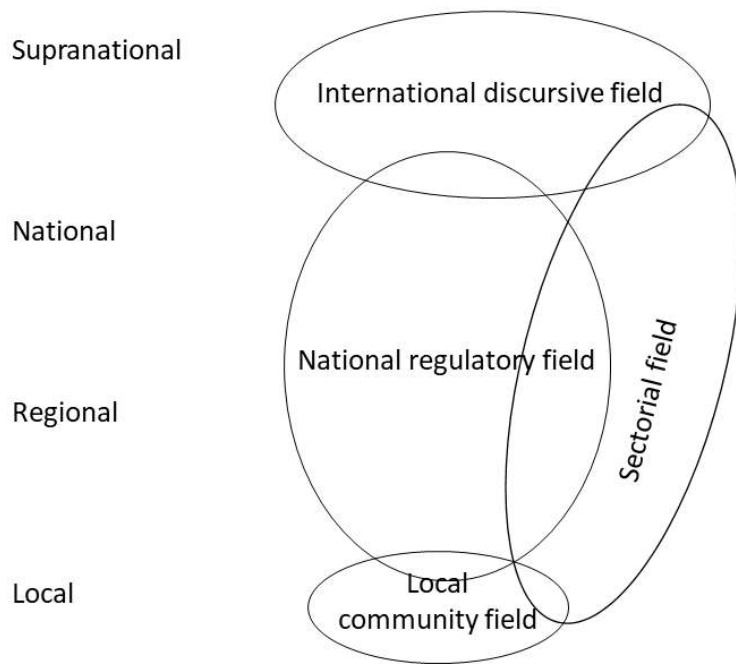
## **2.2 A multi-scalar perspective on social fields and institutional work**

Bourdieu's notion of social fields is aspatial as fields are considered in terms of relations, positions, logics, rules and regularities, rather than the physical space in which these interactions take place. However, all interaction takes place *somewhere* – an aspect to which Bourdieu granted a little more attention in his later work (Bourdieu, 1999; Hanquinet et al., 2012). Thus, as suggested by Painter (2000, p. 257), the idea of field may be “recast without much difficulty around a more complex spatiality, involving multiple and overlapping spaces, network approaches as well as theories of space that emphasise discontinuity, fragmentation and contradiction.”

While geographers have not engaged too much with the notion of fields, both Fløysand and Jakobsen (2001, 2011) and Spigel (2013, 2016) have developed spatial perspectives on fields and their implications for actors' innovation activities. Both perspectives emphasise that actors simultaneously take part in various fields of different scales and that their practices are coloured by the institutional logics of different fields that they participate in.

Spigel (2016) distinguishes between what he calls “the local field” and non-local fields, and argues that as agents live their everyday lives in a specific location, the locally dominant values, perceptions, knowledge and ways of thinking influence “how the rules and power relationships of nonlocal fields are understood” (Spigel, 2016, p. 10). Fløysand and Jakobsen's (2011) fields are not geographically defined but have different empirically determined geographies. This leads to a model of a “complex field system” in which fields of different scales overlap in multiple ways.

Fløysand and Jakobsen's (2011) field model builds on the work of Grønhaug (1978), an anthropologist who started developing a scalar perspective of fields. In line with many geographers, he understood scale as a matter of resolution or geographical span (Marston et al., 2009). From this perspective, the scale of fields is determined by the geographical span of participation. Accordingly, fields with participants in many locations can be considered as being at a higher geographical scale than fields with participants within a geographically more restrained area, such as the local community in a village. Yet, an important point from Grønhaug (1978), using the religious field of Islam as an example, is that higher scale fields do not have a homogenous impact on all locations, but may still be considered to be higher scale fields because people in very far-away locations share certain practices, perceptions, rules and ways of thinking that are tied to their participation in these fields. Thus, recalling debates over the very notion of scale, higher scale fields are also tied to people and practices in specific physical locations (Keil & Mahon, 2010; Leitner & Miller, 2007). However, unlike lower-scale fields which are territorially specific, higher scale fields' institutional logics are spread across and have an impact on practices in multiple locations (Fuenfschilling & Binz, 2018; Miörner & Binz, 2020).



*Figure 1: Example of fields from a geographical scale perspective.*

A geographical perspective on fields (illustrated in Figure 1) is also useful for approaching institutional interactions across geographical scales, as called for by Cinar and Benneworth (2020) and Gertler (2010, p. 14). There is often interaction between the logics of different fields, especially between fields at higher and lower scales (Hassink et al., 2014), as multiple institutional layers influence the same actors and activities (Grillitsch, 2015). This is particularly evident in the case of jurisdictional fields in which institutions are formalised as rules that actors within the field's jurisdiction must comply with (Gong & Hassink, 2019; Grillitsch & Rekers, 2016), driving coercive isomorphism in lower scale fields (DiMaggio & Powell, 1983). This is especially the case of state fields (Fligstein & McAdam, 2012), but can also be the case of large corporations or other organisations, even without formal sanctions, such as with the spread of best practices promoted by international organisations. In general, we can expect higher-scale fields to have a strong influence on connected

lower-scale fields (Meyer & Rowan, 1977). However, this may play out in very different ways in different lower-scale fields (Spigel, 2016).

Experienced downwards pressure may trigger ‘upwards’ institutional work by actors who are primarily embedded in lower-scale fields (Fuenfschilling & Truffer, 2016; Gong & Hassink, 2019). Such multi-scalar institutional work may also stem from a wish to obtain specific changes, for instance when actors from the Norwegian maritime industry work for new environmental regulations for ship traffic, which may in turn increase the demand for their environmental technologies. The multi-scalarity and multi-field topology of the institutional landscape has implications for viable approaches to institutional work. Organizing across several (sub)fields centred at lower scales is a common strategy for increased influence towards fields at higher scales (Gong & Hassink, 2019; Leitner & Miller, 2007, p. 122). Furthermore, actors with networks in several fields, including the one(s) they aim to influence, can be expected to have more leverage in their institutional work (Battilana, 2006). Having some understanding of the different field’s logics enables them to activate established logics from the field they aim to influence, thus improving the chances of achieving institutional change (Fuenfschilling & Truffer, 2016, p. 307). Similarly, actors may tactically draw upon adjacent fields in their institutional work (Miörner & Binz, 2020).

The notions of social fields, institutional logics and institutional work provide different analytical elements for approaching institutional change through a multi-scalar perspective. The notion of social fields allows for analysing influence between different spheres, and thus how institutions spread across different contexts. The geographical scale dimension adds nuance to the field landscape, contributing to the understanding of why fields interact in the ways they do. Finally, the notion of

institutional work draws attention to the role of agency in institutional change. This multi-scalar approach will be applied to analyse how green restructuring through the application of green technologies has emerged in the Flåm tourism industry.

### **3. Methods**

Lawrence and Suddaby (2006) observe that “institutional work is often language-centred”, and suggest that text analysis therefore is a promising approach to studying institutional work. In this paper text analysis is combined with process tracing (George & Bennett, 2005), using a mix of text sources, interviews and observation. Starting from observed institutional change, several parallel processes have been traced to find out what happened and which actors did what. This tracing takes the village Flåm and the controversies surrounding a) the possibility of expanding the capacity of the Flåm cruise terminal and b) national regulations for ship traffic in the World Heritage Fjords, as points of departure. By tracing this process and analysing the different logics that surfaced in the debates, different social fields and the meeting points between them can be observed. Actors who frequently interact over certain topics, or who work for a common goal over time, are here considered as belonging to the same field. Drawing up social fields through text analysis might have some shortcomings relative to ethnographic studies. However, the resulting parsimonious field landscape contains the fields of observable relevance to the institutional change behind the green restructuring of the Flåm tourism industry.

The empirical research was conducted in three phases. In the first phase I gained an overview over the case by reading background materials, visiting Flåm, and conducting six interviews with Flåm actors and another six with regional tourism actors in the course of 2019. In the second phase, all material regarding tourism and sustainability in Flåm, published in the local newspaper *Sogn Avis* from June 2014 to

July 2020, was collected. The material was coded and analysed according to what topics different actors talked about, how they talked about the topics, and whether it changed across time. Relevant institutional change processes were also identified by triangulating text material and interviews. In the last phase, in winter 2021, documents and hearing statements, as well as statements by the same actors in other newspapers and media, were gathered and analysed. To fill certain information gaps an additional five interviews were conducted. Table 1 gives an overview of the interviews and text material used in the analysis.

