



## Towards regenerative regional development in responsible value chains: an agentic response to recent crises

Markus Grillitsch & Björn T. Asheim

**To cite this article:** Markus Grillitsch & Björn T. Asheim (04 May 2023): Towards regenerative regional development in responsible value chains: an agentic response to recent crises, European Planning Studies, DOI: [10.1080/09654313.2023.2205890](https://doi.org/10.1080/09654313.2023.2205890)

**To link to this article:** <https://doi.org/10.1080/09654313.2023.2205890>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 04 May 2023.



Submit your article to this journal [↗](#)



Article views: 1842



View related articles [↗](#)



View Crossmark data [↗](#)

# Towards regenerative regional development in responsible value chains: an agentic response to recent crises

Markus Grillitsch <sup>a,b</sup> and Björn T. Asheim <sup>c</sup>

<sup>a</sup>Department of Human Geography & Centre for Innovation Research (CIRCLE), Lund University, Lund, Sweden; <sup>b</sup>Inland Norway University of Applied Sciences, Lillehammer, Norway; <sup>c</sup>Centre for Innovation Research, University of Stavanger Business School, Stavanger, Norway

## ABSTRACT

In this paper, we empirically and theoretically present regenerative regional development in responsible value chains as an alternative to the prevailing traditional, neoliberal economic rationale of globalization. We develop the argument on the back of a longitudinal in-depth case study on actors' engagement in the recurring crises in the maritime industry in Sunnmøre/Norway. The alternative perspective is an agentic response from the business community in the wake of recent crises. It builds on advanced manufacturing capabilities, automation and precision technologies, which promise local economic regeneration while reducing the reliance on low-cost labour, substantially cuts emissions through reduced long-haul transport, use of green energy and more energy-efficient production processes. To succeed, however, it calls for policies that promote the building of local capabilities and penalize practices causing environmental and social harm in global value chains, making it possible to move towards responsible and shorter value chains.

## ARTICLE HISTORY

Received 6 October 2022  
Revised 27 February 2023  
Accepted 11 April 2023

## KEYWORDS

Regional resilience; sustainability transformation; human agency; global value chains; automation and industry 4.0; industrial and innovation policy

## JEL classification

R10; R11; R50; R58; O30

## 1. Introduction

In this paper, we empirically and theoretically present regenerative regional development in responsible value chains as an alternative to the prevailing traditional, neoliberal economic rationale of globalization. We show that this alternative perspective holds potential to address many societal challenges, including local economic development beyond the cities, substantially cutting greenhouse gases and securing supply chains. The alternative perspective is an agentic response to recurring crises in the maritime industry in Sunnmøre in the western parts of Norway, where we studied regional economic resilience and transformation.

Understanding, explaining and affecting regional economic resilience and transformation has become more important in recent years than a narrow economic growth

---

**CONTACT** Markus Grillitsch  markus.grillitsch@keg.lu.se  Department of Human Geography & Centre for Innovation Research (CIRCLE), Lund University, Sölvegatan 10, 22362 Lund, Sweden; Inland Norway University of Applied Sciences

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group  
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

perspective. Regional economic resilience relates broadly speaking to the ability to absorb and respond to economic shocks, and its popularity may relate to the ‘increased sense of risk’ (Christopherson, Michie, and Tyler 2010, 3) that the many crises in recent years entail. In economic geography, many differentiate between short-term adaptations within existing development paths and long-term adaptability of economic structures towards new development paths (Boschma 2015; Grabher 1993; Martin and Sunley 2014). The latter implies structural change and is thus related to the concept of transformation. Transformation is about the changing of production and consumption patterns to achieve a greener and more inclusive economy and society (Schot and Steinmueller 2018). While both long-term adaptability and transformation thus require structural change, the latter differs from the former in the directionality implied. Resilience has been studied mainly in relation to discovering new growth paths, but transformation is about building a sustainable future. Transformation refers to the deep and long-burning crisis of climate change and inequalities, which differs from other short- or medium-term crises such as the financial crisis 2008 or Covid-19. In this paper we capture these differences with the notions of bouncing back (short-term adaptation), forward (long-term adaptability) and beyond (transformation).

We have studied the bouncing back, forward and beyond in the case of the maritime industry in Sunnmøre in the western parts of Norway. The maritime industry has a long history originating from the demand for reliable boats for the fishing industry and later developing a highly profitable market niche in service vessels for oil and gas operations in the North Sea. In recent years, the local maritime industry went through several crises. In the end of the 90s, it was questioned whether it was possible to compete with low-cost countries. After the drop of the oil price in 2014 the demand from the oil and gas industry collapsed, and Covid-19 interrupted the demand for cruise ships. We have captured the latest crises, actors’ engagement in responding to the crises, and the intended and unintended outcomes of such processes through interviews conducted at three points in time (2014, 2019 and 2021/2022) and a comprehensive analysis of secondary data. This paper focusses on our findings from our last interviews when we could learn about the outcomes from the actions taken after the 2014 and 2019 crises. High investments in new markets after 2014, including the green economy such as hybrid ferries and the offshore wind sector, but also the cruise market did not turn out to be sufficiently profitable, which led to a restructuring but also new visions for the future.

Most interestingly, we found two contrasting rationales for future development: (i) a traditional, neoliberal economic rationale of globalization and (ii) a progressive rationale combining regenerative regional development with responsible value chains. After the crises and the limited/negative financial return of diversification into new (and partly green) market niches, many of the stakeholders highlighted cost-efficiency as the important main rationale in the global economy, the low cost-competitiveness of Norway, the importance of oil and gas for survival, and a conservative view on sustainability essentially meaning that the maritime industry has for long aimed at increasing fuel-efficiency of vessels. Contrasting to this, we found that some actors have developed a new rationale: To produce locally using automatization technologies (industry 4.0) and green energy. The added value is radically reduced greenhouse gas emissions, increased production and innovation capabilities, and higher value creation locally.

While having received their first orders, these actors, however, struggle because procurement procedures do not adequately consider externalities: greenhouse gas emissions, the benefit of increased local capabilities and value creation, and the exploitation of low environmental, labour, and social standards elsewhere, as well as increased geo-political tensions (e.g. war in Ukraine).

These empirical findings are practically and theoretically provocative as they point at fundamental downsides of globalization and the neoliberal ideology, and offer an alternative. We thus attempt a substantial theoretical discussion on how a contrasting development rationale would be possible that combines regenerative regional development with responsible value chains. This alternative rationale combines insights from innovation studies where innovation and production capabilities in manufacturing industries are closely related and where territorially anchored small and medium-sized companies have weathered global competition, and insights from studies on the reasons and effects of re- or back-shoring. We then discuss elements of policy interventions, which are important for shifting the balance from the unsustainable traditional to the progressive rationale of regenerative regional development in responsible and shorter value chains.

## 2. Resilience, transformation and agency

The notion of resilience has received considerable attention in economic geography. In the wake of the financial crisis in 2008/2009, several studies contributed to a better understanding of resilience (e.g. Dijkstra, Garcilazo, and McCann 2015; Faggian et al. 2018; Giannakis and Bruggeman 2017), with further studies on the effects of Covid-19 (e.g. Gong et al. 2020; Ntounis et al. 2022) and in future surely about resilience to the energy crunch and food shortage and geopolitical tensions caused by the Ukrainian war. There is also a substantial body of literature discussing the concept of resilience, criticizing the many different and often blurry definitions, and lack of theory (Boschma 2015; Bristow and Healy 2020; Christopherson, Michie, and Tyler 2010; Hassink 2010; Martin and Sunley 2014; Pike, Dawley, and Tomaney 2010). We limit ourselves to defining the concept of resilience for the purpose of this paper. We lean on the differentiation between adaptation and adaptability discussed extensively in the literature (Boschma 2015; Grabher 1993; Grabher and Stark 1997; Pike, Dawley, and Tomaney 2010).

Adaptation refers to short-term adjustments within existing development paths. When a crisis turns down demand, short-term adjustments typically include that firms cut operating costs, investments and production but also seek to maintain the ability to increase production when market demand picks up again. Maintaining the production capability may be achieved through different measures, for instance by introducing short-term work arrangements, offering training opportunities locally to laid-off workers, or providing financial support to keep companies afloat as was common during the Covid-19 crisis. Even though adaptation may require incremental innovations and adjustments within existing industrial paths it does not imply a structural change in the regional economy. After the shock, the economic activities would remain essentially the same as before. Hence adaptation is about bouncing back as quickly as possible to the pre-crisis situation. Several scholars have criticized that adaptation should not be

understood in an engineering sense where an equilibrium is to be restored, and that from an economic geography perspective long-term adaptability is more relevant (Hassink 2010; Martin and Sunley 2014; Pike, Dawley, and Tomaney 2010).

Adaptability refers to the ability of local actors (firms, education and research institutions, universities, local government, civil society, etc.) to identify, develop and grasp new opportunities, and to diversify economic activities, in other words, to realize a structural change where different economic activities are performed after the crisis. The development of new opportunities and the diversification of economic activities tend to be risky, entail costs in the short-term whereas benefits tend to accrue in the long-term (Grillitsch, Asheim, and Nielsen 2022a; March 1991). The problem is that crises negatively affect the cash-flow of firms, which makes it more difficult to invest in explorative activities with uncertain returns in the long-term. Hence, it could not be expected that adaptability is visible in a quick bouncing back of production, employment, value added and profit. Rather it becomes visible in the longer-term as firms establish a position in the new market niches and scale production. Adaptability describes a qualitative change, a bouncing forward after the crisis.

Resilience, however, needs to meet both short-term and long-term needs and should be considered as a process (Hassink 2010; Martin and Sunley 2014). Boschma (2015, 736) reminds us 'there is a need to integrate the two meanings of resilience, that is, the short-term capacity of a region to absorb shocks and the long-term capacity of a region to develop new growth paths'. The conundrum, following Grabher (1993), is the trade-off between adaptation and adaptability where adaptation implies that regions become more specialized and optimized within a given industrial path. Adaptability in contrast requires that knowledge, production capacities, and resources can be easily brought to multiple unexpected uses, should thus be generic and non-specific. Hence, with increasing adaptation, this is to say specialization and optimization within existing industrial paths, regions compromise their adaptability.

Evenhuis (2020) argues that adaptability is essential to address the often slow-burning structural changes while emergencies and macro-economic fluctuations may be impactful but do not necessarily call for a structural change of the regional economy and their impact may thus be short-lived. For instance, the Covid-19 pandemic caused a sharp dip in the tourism industry, yet with restrictions lifted the tourism industry began to flourish again without pressures for structural change due to the pandemic. In contrast, structural change in regional economies, which is the outcome of adaptability, usually takes a decade or more to manifest (Fritsch and Mueller 2004; Grillitsch et al. 2022). Adaptations to emergencies and macro-economic fluctuations, including downscaling, interventions to maintain production capacities, and upscaling when the crisis is over can often be observed instantly.

Sustainability transformation shares the focus on structural change with the notion of adaptability. Yet, transformation and adaptability are not the same. Most importantly, adaptability, does not necessarily imply directionality towards a greener and more inclusive society. With the notion of sustainability transformations, in contrast, researchers and policy makers aim to understand and influence the processes which make transitions to more sustainable forms of consumption, distribution and production possible (Laatsit, Grillitsch, and Fünfschilling 2022; Schot and Steinmueller 2018). The issue with sustainability transformation is that it does not only concern finding new market niches and

exploiting them (as would suffice for adaptability) but to transform and possibly replace existing institutions and infrastructures. It is not only about taking a position in existing global value chains but changing them to substantially reduce negative environmental and social externalities. There was a hope that the heavy state interventions in response to Covid-19 and the energy crunch would not only help the economy through the short-term crisis but at the same time contribute to sustainability transformations. Such transformation to a more sustainable future thus goes beyond adaptation (bouncing back) and adaptability (bouncing forward) referred to by the concept of resilience.