<b>Interviews</b>	17 interviews: tourism industry actors, public support structure, inhabitants, technology experts, NGOs, politicians
<b>Sogn Avis</b>	239 pages: Opinion pieces, news reports, interviews and editorials
<b>Reports</b>	Meld St. 41 (2016-2017) Norway's Climate Strategy for 2030: a transformational approach within a European cooperation framework Norwegian Maritime Authority (May 5th 2017). Utslipp til luft og sjø fra skipsfart i fjordområder med stor cruisetrafikk. [Emissions to the air and waters in fjords with heavy cruise traffic.] DNV-GL, Report nr. 2019-1250. Nullutslipp I 2026 for skip I verdensarvfjordane. Sjøfartsdirektoratet. [Zero emission in 2026 for ships in the world heritage fjords] Oversendelse av rapport og Sjøfartsdirektoratets vurderinger. (April 22nd 2020). [Cover letter from sending report, including the Maritime Authorities' recommendations.]
<b>Hearing documents and minutes</b>	8 input documents to the Maritime Authorities' regulation process 7 input documents to the Climate Strategy 2030 (Innst. 253 S (2017-2018)), and minutes from the following Parliamentary discussions 24 input presentations to motion (Dokument 8:23 S (2020-2021)). Minutes from the Parliamentary discussion on Innst. 251 S (2020-2021)

*Table 1: Data material on the zero-emission law and green restructuring of the Flåm tourism industry*

#### **4. The green restructuring of the Flåm tourism industry**

Flåm is a 350-inhabitant village at the end of a fjord arm in Western Norway. Since the 1990s, tourism has become the key economic sector in Flåm, with a million



annual visitors prior to the Covid-19 crisis (Bækkelund, 2021). The visitors are both individual travellers and cruise tourists. A historical railway and the Nærøyfjord are the major attractions. The Nærøyfjord, together with the Geirangerfjord, was granted UNESCO world heritage status in 2005. While this status did not spark much debate at the time, the contradictions between large scale tourism business and the values that allowed for the granting of this status have since emerged. Conflicts between different institutional logics has provoked institutional work in different directions, shaping the restructuring of the Flåm tourism industry through institutional changes across fields. After providing an overview of the key social fields, the cross-field institutional work shaping the green restructuring of the Flåm tourism industry will be discussed.

#### **4.1 Social fields**

Based on the empirical analysis of debates regarding mass tourism and environmental impact in Flåm, five social fields of relevance to the green restructuring of the Flåm tourism industry have been identified. These consist of actors who frequently interact over certain topics or work for common goals over time. The fields are also characterised by one or a few institutional logics, which emerge from the actors' institutional work. As illustrated in Figure 2, one of these fields is local centred, three are centred at the national scale, while one is global. Institutional changes in the Flåm tourism industry field is the main analytical focus.

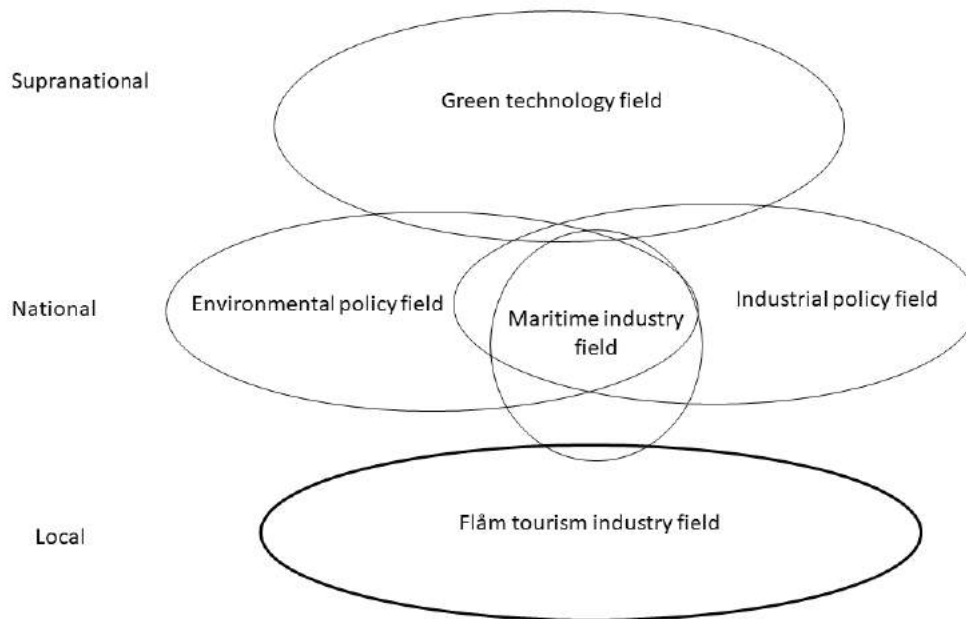


Figure 2: Social fields involved in the green restructuring of the Flåm tourism industry field.

#### 4.1.1 The local tourism industry field

The Flåm tourism industry consists of approximately 20 tourism enterprises and a few public organisations. Flåm AS, the largest among the tourism enterprises in Flåm, had a turnover of around 21,700,000 € in 2019. The municipality is a co-owner of Flåm AS. This contributes to integrating the local public sector in the Flåm tourism industry field. Furthermore, the Harbour Authority, who manages the cruise terminal, is another public actor sustained by tourism. As the tourism sector is a major employer, tourism is also key to maintaining the municipality's tax base.

In rural areas, dominant industries tend to be strongly intertwined with the social fabric of the local community (Fløysand & Jakobsen, 2001). Prior to the Covid-19 crisis, about 10% of the inhabitants of Aurland municipality had their primary occupation in the tourism industry (SSB, 2020). In the village Flåm, almost half of the households had part of their income from tourism. Thus, the local community is highly dependent upon tourism for economic reasons. Flåm has a mix of large-scale

tourism based on cruise ships and other group travellers, and small-scale tourism with independent travellers staying at farms or doing different nature-based activities. Due to the different magnitudes of operations, those that are involved with large-scale tourism dominate the Flåm tourism industry field.

Like most business fields, the main goal of the Flåm tourism industry field is profit. Following an economic logic, the field's core value is growth. The local tourism industry field and its economic logic largely permeates the local community. As Flåm is in a rural area at risk of depopulation, maintaining inhabitant numbers is an important goal for the local community and for Aurland municipality. Maintaining the local community is not purely an economic matter, but also a matter of welfare and liveability. Accordingly, a local community logic exists alongside the dominant, business oriented economic logic. Following the local community logic, the main goal is to make Flåm attractive to current and future inhabitants. This entails 'softer' values such as community spirit, environmental concerns and aesthetics in addition to economic sustenance.

#### **4.1.2 The national environmental policy field and industry policy field**

From the national policy processes that directly influence the green restructuring of the tourism industry in Flåm, two different fields centred at the national scale may be detected – the environmental policy field and the industry policy field. These fields consist of politicians, bureaucrats, stakeholders and participants in public debate about the respective issue areas. The two fields have partially different goals, values and logics. The goal of the environmental policy field is to protect the environment, while that of the industry policy field is sound national economic growth. As it is recognised that most environmental issues stem from economic activities, solutions are increasingly sought in the economic area. Thus, the two fields are overlapping,

and hybrid logics have emerged. Consequently, both policy areas are involved in developing policies for solving environmental issues stemming from industry, and for technology development that would allow national industry to profit from a green reorientation of the international economy.

#### **4.1.3 The maritime industry field**

In addition to policy fields, actors from the national maritime industry field played a key role in the regulatory process for ship traffic on the World Heritage Fjords (and thus for cruise traffic to Flåm). This field consists of companies within maritime sector in Norway, varying from shipyards to technology developers to shipping companies. These companies are part of local communities and industries, as well as the national and international maritime industry. With a value creation of 142 billion NOK in 2018, Norwegian maritime sector is valuable to the national economy (Helseth et al., 2019). This field is dominated by economic logic, but environmental concern has become more prevalent through the work of some actors in the field, for instance the participants in the NCE Maritime Cleantech cluster in Southwestern Norway.

#### **4.1.4 The global green technology field**

The global discursive field around green technology consists of those making the case for technological solutions to humanity's environmental problems, and those creating and producing those technologies. Hence, various governments, businesses, researchers, non-governmental organisations and supranational organisations, such as the UN and World Bank (Dryzek, 2013), spread across different locations around the world, participate in this field. This is an example of a global field spreading an institutional logic to different sectors and locations (Fuenfschilling & Binz, 2018, p. 736). The field's goal is continued economic growth without increasing

environmental impact. Protecting the environment is part of the field's values, but economic goals dominate. The green technology logic is technology optimist, rearing the hope that ecological sustainability may be achieved without substantial changes to the way we live (Alexander & Rutherford, 2019; Kerschner & Ehlers, 2016). The green technology logic that can be observed in the greening of the Flåm tourism industry field can be traced to this global field. The NCE Maritime Cleantech cluster has contributed to spreading the green technology logic in the Norwegian maritime industry and national environmental policy fields (Sjøtun, 2020).

Thus, based on analysis of the empirical data, five social fields have been identified. These fields and their interrelations influence the ongoing green restructuring of the tourism industry in Flåm and how different actors approach the green restructuring. The next section discusses how the institutional logics of multiple fields have changed.

#### **4.2 Institutional work and the green restructuring of the Flåm tourism industry**

The green industrial restructuring in Flåm has come about through a series of events leading to institutional changes (overview of key events in Table 2). Different actors have shaped these changes through their institutional work in social fields at multiple scales. The following section discusses the ways actors do institutional work and how this institutional work shapes the green restructuring of the Flåm tourism industry field.