Moreover, it has been recognized that neither resilience nor transformation can be understood without the engagement of actors at multiple scales in the process of change (Boschma 2017; Evenhuis 2020; Grillitsch and Sotarauta 2020). Bristow and Healy (2014, 924) criticize that the emphasis on structures, such as industrial composition or institutions, neglects the importance of human agency

at the heart of regional economic resilience. [...] it reflects the inevitable degree of determinism evident in translating systems and resilience thinking from the natural and physical sciences to the social world where the ingenuity, foresight and anticipatory behaviour of human agency means, for example, adaptive cycles are capable of being overridden, broken or substantively changed.

Even though human agency has until recently received limited attention in economic geography, it is one of the fundamental questions in sociology (e.g. Archer 2003; Giddens 1984). The revived interest in human agency can be related to the need to better explain structural change of the economy and the creation of new economic paths (Dawley 2014; Garud, Kumaraswamy, and Karnøe 2010; Simmie 2012), this is to say to explain the processes and mechanisms that underpin adaptability and transformation (Evenhuis 2020; Pike, Dawley, and Tomaney 2010). In their seminal article, Emirbayer and Mische (1998, 962) conceptualize agency as a

temporally embedded process of social engagement, informed by the past (in its “iterational” or habitual aspect) but also oriented toward the future (as a “projective” capacity to imagine alternative possibilities) and toward the present (as a “practical-evaluative” capacity to contextualize past habits and future projects within the contingencies of the moment).

We use the analytical dimensions of iteration, projectivity and practical evaluation to relate agency to adaptation, adaptability and transformation.

Iteration relates to ‘the selective reactivation by actors of past patterns of thought and action, as routinely incorporated in practical activity, thereby giving stability and order to social universes and helping to sustain identities, interactions, and institutions over time’. (Emirbayer and Mische 1998, 971). Iteration refers to actions that may also be considered habitual or routinized. Yet, habits and routines disguise that respective actions are not simply the transposition of structures but in varying degrees require involvement, decision making and actions. In a similar vein, Garud, Kumaraswamy, and Karnøe (2010, 766), rejecting a deterministic view of path-dependence, argue that actors ‘who are involved in complex paths in-the-making need not be so helpless’ but make choices how to engage in change processes. For instance, in the case of the maritime industry, it has been argued that one important reason why Norway could survive in a low-cost competition was that their engineers and workers could make informed and instant decision on the work floor, correct mistake, incrementally innovate and ensure

successful delivery of complex projects. In the same way, nearly any profession – the hairdresser, marketing consultant and banker – will need to exert ‘iterative’ agency in their daily work, and thereby constantly adapt to the changing environment, selectively reactivating what they have learned in the past.

Projectivity is ‘the imaginative generation by actors of possible future trajectories of action, in which received structures of thought and action may be creatively reconfigured in relation to actors’ hopes, fears, and desires for the future’ (Emirbayer and Mische 1998, 971). This essentially relates to what has recently been discussed in economic geography as change or transformative agency, which can take different forms including innovative entrepreneurship, institutional entrepreneurship and place-based leadership (Grillitsch and Sotarauta 2020). Schumpeter’s (1911) distinction in actions that draw from past experience tending to reproduce economic structures and actions that are motivated by a belief in not yet realized opportunities driving change in the economy resonates with Emirbayer and Mische’s differentiation between iterative and projective agency. Institutional entrepreneurship, actions aimed at changing existing or introducing new institutions (Battilana, Leca, and Boxenbaum 2009; DiMaggio 1988) is in fact mentioned by Emirbayer and Mische as a form of projective agency. Place-based leadership refers to collective action and mobilization of resources for common goals, and thus to efforts to engage a set of actors to joint projective action (Sotarauta and Beer 2021). It could be considered as efforts to engage a set of actors to joint projective action.

Practical evaluation entails ‘the capacity of actors to make practical and normative judgments among alternative possible trajectories of action, in response to the emerging demands, dilemmas, and ambiguities of presently evolving situations’ (Emirbayer and Mische 1998, 971)’. In contrast to iteration, which largely rests on learned patterns from the past, and projectivity, which rests on the imagination of the future, practical evaluation is mainly situated in the present. It refers to conscious and critical deliberation of the situation actors find themselves in, often in dialogues with others. The need for practical evaluation is evident in crisis times when situations change, and a critical and conscious effort to understand the changing context becomes necessary. However, practical evaluation does not necessarily mean that projective change agency will follow. Actors may also decide for iterative actions to maintain existing paths.

Furthermore, Emirbayer and Mische (1998) alert us that actor orientations are to different degrees iterative, projective, or practical-evaluative. Hence, when studying agency, it is misleading to assume that theoretical types are mutually exclusive in practice. Furthermore, actor orientations may change over time and may differ depending on the spatial, temporal and relational contexts considered. When discussing the temporality of agency in regional development, Grillitsch, Asheim, and Nielsen (2022a, 121) find relatedly that firms and regions constantly struggle to combine the longer-term, projective and explorative activities with the shorter-term, iterative and exploitative activities. Furthermore, even mainly past-oriented iterative actions need some level of projectivity, for instance, the engineer foreseeing a problem with a design instruction, the hairdresser foreseeing the new looks after the haircut, a marketing consultant foreseeing the response of the target group, or the banker foreseeing the possibility of a firm to pay back a loan. And mainly future-oriented projective actions will need to rest on knowledge, networks, resources developed in the past.