<b>Events July 2014 – February 2021</b>	
<b>July 2014:</b>	Mooring buoy case sparks anti-cruise protests in Flåm
<b>April 2015:</b>	Project for hybrid sightseeing vessel is presented publicly
<b>November 2015:</b>	World Heritage Council asks Maritime Authorities to consider special regulations for world heritage fjords
<b>March 2016:</b>	Port Authorities' first application for funding for shore power system for cruise ships
<b>June 2016:</b>	E-mobility electric car rental sets up in Flåm
<b>May 2017:</b>	The Maritime Authorities present pollution mapping and suggested measures
<b>August 2017:</b>	Cruise harbour forum for coordinated environmental measures initiated
<b>May 2018:</b>	Parliamentary decision on zero emission ship traffic in the world heritage fjords by 2026
<b>April 2020:</b>	Second application for state support for cruise ship shore power system
<b>May 2020:</b>	The Maritime Authorities recommend that the zero emission requirement be postponed to 2030 and that the special requirements regarding NO <sub>x</sub> and SO <sub>x</sub> in the world heritage fjords be expanded to all fjords
<b>June 2020:</b>	Funding granted for cruise ship shore power system in Flåm
<b>October 2020:</b>	Parliamentary motion to postpone zero emission requirements from 2026 to 2030
<b>February 2021:</b>	Parliamentary decision to start zero emission requirements from 2026

Table 2: Key events

#### **4.2.1 Opening a latent conflict**

Conflicting logics within the field has been a triggering factor for green restructuring in the Flåm tourism industry field. The conflict of logics emerged as tourism grew and some inhabitants began to perceive mass tourism as a threat to their well-being and to do institutional work challenging the dominant economic logic. This could be observed from the debates in 2012 regarding a second cruise terminal (Brendehaug, 2017). However, the conflict was finally laid open by protests after the Harbour Authority placed a mooring buoy for cruise ships at the mouth of the Flåm river in June 2014. The river is the breeding ground for a protected salmon lineage, and the Harbour Authority had not applied for permission. The protesters questioned the way in which economic goals were prioritised over the natural environment and inhabitant well-being. They thus challenged the dominant economic logic in the local tourism industry field. The strongest provocation was a row of haybales with the

writing “no cruise ships” and “no grandi navi” placed on top of a hill very visible from the village centre.

Other inhabitants, as well as businesses, did institutional work for the maintenance of the prevailing economic logic. Businesses never publicly commented the protests and the mooring buoy case, but both businesses and the Harbour Authority left several statements in Sogn Avis emphasizing the economic impact of tourism in Flåm. The local newspaper’s custom of frequently reporting on visitor numbers and turnover bears evidence of the institutionalization of economic logic in Flåm, while also contributing to reinforcing it. However, the clash between logics is most clear from the debate between inhabitants, where some tie the goal of liveability to environmental protection and local democracy, while others tie it to economic matters:

*“There are likely to be environmental aspects to the wide-reaching cruise activity. But may one think twice regarding the form of protest? Living local communities are important and the biggest challenge for maintaining such communities is to create good and lasting workplaces.”* (Inhabitant in Sogn Avis, September 6<sup>th</sup>, 2014, p. 2)

Through these debates, actors in Flåm were working to de- or re-institutionalise the goals of the local field. The protesters also connected with other social fields at other scales. By writing “no grandi navi”, the slogan of anti-cruise protests in Venice (Vianello, 2013), they drew upon discourses from other social fields – both from certain tourist destinations in other geographical contexts and the global discussion regarding the unsustainability of tourism. This way they activated the multi-scalar interconnectedness of the local tourism industry field in Flåm.

In addition to drawing on fields beyond the local scale, the protesters also did institutional work in fields at higher scales. The protests gained attention in national media, and so they produced a (temporary) overlap between the national environmental policy field and the Flåm tourism industry fields. By emphasizing sustainability issues, they mimicked the goals and values of the national environmental policy field, while also drawing upon discourses from overlapping fields at higher scales. As a first impact, the institutional work at the national scale can be seen from the media coverage of the protests and from growing (critical) mediatic attention to cruise-related issues in their aftermath.<sup>1</sup>

#### **4.2.2 Introducing the green technology logic in the Flåm tourism industry field**

While Flåm tourism industry actors at first attempted to reproduce the economic logic of the local field, the overlap with the national environmental policy field created pressure to follow this higher-scale field's logic. Doing so was also compatible with the Flåm tourism industry field's economic logic, as negative attention beyond the local scale could damage profits. Thus, steps were taken towards green restructuring. In spring 2015, The Fjords – a joint venture between Flåm AS and the ferry company Fjord 1 – ordered a hybrid sightseeing vessel for the Nærøyfjord. As the hybrid vessel needed charging stations, they involved the Harbour Authority. After getting in touch through this project, the Harbour Authority established a

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<sup>1</sup> The most active coverage of the protests, beyond the local newspaper, was by the national broadcaster NRK and the regional newspaper Bergens Tidende (BT). They continued covering cruise issues, with headlines such as “Haybale protests in Flåm – tourists react with fear” (NRK, July 18th 2014) and “- About time to set requirements for cruise ships” (NRK, May 5th 2017), “The cruise nuisance” (BT, July 26th 2014, p. 12), “Cruise traffic ruins the city” (BT, September 7th 2016, p. 6), “Wants to remove the dirty cruise traffic” (BT, June 3rd 2017), “Next summer it will explode” (BT, July 30th 2018). Not least did Aftenposten dedicate a special issue of their magazine to cruise tourism, with the front-page title “Cruise without control – unregulated environmental sinner” (Aftenposten Innsikt, July/August 2016).



collaboration with the NGO Bellona to assist with applying for funds for a shore power system at the cruise terminal.

Through this project, an overlap was established between the local tourism industry field and the green technology field. Both Bellona and the CEO of The Fjords were doing institutional work, promoting green technologies not only as a solution to the economy–environment conflict, but as an economic opportunity. They were thus working to spread the green technology logic in the Flåm tourism industry field by emphasizing its compatibility with the field’s goal of profit. In the years that followed, Flåm AS made sustainability strategy focusing on investments in infrastructure and transport technologies. Other local companies also started working with green technologies, such as electric car rental and electric RIB-boats (Sogn Avis, 14.1.2020, p. 6-7). These investments reflect the spread of green technology logic in Flåm, which has been followed by a discursive change towards talking about sustainability.

*“We will offer exciting experiences through small, colourful electric cars. There will be no pollution, no noise, but a lot of fun ...”* (Entrepreneur A to Sogn Avis, June 4<sup>th</sup>, 2016, p. 6).

*“Our motivation was to offer our guests experiences with environmentally and climate friendly transports ...”* (Entrepreneur B to Sogn Avis, January 14<sup>th</sup>, 2020, p. 6).

*“Flåm AS has been in front for green development, and we have strategically directed ourselves towards general climate goals and the vision of zero emissions.”* (Flåm AS in Sogn Avis, May 19<sup>th</sup>, 2020, p. 3).

The above statements by Entrepreneurs A and B reflect the green technology logic as the entrepreneurs have indeed invested in green technologies, while their use of

green technologies as selling points shows how they connect investments in more environmentally friendly technologies to economic gains. The same can be seen from Flåm AS' mention of climate goals and zero emissions as part of the company's development strategy. The core of green technology logic is in fact that economic growth may be decoupled from negative environmental impact by using green technologies. Thus, seen from an economic logic point of departure, the green technology logic promises solutions to the local environment–economy conflict. Yet, other solutions, following other logics, are also being discussed. The idea of changing business model from large-scale tourism to more exclusive experiences lives on among local activists and niche tourism businesses.

#### **4.2.3 Creating regulatory pressure for green restructuring**

After the Nærøysfjord and the Geiranger fjord gained UNESCO World Heritage status in 2005, a local council was set up to manage the heritage area. Following the local protests, the World Heritage Council for the West Norwegian Fjords contacted the national Maritime Authorities, asking for a regulatory solution to local environmental issues stemming from ship traffic. The Council thus used their position at the intersection between several fields to work for institutional change. A report on pollution from ships in the World Heritage Fjords was requested. As the report documented high levels of NO<sub>x</sub> and SO<sub>x</sub>, and periodically high emissions of greywater and blackwater from cruise ships (Sjøfartsdirektoratet, 2017), government asked the Maritime Authorities to develop a regulatory framework. In June 2018, regulations were passed to phase in gradually stricter emission requirements for NO<sub>x</sub>, SO<sub>x</sub> and greywater until 2026.

In the process of developing these regulations, actors from the Flåm tourism industry were invited to give input. In their input, Aurland municipality emphasised that

environmental regulations must not damage local livelihoods and pointed out that special requirements for one geographical area might distort competition. This emphasis on economic concerns reflects the economic logic of the local tourism industry field. This also resonated with the Maritime Authorities, who participate as much in the industry policy field as in the environmental policy field; this is exemplified by the cost-benefit analysis conducted when preparing the regulation. The compatibility between the goals of the Flåm tourism industry field and the logic of the Maritime Authorities eased Flåm actors' institutional work in shaping this regulation.