**Table 1.** Resilience – responses to crisis.

Resilience	Adaptation	Adaptability	Transformation
Agentic orientation	Evaluative-iterative	Evaluative-projective	Projective-evaluative
Time perspective	Short-term	Medium-term	Long-term
Desired outcome	Bounce back of existing economic activity	Bounce forward to new economic activities	Bounce beyond the way the economy is currently working

The argumentation is summarized in [Table 1](#). Adaptation is characterized by an evaluative-iterative agentic orientation and a short-term perspective. This means that the practical evaluation leads to the decision that iterative actions shall be undertaken to maintain existing industrial paths in the short-term, such as short-term work and other actions to maintain the production capabilities. The desired outcome is a bouncing back of the existing economic activity. Adaptability is characterized by an evaluative-projective agentic orientation and a medium-term perspective. Here practical evaluation leads to the decision that projective actions shall be pursued to identify new niches and diversify the economy. The desired outcome is to bounce forward towards new economic activities in the medium-term. Transformation is characterized by a projective-evaluative agentic orientation and a long-term perspective. We suggest putting projective before evaluative because even though in crises times practical evaluation will always play a role, transformation requires from actors to free themselves from current production and consumption patterns and imagine new ways of organizing the economy in the long-term. It goes beyond identifying a new market niche and diversification. The aim is to bounce beyond the way the economy is currently working.

### 3. Methodology

#### 3.1. The case

The maritime industry in the coastal islands of Sunnmøre district, located in the west of Norway ([Figure 1](#)), is a theoretically interesting and extreme case ([Eisenhardt and Graebner 2007](#)) because it was subject to several crises but is also known for its entrepreneurial spirit and ‘resilience’ against crises ([Amdam, Bjarnar, and Berge 2020](#); [Amdam et al. 2020](#)). The study area is populated by approximately 28,000 inhabitants and situated close to Ålesund, which hosts the Ålesund Campus of NTNU (Norwegian University of Science and Technology in Trondheim) as well as a strong innovation support structure under the umbrella of ÅKP (Ålesund Knowledge Park). The maritime industry has an over hundred-year-old history in the region and has been volatile in the past. From 2004 to 2014 a globally leading cluster in the maritime industry developed benefiting from an extraordinary growth driven by a combination of demand from the oil and gas industry, innovative entrepreneurs anticipating and using this opportunity, and a variety of local actors strengthening the regional support system ([Grillitsch, Asheim, and Nielsen 2022a](#)). However, the maritime industry also faced extraordinary challenges thereafter, which we study in this paper.

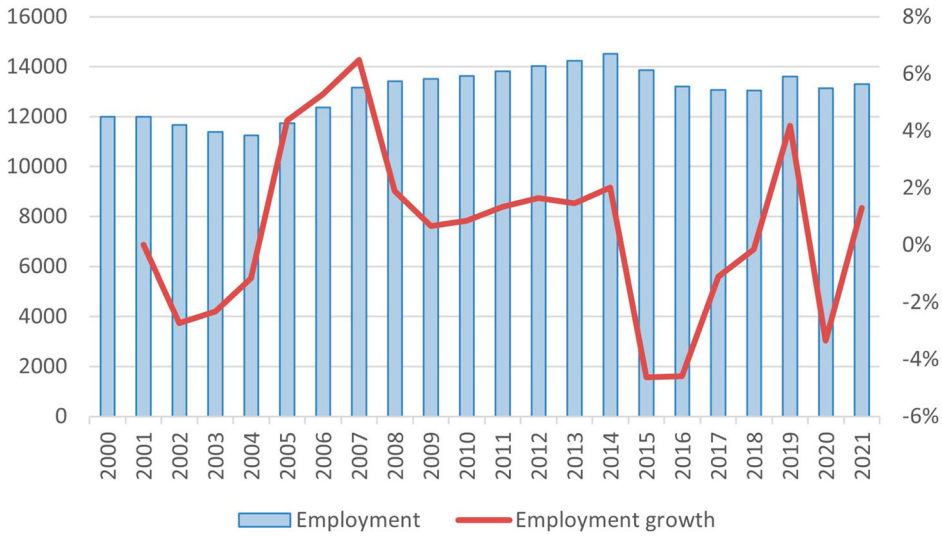
[Figure 2](#) depicts the employment figures for the study area from 2000 to 2021. It shows a quickly growing job market after 2004 with a peak in employment in 2014, a deep crisis



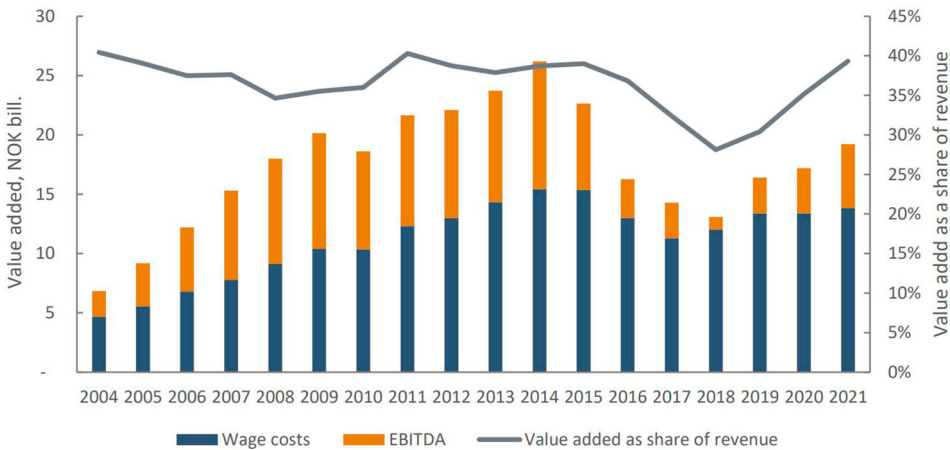


**Figure 1.** Map of the study area.

after 2014 with some recovery in 2019 and a drop in employment again in 2020. The job market has not fully recovered from the crisis after 2014. These developments are largely mirrored in the earnings and wage sums of the maritime industry (Figure 3). The earnings and wage sums peaked in 2014 and dropped to the lowest level in 2018 mainly caused by the collapse of the oil price. The crisis pictures a delay because the order books were still full in 2014. After 2018, an upward trend can be observed without a visible dip when Covid-19 hit, which has to do with the lead times of signing and executing orders. However, fewer orders were signed after Covid-19, which will affect the near future. What is not visible in this graph is that the recovery was largely driven by growth and profitability in the supplier sector while shipyards, and in particular the large shipyards have become vulnerable because of high financial losses after 2014 and still negative earnings (Menon Economics 2022).



**Figure 2.** Employment in the study area.



**Figure 3.** Development of wage costs and EBITDA (Earnings before Interest Tax Depreciation and Amortization) in maritime cluster.

### 3.2. The data

We visited the region in 2014 and 2019 and conducted online interviews in 2021/2022 due to Covid-19, in total 53 interviews (see Table 2). In 2021/2022, we conducted 11 repeated interviews with respondents from 2019, of which we even interviewed 5 in 2014. The visits coincided with recent crises: In 2014, the remarkable growth phase driven by the demand for offshore service vessels for the oil and gas sector ended due to the collapse of the oil price. 2019 was just before the Covid-19 pandemic hit and when local actors were still in the mid of change processes after the oil price shock in 2014. In 2021, we could begin to observe the outcomes of the change processes. In

**Table 2.** Interviews.

Actor type	2014	2019	2021
Firms	5	10	7
Local and regional government	1	3	1
Intermediaries (cluster organizations, chamber of commerce, knowledge park, etc.)	8	6	6
HEI/Research organizations	3	1	2
Total	17	20	16

addition, we studied policy documents and strategies, newspaper articles, website and reports. In particular, the yearly reports of Menon Economics, benchmarking the performance of the maritime sector, was helpful to complement our qualitative material.

### 3.3. The method

The purpose of the empirical illustration is to illuminate the processes of adaptation, adaptability and transformation, the agentic orientations and time perspectives, as well as the outcomes. To achieve this, we apply a qualitative, process-oriented methodology.

Process methodologies are applied with the aim to understand sequences of events and their underlying complex patterns of causation as well as their potential effects in a specific time period. Therefore, process studies require to move from detailed empirical observations to more abstract models that capture the underlying generative mechanisms of a process (Strambach and Pflitsch 2020, 7).

We followed the principles of the path tracing methodology (Sotarauta and Grillitsch 2023). This entailed that we used the initial desk research to develop a draft timeline of key events affecting the development of the maritime industry. We used the desk research also to identify actors (organizations and people) who could be related to these events. For the interviews in 2019 and 2021/2022, we took the list of key informants from the previous round of interviews as a basis but added new informants based on an updated desktop research. The list of key informants was discussed and complemented with an expert of the development of the maritime industry in the region.

The in-depth interviews covered information about the interviewee and the organization the interviewee represented, the observed changes in the industry, the perceived causes and effects of these changes, the perceived opportunities and threats, which strategies the actors pursued, and what the intended and unintended outcomes were. This information was used to validate the timeline and develop an understanding about the causal processes at work. We reported our findings from 2014 and 2019 in other publications, which include the detailed timeline covering 20 years of development in the regional maritime industry (Grillitsch et al. 2022; Grillitsch, Asheim, and Nielsen 2022a). In this paper, we mainly exploit our new empirical material from 2021/2022. The novelty in this new round of interviews is the emergence of two contrasting agentic orientations, which have not been visible in the previous rounds of interviews. The previous rounds of interviews, however, allow us to shed light on why these two contrasting orientations emerged as unintended consequences of previous actions. With this approach, we aim as stipulated by Strambach and Pflitsch (2020) to move from the detailed empirical observations to the complex patterns of causation underlying the

change process. Also, we disassociate the agentic and causal patterns from individual actors and refer to the notions of support structures and firms in plural to protect the integrity of individual respondents, who could be easily exposed when drawing on repeated observations.

## 4. Empirical findings

The most striking finding when conducting interviews in 2021 and 2022 concerns two starkly contrasting agentic orientations: (i) a traditional perspective of organizing the maritime industry in global supply chains and (ii) a progressive perspective of regenerative regional development in responsible supply chains.

### 4.1. Two contrasting perspectives

The traditional perspective is essentially a firm-oriented perspective where prices or costs are the main drivers in the global economy. Globalization is nothing new but, according to our respondents, was already discussed in the early 2000s questioning whether shipbuilding had a future in Norway in the face of low-cost competition (compare [Figure 2](#) depicting a declining number of jobs in this period).<sup>1</sup> The maritime sector in the region had responded with continuous upgrading, innovation and focus on higher-value activities such as complex project management. Yet, the possibility of integrating technologies in local yards was still seen as a major competitive advantage as it allowed for a high speed of innovation through interaction between co-located users and producers. The maritime sector developed into a global hub in the period from 2004 to 2014 and up to our last round of interviews, the confidence of weathering low-cost competition as innovation leader was the dominant narrative (Grillitsch et al. 2022).