However, the Maritime Authorities' regulation turned out to be less important than expected as the issue had entered another field. Just a month prior to passing the Maritime Authorities' regulation, May 3<sup>rd</sup>, 2018, Parliament voted that all ship traffic on the World Heritage Fjords should be zero emission by 2026 (Meld St. 41 (2016-2017), Prop 253 S (2017-2018), Decision 672). The decision stems from a motion proposed during The Standing Committee of Energy and the Environment's treatment of the national climate strategy. Flåm actors did not follow the climate strategy process, while maritime industry actors had been working actively for their sector to be included in the strategy. This largely involved promoting green technology logic in the national environmental policy field. Accordingly, the strategy whitepaper contained several measures for further green technology development in the maritime sector. In the hearing, both companies and the NGOs Bellona, Greenpeace and Zero argued for increased support for the development of green maritime technologies. Tourism traffic on fjords was not central in the discussions of the strategy. Only the NGO Zero alluded to the issue, suggesting that government should *“set emission requirements and limit access to fjords for all ships with high*

*emissions, so as to achieve emission free fjords by 2025”* (Hearing document, March 12<sup>th</sup>, 2018).

In the plenary debate preceding voting, green technology in the maritime sector was given significant space by six different parliamentarians, reflecting a combination of successful institutional work and past technology development by maritime industry actors (Sjøtun, 2019). The adverse effects of cruise traffic in the fjords were also mentioned three times, without any reference to the documentation from the Maritime Authorities. This indicates that the zero-emission requirement was developed independently from the Maritime Authorities’ pollution regulation, and that some parliamentarians rather had picked up on local conflicts over cruise tourism. In other words, the temporary overlap between the Flåm tourism industry and national policy fields, created by the institutional work of Flåm protesters, contributed to lifting the world heritage fjords and the cruise industry as areas of political intervention at the national level. This impact was also mediated by NCE Maritime Cleantech and the NGO Zero, who invited the Standing Committee on Energy and the Environment to a seminar on emission free fjords and maritime sector (“Utslippsfrie fjorder og maritim sektor”), featuring The Fjords’ hybrid sightseeing vessel, three weeks prior to the Parliamentary voting.

#### **4.2.4 Local responses to the changing pressures from national policy**

As the decision was made public, Flåm actors did institutional work both in the local field and in fields centred at the national scale. In the beginning, the comments in the local newspaper focused on the risk of economic losses, reproducing the Flåm tourism industry fields’ economic logic. In national media the mayor sought a balance between the goals of the national-centred environmental policy field, and the multiple goals of the local field.

*“We are very positive to stricter requirements and reduced emissions, but it is important to us that the requirements be valid nationally so that they will not distort competition. [...] the measures should be national. Then you will have real effect...”* (Mayor in Nationen, May 8<sup>th</sup>, 2018, p. 10).

Later, companies from the Flåm tourism industry field started doing institutional work too, arguing in line with the goals of the national environmental policy field, such as in this opinion piece in Sogn Avis May 19<sup>th</sup>, 2020 (p. 3):

*“A zero-emission requirement only for the world heritage fjords by 2026, as Parliament surprisingly decided May 3<sup>rd</sup> 2018, does not save the environment. The Maritime Authorities want to postpone and have similar rules for all fjords by 2030. This is a wise judgment. [...] A complete prohibition by 2026 means that cruise ships will go to nearby fjords such as Vik and Eidfjord, and thus there will be no environmental gains.”*

Following the Maritime Authorities’ advice, a new motion was proposed, suggesting that the zero-emission requirements be postponed to 2030. In the hearing November 10<sup>th</sup>, 2020, Flåm actors continued ascribing to the environmental policy field’s goal of greening industry. They also continued drawing on the Maritime Authorities’ report and allied with Bellona and actors from Geiranger, another important cruise destination in the world heritage area. Collaboration with actors who are trusted within the field they aimed to influence and efforts to organise across lower-scale fields, are two strategies for actors embedded in lower-scale fields – like Flåm tourism industry actors – to strengthen their legitimacy and influence in higher-scale fields. In addition, they referred to their own initiatives for greening the local tourism industry, including hybrid and electric sightseeing vessels, the Environmental Port Index, the grant achieved for investing in a shore power system for cruise ships and

plans for electric bus infrastructure, thus showing that they act in line with the environmental policy field's goals.

At this stage actors from both the Flåm tourism industry and the maritime industry fields argued in line with the green technology logic, claiming that their initiatives and their wished-for regulation would contribute to achieving a combination of environmental and economic goals. Maritime Cleantech actors argued that a zero-emission law for the World Heritage Fjords would create a new market for green maritime technologies, while Flåm actors argued that such a law would not lead to investments by cruise companies, but simply leave Flåm and Geiranger without tourists and hamper local investment in green technologies.

During the Parliamentary debate February 25<sup>th</sup>, 2021, the majority of the speakers emphasised the importance of the zero-emission requirement for technology development in the maritime sector. Thus, the overlap between the environmental and industry policy fields, which has eased the maritime sector's work for a green technology logic in these national policy fields, clearly emerged from the debate. Several Parliamentarians also stated that Government should support local environmental initiatives as Flåm AS has invested in green technologies. Accordingly, it was decided that the zero-emission requirement will take effect in 2026, but that government shall support local environmental measures. Specifically, public support for shore power will be upheld. The opportunity for charging in Flåm is thought to increase the feasibility of sailing the Nærøyfjord with zero emissions, thus easing technology development while allowing Flåm to continue receiving ships. However, it is still not known whether this will be feasible. A failure to continue business as usual with clean technologies might challenge the green technology logic in the Flåm tourism industry field, again changing the field's future trajectory.

## **5 Discussion and conclusions**

The ongoing green restructuring of the Flåm tourism industry is intertwined with institutional logics in different social fields. Not only do some logics make green restructuring a priority while others do not, but different logics also imply different approaches to greening. The choice to invest in green technologies follows the logic that green technologies make reduced environmental impact possible without drastic changes to the ways of doing business. Logics and practices have changed in parallel. On the one hand, the green technology logic increases actors' attention to environmental issues and potential technological solutions. On the other, investing in green technologies provides demonstrations of green technologies functioning in practice (Sjøtun, 2019), and also shapes actors' perception of what they are doing and leads to vested interests in a certain development, thus contributing to promoting green technology logic.

A growing foothold for green technology logic across fields emerges. Multiple actors have played an important role in creating this green restructuring trajectory through their institutional work. The local protesters challenged the prevailing economic logic in the Flåm tourism industry field, destabilising its dominant position. The tension within the field created an urgency for action, which contributed to making business collaboration with maritime industry actors attractive. In turn, actors from the maritime industry field promoted green technology logic in the Flåm tourism industry field, but also in national policy fields – which could all contribute to creating new markets for their technologies. When the green technology logic was coupled with the environmental policy field's goals of environmental protection and maintaining Norway's obligations towards UNESCO, this resulted in a proposition directly impacting the Flåm tourism industry. In their institutional work to change

this specific proposition, Flåm actors needed to argue and work in ways that resonated with the goals and priorities the national environmental policy field. Consequently, through their own institutional work towards the national environmental policy field, Flåm actors increasingly adopted green technology logic. Field overlaps have been important in the institutional change shaping the green restructuring of the Flåm tourism industry. Such overlaps have been created 'by chance', such as with the anti-cruise protests gaining attention in the national environmental and industry policy fields, and intentionally, as when maritime industry actors entered the Flåm tourism industry field. A tendency towards stronger impact from higher-scale fields on lower-scale fields can be observed, not only in the case of policy fields, which have jurisdiction over lower scale fields, but also from how the maritime industry and national environmental policy fields adopt logics from the global green technology field, which is first and foremost a discursive field without formal sanctioning power. Accordingly, actors have also used the scalar relationships between fields strategically in their institutional work, referring to or involving higher-scale fields to legitimise their goals or logics. This shows how the impact of scale can be used.

In addition to successful institutional work where actors have found compatibilities between logics and strategically created overlaps between fields at different scales, the spread of green technology logic can also be attributed to the character of the logic itself. Its hybridity with mixed economic, environmental and technological goals allows for co-existence with different logics, which eases the spread of this logic. Furthermore, it proposes a combined solution to two challenges that are high on many agendas, also in the Flåm tourism industry field – economic growth and environmental problems.



Although the green technology logic suggests win-win solutions, the case of Flåm and the zero-emission requirement indicates that this is not necessarily so. Both maritime industry, the Flåm tourism industry and national politicians see opportunities in green technologies. However, the conflict over the zero-emission requirement shows that transition done through the use of clean technologies is unlikely to be equally advantageous to everyone. Nor is it given that so-called green technologies can solve our environmental problems on their own. As all production requires energy and material inputs, real transition also requires changing practices beyond switching technologies (Alexander & Rutherford, 2019).

With the decision of February 2021, the most likely medium-term consequence for Flåm will be a dramatic reduction of cruise tourists compared to pre-covid-19 levels. Whether this will change in the longer run depends both on technology development and the priorities of the cruise companies. Will they invest in new technologies only to sail the world heritage fjords? Whether actors in the Flåm tourism industry choose to trust in technology development or reduce risk by changing their business model is also yet to be seen, not least as covid-19 has been wearing on local investment capital while also unveiling the vulnerability in tourism dependence. The choices of actors both in the local tourism industry field and in the wider tourism industry will determine the practical consequences of the policy. Thus, despite significant efforts and relative success with institutional work, the outcome is not given.

The multi-scalar social field approach applied in this paper has shown that the green restructuring of tourism industries is strongly intertwined with changes in institutional logics. Focusing on institutional logics within social fields adds to the understanding of how and why green industry restructuring plays out empirically. The approach also draws forth the agency behind green restructuring of tourism

industries as actors work to gain legitimacy for their goals and practices within relevant social fields. By combining the notion of social fields with institutional logics and scale, it emerges that some actors shape the priorities within a field more than others not just as a result of their different positioning within the field, as was often Bourdieu's main focus, but that this also depends on the interplay between the logic they promote and the dominant logic within the field, and whether they are able to create fruitful overlaps with fields at higher scales. However, a too strong emphasis on institutions and agency might overshadow other factors influencing green restructuring processes, particularly technical and financial aspects. In the case of Flåm, further green restructuring through technology depends on the technical and financial feasibility of zero-emission cruise ships. This indicates that the explanatory power of the approach can be strengthened by more thoroughly incorporating the technical side of green technology development, which may diverge from the goals and imaginaries of the involved actors.

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# The relatedness of knowledge combinations—a micro perspective

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## Abstract

It has long been argued that knowledge combinations are key for innovation and industrial development. In evolutionary economic geography (EEG), knowledge combinations have typically been conceptualized and investigated through the notion of relatedness, usually operationalized through industry classification schemes. This paper aims to expand EEG's static and 'flat' understanding of knowledge combinations. We do so by taking a micro perspective on individuals' knowledge practices, building on the concepts of social fields, knowledge domains and cognitive frames. Through this approach the article contributes towards a more fine-grained understanding of relatedness, drawing forth the multi-dimensionality and dynamism of place-based knowledge combinations.

**Keywords:** Related variety, knowledge combinations, cognitive frames, knowledge practices

## 1. Introduction

Influenced by the axiomatic understanding of innovation as 'new combinations' (Schumpeter 1934), knowledge combinations have gained a central place in evolutionary economic geography (EEG) research, which posits that such combinations arising in geographical spaces are key for understanding innovation and industrial development. Linked to this, the concept of 'related variety' has gained a particularly prominent role (Xiao et al. 2018). This concept encompasses an understanding that the more technologically related sectors there are in a region the

more likely it is that intersectoral knowledge will spill over, thereby spurring regional growth (Boschma & Frenken 2011, p. 188). Hence, a (regional) industry structure where industries are neither too similar nor too different fosters innovation (Asheim et al. 2011, Frenken et al. 2007). This thesis has influenced a great deal of research in EEG on the spatiality of related knowledge combinations (e.g. Aarstad et al. 2016, Content & Frenken 2016, Grillitsch et al. 2018, Neffke et al. 2018), which has provided, inter alia, important insights into knowledge combinations for the development of clusters and agglomerations (Frenken et al. 2007, Njøs & Jakobsen 2016).

However, EEG research on the relatedness of knowledge combinations has tended to assume that some industry sectors possess related knowledge that is ‘ready’ to be combined (Frenken et al. 2007). The focus has been on meso-level industry compositions (typically, SIC and NACE code categorizations of regional industrial activities), i.e. an *a priori* ascription of micro-level knowledge practices (Content & Frenken 2016, Fitjar & Timmermans 2017, Wixe & Andersson 2017). Thus, in spite of EEG’s origin building on finer-grained understandings of knowledge (e.g. the concept of cognitive proximity (Nooteboom 1999)), the relatedness literature is yet to provide nuanced understandings of knowledge practices. Hence, it can be argued that the EEG perspective on knowledge combinations is ‘static’ and ‘flat’ (Ingstrup & Menzel 2019, Kogler 2015, Steen & Hansen 2014). For instance, Content and Frenken (2016) call for better understandings of ‘the hows’ of related variety, i.e. approaches to considering what is related and why. We respond to this call by taking a micro perspective on relatedness, providing a basis for more nuanced and in-depth understandings of knowledge combinations and relatedness. Hence, we move beyond the dominating EEG understanding of firms and organizations as the micro level (Steen & Hansen 2014) by incorporating an approach emphasizing the role of individuals (Punstein & Glückler 2020, Wixe & Andersson 2017) – after all, knowledge is held by individuals (Howells 2012, Lacetera et al. 2004, Nonaka 1994, Nooteboom 2000). Analytically, we draw upon theoretical perspectives from the geography of knowledge literature (e.g., Malecki 2010, Maskell & Malmberg 1999) and cognitive theory (e.g., Nooteboom 2000, Smith & Tushman 2005). This enables us to consider the knowledge domains and cognitive frames of individuals developed through interactive learning in social fields, and how individuals make novel

combinations of practices, thus nuancing the currently flat and static understanding of relatedness in EEG.

To illustrate our argument, we conduct an empirical investigation of two innovation projects in rural tourism development in Western Norway, focusing on the knowledge practices of key individuals and the knowledge combinations that have emerged from their practices. Thus, we set out to address the following theoretical research question:

*What characterizes the relatedness of knowledge combinations leading to innovation in rural tourism industry development?*

Below, the relatedness concept and the associated view of knowledge combinations is discussed. To provide further insight into the relatedness of knowledge combinations, we draw upon the geography of knowledge literature and cognitive theory to develop an analytical framework for characterizing knowledge combinations from a micro-level perspective. This is followed by a presentation and discussion of our empirical investigation in light of this analytical framework to illustrate the relatedness of knowledge combinations at the micro level. Last, we discuss our contribution to the literature and avenues for further research.

## **2. Relatedness and knowledge combinations**

Schumpeter's (1934) understanding of innovation as new combinations is a major source of inspiration for work on relatedness and related variety. Schumpeter's thesis is that innovation entails new combinations of knowledge. Linking this to geographical thinking, it has been argued that accumulation of knowledge in some places, for instance in Silicon Valley (Saxenian 1994), increases the number of potential combinations, and hence innovations. This has explained why regions with knowledge-intensive industries and a larger share of highly educated workers tend to be more innovative and have stronger economies, compared with those that do not (Caiazza et al. 2015, Rodríguez-Pose 2018). Yet the accumulation of knowledge is insufficient for new combinations to occur—knowledge must also be combined (Frenken et al. 2007).

EEG's relatedness approach is based on an understanding that a composition of industries that are neither too similar nor too different is the most favourable for innovation (Frenken et al. 2007). The advantages of related variety for innovation are

primarily explained by the combinability of the knowledge found in adjacent—i.e. related—industries (Asheim et al. 2011). Knowledge from more disparate industries, or unrelated variety, is less combinable, but when successful, such combinations foster more radical innovations (Grillitsch et al. 2018, Xiao et al. 2018).

In EEG, relatedness is usually measured at the regional level and operationalized through industry classification schemes such as NACE codes or SIC, meaning that relatedness is treated as ‘disconnected’ from the knowledge practices of firms in an industry (Fitjar & Timmermans 2017). Therefore, approaching relatedness through *a priori* industry classifications carries with it a static perspective on knowledge (Kogler 2015), causing a certain dissonance between EEG research and its origin in evolutionary theory (Nelson & Winter 1982, Penrose 1959). Consequently, a contradiction between the evolutionary perspective and the dominating meso-level classification of relatedness can be observed, and thus it can be argued that EEG lacks a dynamic and nuanced understanding of the relatedness of knowledge combinations. To address this gap, we argue for closer interaction with the literature on knowledge practices, in turn drawing attention to the geography of knowledge literature and to cognitive theory.

### **3. Expanding the EEG approach to the relatedness of knowledge combinations**

#### **3.1. Perspectives from the geography of knowledge literature**

The spatiality of knowledge has long been a central topic in economic geography (Howells 2012, Malecki 2010). At the core is an understanding that different regions and places have different mixes and dynamics of knowledge, which in turn influence the rates and types of innovation (Asheim & Coenen 2005). A particularly influential stream of literature is that of knowledge bases and the combination of knowledge bases. This literature argues that firms’ innovation characteristics are based on their ideal–typical knowledge bases, distinguishing between analytical, synthetic and symbolic knowledge (Manniche 2012). Analytical knowledge is understood to be developed through formal methods such as scientific research. Analytical knowledge is typically codified and may thus travel well across geographical distance. Second, synthetic knowledge is understood to be produced through practical problem solving, where existing experience-based knowledge is combined and applied in new ways, as

is often done by engineers in applied research and development. Being experience-based, synthetic knowledge may be geographically sticky—and we may add, individualized. Last, symbolic knowledge concerns ‘the creation and communication of cultural meanings, symbols, ethics and aesthetics’ (Manniche 2012, p. 1825), which are key to design and marketing. Symbolic knowledge is developed through creative processes and interaction with people and is highly spatio-culturally embedded. Hence, the knowledge base approach offers a typology of knowledge for innovation and how ‘mixes’ of innovation lead to innovation (Asheim & Coenen 2005). The approach provides insight into the ways in which knowledge is developed and practised; specifically, it emphasizes the possibility of similar practices across industries that are very different in terms of markets, material inputs and technologies. Hence, the knowledge base approach is helpful in explaining similarities in terms of innovation processes across industries that EEG would classify as unrelated.