In our interviews in 2021/2022, however, key actors foregrounded the negative sides of globalization. First, they argued that Norway has a distinct disadvantage because of high-labour cost and limited labour supply, which makes it necessary to contract foreign workers. Foreign workers, according to our interview partners, are even more expensive than local workers because of the legal obligation for equal reimbursement combined with relocation and accommodation costs. Relatedly, the traditional perspective emphasizes the importance of outsourcing low-skill labour intensive activities in global supply chains. The unintended consequence of such outsourcing for the local maritime industry has been twofold. First, the geographically more dispersed supply chain has made it more difficult to engage in learning-by-doing, using and interacting, and consequently has negatively affected the innovativeness of local firms. Innovation facilitated by learning-by-doing, using and interacting<sup>2</sup> has been one of the main reasons why the maritime cluster could maintain its globally leading position despite the high-cost base. The second disadvantage from a local perspective is that outsourcing has caused loss of local capabilities and has helped foreign yards to develop their capabilities and increasingly match the quality of Norwegian yards. Due to these disadvantages, it is increasingly questioned whether Norwegian yards will survive and with it the integrated maritime cluster with its diverse set of interconnected firms. This is because the yards are seen as integrators of equipment and service providers, which provides a platform to test,

learn and innovate, and thus contributes essentially to the competitiveness of the whole cluster. Moreover, the traditional perspective is characterized by a conservative attitude towards sustainability. First, local actors foreground the continued importance of the oil and gas sector, pointing to the relatively clean extraction and production processes in Norway. Second, proponents of this perspective maintain that the maritime industry has for long been contributing to sustainability by increasing the fuel-efficiency of the vessels and thereby decreasing carbon emissions.

In contrast, the progressive perspective is a societal one and was, somewhat surprisingly, expressed most clearly by some firm representatives. This perspective is diametrically opposed the traditional view. The main focus is not cost-efficiency in global supply chains but value creation locally through responsible supply chains that consider environmental and social impacts in the whole lifecycle of a product from extracting raw materials, transport, installation, use, to reuse or recycling. Furthermore, the progressive perspective takes issue with the security and robustness of supply chains in the wake of geopolitical tensions as well as with the exploitation of cheap labour in Eastern Europe and developing countries, which are not sustainable in the long run; only innovation-based development is (Porter 2000). It is attentive to addressing regional inequalities and building a competence base locally. Competition, in this perspective, is not about cost advantages but innovation and value creation. In short, the global chase for cost-advantages with little concern about environmental or social cost is not considered desirable and sustainable in the long run. The proposed alternative focusses on local production capabilities and innovation to overcome the need for cheap labour, material and fossil energy.

The interviewed actors pursue innovations in production processes where automation, robotization (i.e. industry 4.0) and precision technologies substantially reduce the need for low-skill workers as well as the waste of raw material. Furthermore, the respondents couple technologically advanced production processes with electricity from renewable energy sources. According to our interviewees, the unit cost is still higher under the current conditions. However, there are several advantages, which the respondents argue outweigh the higher cost from a societal perspective: First, the more resource-efficient production process, cutting down long-distance transport of steel constructions and green energy radically reduce carbon emissions. Second, Norway (as well as other European countries) could benefit from and further develop their technological capabilities in advanced, automated processing in manufacturing industries. Third, a high share of the value is created in Norway, and other countries relatively nearby where the goal is to decarbonize other parts of the value chain such as steel production.

It is important to note that this perspective is not protectionist, it demands taking into consideration the unintended environmental and social consequences of the current way of organizing the global economy. An interesting idea from a firm-owner was that while this would also limit her possibilities to export goods on global markets, it could provide an opportunity to license the production process in other regions of the world, creating more responsible supply chains there.

#### **4.2. The emergence of the perspectives and its causes**

How did the two perspectives come about? We trace them back in time relying mainly on the repeated interviews. To be sure, there are not only these two perspectives and there is

not only one history how these perspectives developed. The narrative that we present is not a collection of individual trajectories but a search for an adequate interpretation of causation during the process based mainly on the repeated interviews, where we could observe the shifts in agentic orientation presented below.

As regards the traditional perspective, we find that it mainly emerged as response to disappointing financial returns of key firms' efforts to diversify. When the oil price and traditional markets collapsed in 2014, firms were aggressively trying to find new markets. This is evident in a doubling of R&D expenditures during the crisis time (Research Council of Norway 2018). As reported in another publication (Grillitsch, Asheim, and Nielsen 2022b), firms pursued a double strategy, cutting costs of current operations and investing in new markets in the medium to long run. According to a recent cluster benchmarking report, the maritime sector has clearly moved into new markets: cruise ships, offshore wind, aquaculture, hybrid/electric ferries, etc. (Menon Economics 2022). The firm investments in these diversification processes were substantial and drained financial resources to an extent that it is difficult to provide necessary bank guarantees for new orders, according to our respondents. It has been difficult to turn new markets profitable due to a high-cost base as well as limited experience (especially with regards to building cruise ships), lower margins and volumes in the new markets as compared to the offshore service vessel market for oil and gas. Representatives from the business sector, support structures and higher education sector share this narrative.

In contrast to firms, which invested heavily in finding new markets, the support structures after 2014 focused primarily on short-term oriented actions with the aim to help firms to restructure and to retain the capabilities in the region, for instance through an arrangement that made it possible for engineers to receive unemployment benefits and training without the requirement to search jobs nationwide. Hence, the focus was on facilitating a quick bouncing back. Looking at the economic data (see Figures 2 and 3) the region partly bounced back but could not regain the level of wages and earnings observed during the golden years before 2014. As many respondents stated, the market between 2004 and 2014 was exceptional and cannot be compared with the business environment since then. Some sub-sectors, in particular the equipment suppliers, developed very well after the 2014 crisis exhibiting high growth rates and export shares (Menon Economics 2022). Bouncing back was more difficult for the yards and especially the large ones. Bouncing back, according to our interviews, depended mainly on ownership structure and market segments. As regards ownership structure, the local yards had a lot of patient 'patriot' capital, which was invested locally to find new markets after the crisis. The local capital is largely exhausted now. The non-local yards – VARD, a subsidiary of Fincantieri and owned by the Italian state and Kongsberg, a national Norwegian company – have sufficient capital and get fresh orders. However, it has been noted that Kongsberg fulfils contracts often by Kongsberg-owned units in other locations abroad. Furthermore, the market segment plays a role with the smaller yards having a more diversified and thus resilient portfolio than the larger yards. It was argued that demand for conversion of service vessels for the oil and gas industry to the offshore wind sector as well as refitting existing vessels is strong, that well boats represent a promising growing market, that new building in the green sector – mainly service vessels for offshore wind – is growing but still far from the volume and

profitability of vessels for oil and gas, that exploration and discovery cruise ships are on hold, and that there is a hope for a re-bouncing of demand from the oil and gas industry. With the extraordinary prices for oil and gas, and the need to find alternatives for Russian supplies due to the Ukrainian war, which happened after our interviews, this hope may turn out to be a key driver for the industry in the near future.