Furthermore, the broader geography of knowledge literature argues that knowledge combinations vary between places because how knowledge is produced and combined is strongly influenced by social embeddedness (Carvalho & Vale 2018, Fløysand & Jakobsen 2011). This relational understanding of knowledge combinations emphasizes the importance of learning across social networks and geographical settings for stimulating knowledge combinations (Bathelt et al. 2002, Maskell & Malmberg 1999). Consequently, the types of networking practices that promote the combination of ‘local’ and ‘external’ knowledge have gained significant attention (Chen & Hassink 2020, Njøs et al. 2020, Trippel et al. 2018). For instance, external networks have been identified as especially important to firms in rural regions because they often lack the knowledge diversity of urban areas (Jakobsen & Lorentzen 2014). In line with this view, rural actors’ ability to absorb and use knowledge from beyond their regions has received attention (Fløysand & Sjøholt 2007, Isaksen & Trippel 2017), and has been found to vary between firms (Giuliani 2007) and between regions with different industries and innovation systems (Isaksen & Trippel 2017). Thus, the absorption, development and implementation of knowledge is strongly influenced by contextual and interactive practices.

Acknowledging that learning and knowledge development should be considered as interactive processes (Strambach & Klement 2012), understandings of knowledge

combinations need to consider knowing as a *practice* (Grabher & Ibert 2014, Punstein & Glückler 2020), not only as an ‘object.’ Ibert (2007) contributes a discussion of ‘knowledge as an object’ and ‘knowing in practice’ in economic geography. While the former, according to Ibert (2007) concerns knowledge as a property that can be accumulated, categorized and exchanged, the latter view holds that knowing is situated in action, emphasizing the contextual embeddedness and collective nature of knowing. Consequently, from a practice perspective, knowledge transfer across contexts does not make sense. Rather, knowledge must be translated into new practices in a new context (Ancori et al. 2000). While the relatedness perspective inclines towards an understanding of ‘knowledge as an object’, the distinction between analytic, synthetic and symbolic knowledge is based on knowledge practices. Integrating a practice perspective sheds new light both on *what* and *how* knowledge is combined. This, in turn, requires nuancing beyond a priori categorizations of knowledge, taking interactive and cognitive aspects of knowledge practices into consideration.

### **3.2 Cognitive theory**

This section discusses two central aspects of cognition, which shed new light on how knowledge is combined – namely *knowledge domains* and *cognitive frames*. What a person ‘knows about’ marks the person’s knowledge domain (Nooteboom 2000). For instance, a construction engineer knows about materials and construction, while a kindergarten teacher knows about children’s learning and socialization. Thus, they have different knowledge domains. EEG’s measures of industry relatedness most likely indicate the *common knowledge domains* of different industries—related industries often work with the same objects, so workers know about the same things (Fitjar & Timmermans 2017). However, as individuals have different mixes of experiences, everyone has a different knowledge domain (Nooteboom 2000). Thus, one individual’s domain might cover a variety of knowledge that to another individual appears unrelated. However, as it is common to keep different spheres of life separate (Ettlinger 2003)., individuals often only use the skills and knowledge they consider to be relevant in a specific context (Nooteboom 1999), sorting their knowledge in relation to its field of origin. Yet, different people may sort knowledge differently,

thus making different combinations. This depends not only on what people know, but also on how they think about and use their knowledge, that is, their cognitive frames.

In theory, two people may have similar knowledge domains but different perspectives on the same knowledge, thus applying it differently. Cognitive frames provide a lens through which to view a situation (Walsh 1995), shaping the way individuals think about and act upon information (Smith & Tushman 2005). Cognitive frames are developed through past experiences, including processes of collective learning. For instance, people in the same industry can develop shared perceptions that differ from those of outsiders (Abrahamson & Fombrun 1994). Similarly, individuals with different educational backgrounds not only have different knowledge domains but different cognitive frames. This is reflected in differences in approaches to problems, for instance between engineers and industrial designers (Punstein & Glückler 2020) or between engineers and scientists (Gruber et al. 2013).

Each individual has a unique set of cognitive frames developed from past experiences. Owing to variations in cognitive frames, an individual who is new to a field may initially interpret the environment differently from well-established actors. Accordingly, a newcomer's practices may be a source of novel insights and solutions. Cognitive frames are often largely tacit as individuals are not fully aware of thinking in a particular way (Walsh 1995). Consequently, they may bring cognitive frames to a new context without much thought.

### **3.3 A micro perspective on relatedness**

As emerges from the above discussion of knowledge domains and cognitive frames, individuals' knowledge practices develop and unfold in interactive settings in firms and industries, and beyond. This can be approached through the concept of social fields —i.e. 'dense patterns of social relations, marked by a particular time-spatial scale and knowledge production that constrains and enables the agency of actors' (Fløysand & Jakobsen 2011, p. 329). The concept of social fields allows for analytically separating areas of practice while acknowledging individual participation in multiple practices (Sjøtun 2020). Fields may be colocated but retain their separate practices. Yet colocation also facilitates intermingling between fields through the interactions of individuals (Fløysand & Jakobsen 2011). As individuals develop knowledge through interactive practices in various social fields (Nonaka 1994,

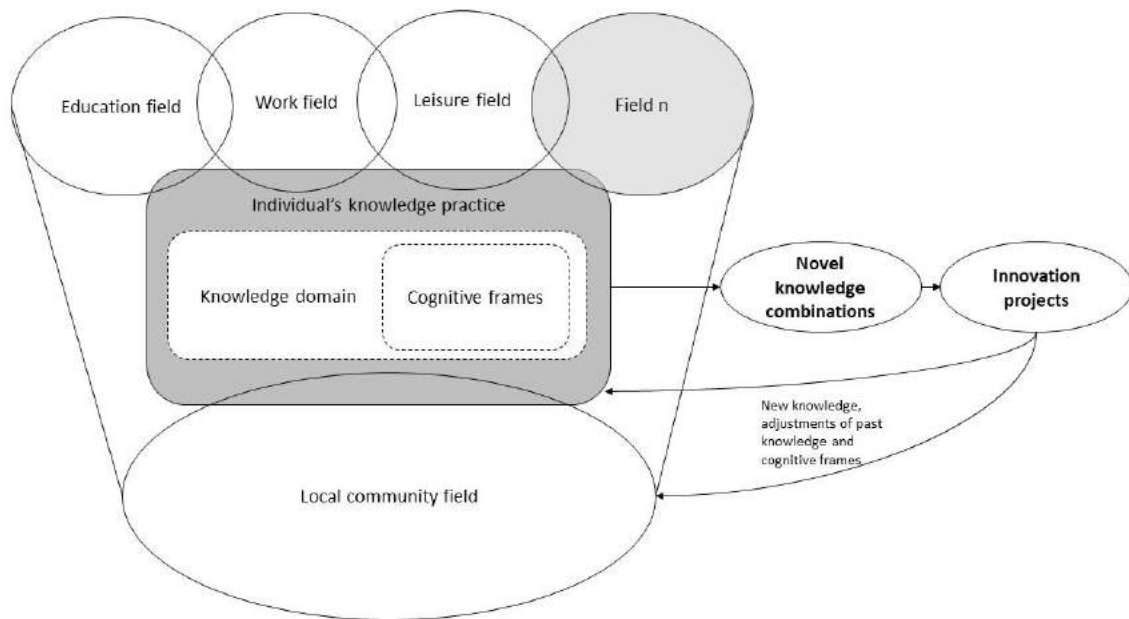


Nooteboom 2000), participation in multiple fields produces unique knowledge practices at the individual and community level, which in turn can influence innovation and industrial development in a particular place (Carvalho & Vale 2018).

The social field concept represents a useful addition to the traditional relatedness literature in EEG (e.g. Frenken et al. 2007), which has focused on industrial activities that at face value are judged to be the most relevant to innovation (e.g. high-technology industries). At the outset, we sympathize with this understanding, as companies in the same industry are necessarily occupied with similar tasks and there tend to be similar ways of operating within an industry (Abrahamson & Fombrun 1994, Malerba 2002, Nilsen & Njøs 2021). Similarly, conferring the knowledge base approach, different professions or educational backgrounds provide different knowledge in terms of what people know about, dominant perspectives and ways of thinking and working (Punstein & Glückler 2020). However, while the relatedness research in EEG has tended to focus on knowledge from education (Mohammadi et al. 2017) and work (Solheim et al. 2020), one should not neglect that knowledge is also associated with other societal fields (e.g. volunteering, hobbies, etc.). For instance, Stebbins (1982) introduced the notion of ‘serious leisure’, referring to social activities that involve ongoing learning and skill development in leisure activities pursued with persistence. Such activities often occur in a milieu of like-minded people. Examples range from amateur art collectors (Elkoff 1970) to hobby photographers who learn technical knowledge (Grabher & Ibert 2014). Some individuals also transform their serious leisure activity into a profession (Løseth 2014).