In the conceptual terms developed in Section 2, after 2014 firms' agentic orientation was evaluative because it was concerned with understanding the changed business environment, and it was projective because it was oriented towards developing new market opportunities. However, these efforts were not sufficiently rewarded, which led to disappointment and recognition of the powerful cost-driven dynamics in global supply chains to which firms needed to adapt. This is a surprising and worrying turn because firms in the region historically succeeded to differentiate themselves through innovation, and thereby avoiding cost-competition. In contrast, the support structures adopted an evaluative-iterative agentic orientation with a short time perspective after the 2014 crisis. It was iterative because it was mainly concerned with adapting to the changed business environment and maintaining the existing development path. Observing the difficulties of the yards, support structure representatives tuned in to the traditional narrative, which is also underpinned by a short-term and iterative agentic orientation. This short-term focus came with a bit of surprise because during our interviews in 2014 the support structures were strongly promoting strategic work for the development of the maritime sector after oil and gas and towards more generic technologies.

As regards the progressive perspective, we also found an interesting interplay between changes in the business environment, agentic orientations, actions and unintended consequences. It started with investments in automation before the crisis in 2014 because of the increasing difficulty to recruit low-skill workers from abroad. After the crisis, the respective firms also invested heavily in finding new markets but needed to be restructured and sold because of the high losses in the new market segment. However, some actors who were involved in the automation efforts pre-2014 became active in new business ventures and the cluster organization iKuben, which was awarded the status of a National Centre of Expertise in 2018 focusing on cross-industry technological collaboration. In 2019, the progressive perspective was not clearly articulated. From the interviews, we understood that it was mainly about providing advice to manufacturing companies about digitalization, automation and new business models, drawing on the experience gained from the process innovations before 2014. In 2021/2022, however, the progressive perspective as described above was formulated and business models have clearly evolved. From the set of actors in the maritime industry who struggled after the crisis, some have invested in new facilities using automatized production processes, and first orders outside the maritime industry have successfully been delivered.

In conceptual terms, the progressive perspective is about bouncing beyond the way the economy is currently organized. It is not only about finding new markets but about finding new ways of producing and delivering in a more sustainable manner. The agentic orientation differs from bouncing forward into new market niches (adaptability) as the actors look beyond the immediate pressures and logics in the maritime sector. In contrast, the processes related to bouncing forward as discussed above start with actors who evaluate the changes in the business environment and then seek to develop new

opportunities. Thus, there is a difference between transformation (bouncing beyond) and adaptability (bouncing forward), which is rooted in the agentic orientation of actors. Long-term projectivity is clearly more important in the former and even detached to some extent from the necessities of the current organization of value chains in the maritime industry while practical evaluation and mid-term projectivity characterizes the latter, which is quite strongly anchored in the current cost-driven business rationales.

To be sure, there are variations in trajectories of agentic orientations and outcomes, and when examining the website of the Blue Maritime Cluster in October 2022, it emphasizes the goal of becoming the ‘World’s First Net-Zero Maritime Cluster’ suggesting that the agentic orientation of support structures might have shifted again to become more long-term and projective. This is not refuting the narrative presented above but speaks to the messy and complex reality, where agentic orientations differ not only between actors but where also the orientations of actors change over time. Moreover, this is not refuting that the agentic orientation explains whether actors engage in change agency towards new market niches (adaptability) or even more bold towards new ways of doing business in a more sustainable manner (transformation), or whether actors engage in maintenance agency with the aim to bounce back (adaptation) in the current market niches.

## 5. About the possibility of regenerative regional development in responsible value chains

In the previous section, we have discussed the tensions arising from our empirical material between (i) a traditional perspective of organizing the maritime industry in global supply chains, and (ii) a progressive perspective of regenerative regional development in responsible and shorter supply chains. In this section, we relate these empirical findings to theory by first discussing the nature of and mechanisms driving globalization, and its unintended and unwanted environmental and societal impacts. Then, we move on to discuss how the progressive perspective of regenerative regional development in responsible value chains may be possible, and what consequences it would have.

To start with, it is important not to confuse globalization with internationalization (Dicken 2015). While international trade is just trade between countries and has existed for several hundred years, globalization is a relatively new phenomenon from the late 1960s/beginning of the 1970s due to enabling factors such as technological development in production, communication, logistics and transportation. It has been promoted by economic-political developments in leading countries (neo-liberalism) and international organizations such as IMF and WTO (from 1995) (Rodrik 2019), which has implied a change in the organizational and institutional structure of the global economy resulting in a growth in international economic integration through trade and FDI from high-income countries (Dicken 2015). This has represented a change of focus of national economies from production and industrial policy to free trade and market exchange (Chang and Andreoni 2020; Wade 2017).