The concept of social fields allows for distinguishing between multiple practices by the same individual. Accordingly, the fields-approach enables investigation of the differentiated sources of knowledge without losing sight of the individual. By combining the notion of social fields with those of knowledge domains and cognitive frames, we develop an analytical perspective that is sensitive towards interactive knowledge practices and individual knowledge. This emphasis on individual knowledge practices provides novelty as the cognitive aspect of knowledge practice and thus of knowledge combinations rarely has been investigated by economic geographers (Punstein & Glückler 2020), and, to our knowledge, even less so in EEG. Simultaneously, we here consider individuals’ knowledge practices (Ibert 2007) to be

embedded in social fields, i.e. knowledge practices are understood as linked to the context in which they are performed (c.f. Garud et al. 2007). The field concept enables analysis of how individuals bring knowledge across different fields, incorporating past experiences into new practices. Figure 1 illustrates this in a stylized manner, showing how the framework discussed here provides a frame for investigating how knowledge is combined, and, in turn, the relatedness of knowledge combinations.



*Figure 1: Individuals' knowledge development and knowledge combinations in place-based innovation projects.*

#### **4. Methods**

Our aim to draw forth nuances to knowledge relatedness and developing a practice-perspective on knowledge combinations requires a different methodological approach than those based on statistical industry classifications. We needed an approach that allows for connecting the micro-level to meso-level outcomes. Thus, we started from two tourism innovation projects that have played an important role in renewing the economy in two rural locations in Western Norway, then zooming in on the knowledge practices of central individuals. As neither the industry nor the context of such cases has attracted much attention in the EEG literature (Bennat & Sternberg 2020), these cases may be considered unusual and thus suitable for developing new

theoretical insights (George & Bennett 2005, p. 66). The projects were approached from a place perspective, and data gathered on context as well as on the specific innovation processes. The unexpected backgrounds of some of the central individuals in these processes caught our attention. Our abductive process thus led us to focus on these individuals, their backgrounds and the ways they work. Our methodological approach was inspired by ‘innovation biographies’, taking specific innovation projects as the point of departure and mapping the process through narrative interviews, triangulated with contextual observations and desk research (Butzin & Widmaier 2016). Gathering more detailed data on the background and work of key individuals, we moved towards the approach of biographical sociology (Rosenthal 1993), but with a focus on knowledge.

The research started with desk research and eight background interviews, identifying two places where single innovation projects and a few key actors have had a large impact on the local economy. This was followed by further desk research and 10 interviews with actors in the two places. The interviews focused on the place and local economic life, how the place had changed and who had played a central role in creating new economic activities. Four key individuals were identified and interviewed. In the interviews with key individuals, more attention was paid to personal background, especially work and educational experiences. They were also asked to describe the entrepreneurial idea and the process of implementation. As far as possible, information was cross-checked between interviews and other sources.

The data collection and analysis processes were conducted in parallel as our focus on knowledge emerged during data collection. Interpretation and the search for suitable analytical concepts started during data collection but was intensified once all 22 interviews had been transcribed and could be coded. In the movement between empirics and theory, it emerged that the micro-level data allowed a detailed understanding of individuals’ knowledge practices and how this sheds new light on EEG’s understanding of knowledge combinations.

## **5. Two innovation projects**

This section presents two tourism-related innovation projects from rural Western Norway. Western Norway is home to many of Norway’s export industries, and tourism is no exception. In 2019, foreign visitors spent 2,400,000 nights in commercial accommodation in the region, from a total of 10,450,000 nights spent in

Norway (SSB 2021). This indicates incomes of approximately € 1 billion a year. Some locations in the region have a larger share of these visitors. For instance, Flåm, a village of approximately 350 inhabitants, receives a million annual visitors, and Odda (approximately 7000 inhabitants) received approximately 100,000 annual visitors prior to the COVID-19 pandemic.

The first project investigated here is how the Trolltunga rock formation was made a major tourist attraction. Trolltunga is located 14 kilometres into the mountains near Odda. Since it was industrialized, Odda has long been considered one of the least attractive places in the region (Swaney & Berry 1999, p. 249). By making Trolltunga a major attraction, with the number of visitors increasing from 1000 in 2009 to 90,000 in 2018, Odda and surrounding villages saw a dramatic surge in visitors, leading to demand for accommodation, restaurants and shops.

The second project we investigate is how a railway line constructed in 1941 triggered the development of Flåm as a tourism destination. In the 1980s, many branch lines became superfluous. When the mayor understood that the local railway risked being taken out of operation, he initiated a project to transform it into a tourism attraction. The success of the project depended on investment in important infrastructure, in particular a cruise terminal in Flåm. Since the late 2000s, the business has been significantly improved through new routines and strategic investments. Prior to the COVID-19 crisis, Flåm had about a million visitors a year, and the company managing the historic railway had a turnover of around €21,700,000 in 2019.

Individual entrepreneurs have been important for the development of these projects. As mentioned above, four key individuals (two in each case) were identified. In the section below, the work of these four people and the way they combined knowledge from past experiences will be discussed. They will be referred to as Trolltunga 1 (T1), Trolltunga 2 (T2), Flåm 1 (F1) and Flåm 2 (F2).

## **5.2. Trolltunga**

T1 and T2 had different roles in making Trolltunga an important tourist attraction. Without knowing about each other they started promoting Trolltunga around the same time, then joined forces later.

T1 is a civil engineer. He has worked in the construction sector, including several years in a fast-growing engineering consultancy start-up. He was sought out as a co-owner for a hotel in Odda owing to his technical construction expertise. The hotel had a sustained lack of customers, which caused economic problems. T1's approach to this problem bears clear signs of cognitive frames developed through experience in the engineering field, where problems are identified and deciphered, and possible solutions are trialled. He deduced that the lack of customers was caused by a lack of reasons to visit Odda for more than a short stop. Consequently, solutions would entail reasons to a) go and b) stay the night. He sought an attraction involving an activity that was time consuming or exhausting. By these criteria, the 10-hour hike back and forth to Trolltunga stood out. Another solution fulfilling the same criteria was a via ferrata.<sup>1</sup> Only foreign tourists are willing to pay for hiking guides, while Norwegians and foreigners alike do pay for climbing guides. Thus, the combination of the two activities made a viable business case.

These two solutions were drawn from knowledge that T1 had gained through serious leisure. He is an active climber and mountaineer and has vast knowledge of the hiking and climbing conditions in the local area. Thus, he knew about Trolltunga, and about which mountains are fit for climbing and what kind of experiences climbers may expect. This was key to building an interesting via ferrata, and to attracting attention to it. He explains:

*And I was active in the climbing milieu here, and so it was actually a way of finding activities that I liked, and I thought that if I liked it maybe other tourists would like it too, and if they had something to do, they would also need a place to stay.*

T2 worked for the regional destination marketing organization (DMO). When starting the job, he found the marketing work of the regional DMO to be less successful than it could be. While the modus operandi had been to give all the member businesses and municipalities equal advertising space, T2 claimed that marketing theory indicates that it is easier to attract attention by focusing on one attraction.

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<sup>1</sup> *Via ferrata* (Italian) means iron path and refers to steep mountain paths equipped with fixed ladders, cables and bridges.

*We wanted to change what was the message from Hardanger [the region], relative to what has an effect [...]. We wanted something that would catch attention, really, and then we found Trolltunga.*

The DMO decided to use images of Trolltunga on all their materials for the 2009 season, around the same time that T1 started selling guided tours to the rock formation. T2 also involved the national tourism promotion organization, which spread images of Trolltunga in its networks, reaching the front page of National Geographic Traveller and billboards in Times Square.

T2 has studied economics and marketing and has worked in diverse sectors, including tourism, metallurgy and the public sector. The strategy of using Trolltunga as a flagship attraction was informed by the ‘attention, interest, desire, action’ (AIDA)-model, where grabbing attention is considered the first step towards sales. This was taught in business schools when T2 was a student. Thus, T2 used knowledge directly from his marketing studies to change the DMO’s approach. Experience in the tourism industry field was also important as it facilitated good use of the national tourism promotion system, which was crucial in the success of the campaign. In addition, cognitive frames from different industries led T2 to take a more results-oriented approach than his predecessors in the DMO. Furthermore, experience of multiple cognitive frames in different industries most likely facilitated his challenging of established norms and practices and introduction of new ones:

*There was relatively strong resistance to using Trolltunga so massively. ... [The strategy] is not fair, right. It is not, and it is not supposed to be. As a destination marketing organization, we should do what is best for the companies in the destination based on what we believe is right from a marketing professional perspective.*

There are also important complementarities between the knowledge of T1 and T2. T1 had knowledge of the mountains around Trolltunga, which was essential in determining whether and under what conditions the hike was realistic for visitors. On the other hand, T2 had more specialized marketing competences from his education and more knowledge of the tourism industry. Thus, the dynamics between the knowledge domains and cognitive frames that the two entrepreneurs had developed through their participation in different professional, educational and leisure fields contributed to making Trolltunga known to the world and an attainable experience

for visitors. Thus, the case exemplifies how novel knowledge combinations are made through individual and interactive knowledge practices.

### **5.3. The Flåm Railway**

F1 and F2 have been key to making Flåm one of Norway's most successful destinations. The two entrepreneurs played different roles at different times. While F1 is often considered to be the ideator and initiator of the Flåm tourism development, F2 has been central in making it economically successful.

F1 chose some non-traditional solutions when working to save the local train connection. He was mayor at the time and convinced the rest of the municipality and the local bank to establish a tourism development company, and the national railways to continue operating the Flåm line as a tourist business. In this effort, he used knowledge gained through different political experiences. He had experience of activism as well as 12 years of experience in the municipal council and several years as mayor. Strong local networks were also important in uniting different actors around a common solution. Striking a deal with the national railways, and later with Siva<sup>2</sup> and the county, required both strategic and communication skills, which may also be tied to experience and cognitive frames from the political field. The informant explains that:

*There was an investor group that expressed interest. ... In principle, it was wrong to privatize the whole area. ... I tried to explain this to [the director of Siva]. Even though he was new to the tourism industry he got the point. And the happy outcome was that we parked the investor group and got Siva on board.*

Furthermore,

*Regarding the cruise terminal ... What happened was that competing projects emerged here and there around the fjord, and it seemed that strength in numbers would decide. Then I made a similar decision as after visiting the regional railway director in Bergen, and I said that now we go home and put*

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<sup>2</sup> A public company that develops, owns and finances national infrastructure for innovation and industry development.

*on turbo gear and send the application for regional development funds. And it worked.*

As seen from the above quotes, experience from past cross-roads was activated when F1 found himself at a new one. It emerges that at several decision points, success had depended on being convincing and timely. Throughout his years in local politics, F1 had developed cognitive frames for problem solving where a plan was required to unite local interests. It is necessary to see opportunities, know when to act, be willing to compromise but never lose sight of the goals, and be aware that there are often multiple solutions. Putting this into practice depended not only on personal skills but also on combinations of tacit knowledge and cognitive frames gained through long experience in the political field along with new knowledge about the task at hand in the tourism industry.

F2 developed the public tourism company founded by the municipality into one of Norway's most successful tourism businesses. This was achieved by investing the incomes from the Flåm railway in other parts of the business, significantly strengthening the sales department, creating their own online booking infrastructure and increasing the diversity and quality of the products. F2 has studied economics and has 20 years of sales experience in the agrochemical industry. When she joined the board, and later when she became CEO of the tourism development company, she approached tourism business with cognitive frames developed through experience in a heavy industry field. From her large-scale industry perspective, certain unused opportunities and weaknesses in the company operations stood out. In particular, she found that the company had been somewhat gullible in the face of B2B customers:

*If you don't understand the culture in the international market, they will trick you. ... First, they haggle over the price, then they quarrel about the invoice and in the end, they don't want to pay after all. So, you must understand these mechanisms.*

Using her knowledge about international sales, she made the company less susceptible to downwards price pressure. Following the large industry model, the sales section was strengthened to target international cruise companies and tour operators systematically.



*When you work internationally you don't get an effect from sales for at least three years... So, we are targeting cruise and tour operators and have a large sales department that works over the long term, has customer meetings and follow them up.*

Cognitive frames from her industrial experience are also apparent in the strategy where the solid part of the business (the Flåm railway) finances new developments and quality improvements in other sections of the company, and to improve the overall experience by investing in digital and physical infrastructure, including public spaces. This economic large-scale perspective differs from the usual approaches of Norwegian tourism destinations, which tend to focus on marketing rather than on sales and customer relations. Thus, F2's cognitive frames developed in the agrochemical industry contributed significant novelty to the development of the Flåm tourism business.

While neither the agrochemicals industry nor political activities are related to tourism, cognitive frames developed in these two fields are reflected in the work of the two entrepreneurs. The ideating and initiating work of F1 is similar to the visionary work of a politician or activist, while F2 used experience from daily operations in heavy industry to significantly change the operations of the Flåm public tourism company. The two entrepreneurs thus drew upon knowledge and cognitive frames developed through practice in specific fields. Although the fields are different from tourism, the specific tasks and the two entrepreneurs' solutions reflect their respective experiences.

## **6. Discussion**

The investigation of the two innovation projects shows that entrepreneurs bring with them and combine knowledge from diverse past experiences into the local tourism industry. The cases show two main modes of combining knowledge across fields. The first is to translate knowledge from one field into another. This is exemplified very well by F1's use of political experience in the tourism business and F2's application of knowledge gained in the agrochemicals industry to make Flåm a commercially successful destination. In these cases, previous knowledge from a specific field is combined with newly acquired knowledge of the tourism industry. The other main mode is the combination of knowledge gained through practice in different social

fields. This is seen in T1's combination of knowledge from climbing and hiking with engineering perspectives. For T2, it also seems that diverse work experiences were valuable in overcoming obstacles to moving knowledge across fields. Having multiple frames of reference allowed conscious comparison of his own cognitive frame to the prevalent ways of thinking in the DMO.

The cases show that the opportunities and solutions different people see depend on their knowledge and perspectives (Vang et al. 2021). It emerges that both domain knowledge and cognitive frames are important. In the case of T1, it may even be argued that it is first and foremost the cognitive frame that made Trolltunga a novel attraction, and this cognitive frame acquired in the engineering field was applied separately from domain knowledge from that field. In the other cases, it is more difficult to separate cognitive frames from the entrepreneur's knowledge domain. Yet the novelty introduced by different cognitive frames also stands out in the work of T2 and F2.

Knowledge domains and cognitive frames are shaped but not determined by people's participation in different social fields. Knowledge is gained not just from work and education, but also from other fields. For instance, knowledge gained through serious leisure (Stebbins 1982) in non-work fields was central to the endeavours of T1, while F1 used practices developed through participation in local politics.

Knowledge combinations for innovation depend not only on knowledge domains and cognitive frames developed from past experiences, but also on context and situation. Individual choices are informed by past experiences, but they also depend on the situation and on personal characteristics such as motivation and creativity. The two innovation projects responded to specific situations in specific places: a need for more tourists at the new hotel in Odda and a need to save the railway connection to Flåm (Bækkelund 2021). The entrepreneurs also used place-specific assets such as the historic railway in Flåm and the Trolltunga rock formation near Odda. Thus, the innovation projects cannot be considered separately from their contexts, not only because of context-specific issues and assets, but also because the novelty and usefulness of knowledge combinations is context dependent.

## 7. Conclusions

Our investigation of the knowledge combinations of the four entrepreneurs shows that there can be large discrepancies between what, from an EEG perspective, are 'expected' knowledge combinations following industry relatedness, and real-life knowledge combinations. As shown, the practice-oriented field approached employed in this paper gives a richer understanding of 'the hows' of knowledge combinations (Content & Frenken 2016), showing that knowledge is a matter not only of what one knows but also of cognitive frames and practices in context.

Through three main findings our investigation contributes towards the EEG literature with a more fine-grained understanding of relatedness. First, entrepreneurs may translate knowledge across sectors that are not a priori considered related. It follows that unrelated knowledge combinations may not only be associated with radical innovations but may be more common in low-tech industries or in any kind of innovation that relies more on a new perspective or an original idea rather than on technical knowledge alone.

Second, economically useful knowledge may be found outside industry. For a theory that puts knowledge centre stage, the almost exclusive focus on industry is a notable blind spot. Going beyond the factory gate (Maskell 2001) and investigating individuals' knowledge practices has allowed the variety of knowledge in innovation to be teased out. This also means that geographical variation goes beyond the industry mix. Thus, a knowledge perspective calls for approaches that are attentive to local social practices.

Finally, the importance of cognitive frames suggests that we need to move beyond the 'knowledge as object' perspective that is so common in the relatedness literature (Ibert 2007). This finding indicates that the relatedness of knowledge varies in multiple dimensions (Tanner 2014). While the common conceptualizations of relatedness may capture the relatedness of technical domain knowledge quite well, cognitive frames may also be related to some extent. As cognitive frames are highly individual and developed through practice in industry and other fields, it is difficult to develop clear expectations concerning the innovation impact of variation in cognitive frames. However, the cases indicate that thorough socialization in one field before moving to another may influence novelty from cognitive frames, pointing towards patterns of cross-field interaction as a potentially useful entrance point to

idea-based innovation. Thus, the simplified ‘related’ and ‘unrelated’ thesis proposed by EEG may be more complex than presumed by the literature.

The findings of this paper imply that unrelated knowledge combinations, as understood in EEG, may be more common than previously thought. In addition to radical technical innovations, they may be associated with less technically advanced innovation where the knowledge behind the idea is the key to novelty. To our knowledge, this observation has not been investigated throughout, but it is consistent with previous findings that relatedness is associated with innovation driven economic growth, especially in technology-intensive sectors (Content & Frenken 2016). As such innovations are less likely to be registered through patents or to be captured by innovation surveys, further investigation of this observation should be done through the use of mixed methods. Focusing on low-tech innovations and the backgrounds of the people involved is promising and might be done qualitatively through innovation biographies or quantitatively with innovation outcome as the dependent variable and individual past experiences as the independent variables. With such approaches, the complexity of knowledge relatedness will move further beyond the factory gate.

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