Globalization refers to the global externalization of the internal technical division of labour inside a factory, based on functions (tasks), which led to the development of global value chains (GVCs). Early examples of GVCs are the outsourcing activities in the semiconductor industry from the 1960s onwards and Ford’s global car concept in



the 1970s. A GVC 'is the nexus of interconnected functions and operations through which goods and services are produced, distributed, and consumed on a global basis' (Kano, Tsang, and Yeung 2020, 579). The governance of GVCs explains the distribution of benefits and costs, opportunities and risk within the network, between firms and across places. This includes research linking the relative control and power of lead firms to coordination mechanisms (Gereffi, Humphrey, and Sturgeon 2005) as well as research on the regulatory and institutional architectures in which GVCs are embedded (Yeung and Coe 2015). Gereffi (2020, 289) argue that the success of GVC relates to

advantages of lower costs, superior scale, and spatial flexibility by combining a variety of factors: proximity to natural resources; access to large pools of low-cost and well-trained labor; the increasing speed and sophistication of global logistics providers; and the innovation, design, and marketing prowess of MNE lead firms in a diverse array of agricultural, manufacturing, and service sectors.

GVCs are connected to the building up of production capabilities in emerging countries like China, India or Brazil, and are thus considered as mechanism for the convergence in income and wealth. In general, the participation in GVC is seen as a dynamic process where lower-level functions are shifted to locations that are more peripheral, mainly exploiting cost advantage due to lower wages, weaker labour and environmental regulations, or closeness to resources or markets. Over time, firms in host countries may upgrade and develop their capabilities to participate in higher-level functions, which is, however, conditioned by the strategies and decisions of transnational corporations (TNCs) as well as the receptiveness of the firms in the host countries to upgrading (Hobday and Rush 2007).

According to Dicken (2015) 'Globalisation processes of economic activity is more contemporary and qualitatively different' (from internationalization) as it implies 'both extensive geographical spread and a high degree of functional integration', while internationalization processes represent 'simple geographical spread of economic activities across national boundaries with low levels of functional integration' and is as such not a new phenomenon (Dicken 2015, 6–7). Globalization is a more advanced and complex form of internationalization due to the high degree of functional integration between internationally dispersed economic activities. This functional integration in GVCs is organized and orchestrated by TNCs to in many ways constitute corporate production systems (Rikap 2021).

International trade, as part of internationalization and in contrast to globalization, builds on a societal division of labour. Societal division of labour refers to countries and regions specializing in the production of different types of products for the market (agriculture in one region, steel making in a second and car production in a third), which they, based on internal, domestic resource endowments, could do relatively more efficient than other countries, which in international trade theory was called 'comparative advantage'. Instead of trade between countries globalization represents trade within the GVCs of TNCs, and not mostly of final products for the market as in international trade, but in parts of products going into the final products, which is one reason for the reduced relevance of 'comparative advantage', which has been replaced by 'competitive (absolute) advantage' in the global competition between firms, regions and nations.

By this change in trade patterns, globalization has transferred power and control from countries to large TNCs, which control the GVCs. Combined with deregulation and liberalization of neoliberalism TNCs become increasingly powerful and difficult to control for nation states, which gives TNCs ample opportunities of manipulating and exploiting different tax regimes, labour and environmental regulations and social legislations in countries, whose industries are part of GVCs. According to Giuliani

... the current grand challenges are related in a non-trivial way to companies' wrongful business conduct, especially that of large multinational corporations which have grown to rival governments in size, and have proven to be powerful agents capable of shaping the global governance agenda (Giuliani 2018, 1577).

A driving force for these large TNCs, which mostly are US based and regulated by a liberal market economy, is, according to such economies' mantra, to maximise shareholders' value by profit maximization and cost reduction. This has been the determining principle when organizing GVCs based on the just-in-time principle. 'In the past two decades, the US economy has been bulled into following a path of offshoring, driven by an ideology celebrating short-term financial gains above everything else' (Breznitz and Adler 2021). While actors in our case study region did not happily embrace this rationale, and resisted to it in the past, key stakeholders in 2021/2022 succumbed to the powerful forces of globalization under a neoliberal regime by foregrounding the traditional perspective.

Even though the GVC literature seems to suggest that TNCs tend to tightly control strategic functions and keep them close to the headquarters, there is increasing evidence that GVCs also contribute to a convergence in innovation capabilities where TNCs increasingly also distribute innovation activities (Schmitz and Strambach 2009). This, however, also relates to a range of interventions in the host countries such as investments in higher education and thus the provision of a highly skilled but low wage work force, the capabilities, networks and understanding of institutional preconditions of return migrants, governments conditioning market access with knowledge transfer, etc. (Lema, Quadros, and Schmitz 2015; Nam and Li 2012; Saxenian and Sabel 2008). The OECD (2021) summarizes that participation in GVCs brings significant economic benefits for firms and countries as specialization and economies of scale enhance productivity and lower production costs. The benefits also accrue for smaller firms and countries, as well as emerging economies because the division of labour makes it possible to participate in GVCs without mastery of the whole production process. OECD (OECD 2021) argues that even though GVCs expose participating firms and countries to external shocks from e.g. COVID-19, disruptions have tended to be rather short-lived, and that the majority of countries benefited not only in the level of economic development but also in the level of stability, i.e. that GVCs rather had a cushioning effect in crisis time. In a similar vein, Gereffi (2020) argue that reshoring in the wake of external shocks like COVID-19 is not the adequate response but that firms and countries should focus on enhancing the resilience of supply chains through e.g. increase and diversify international production sites, bolster capacities for essential products at home, or increase the stock of inventories.

However, we would argue that additional conditionalities such as supply security and resilience, working conditions, environmental regulations, and greenhouse gas

emissions, have never been taken into serious consideration in a neoliberal version of globalization. As regards the environment, one quarter of global CO<sub>2</sub> emissions are internationally traded and rich countries tend to import more than 30% of consumption-based emissions (Davis and Caldeira 2010). And, one unit GDP (gross domestic product) realized through GVCs leads to 1.4–1.8 times higher emissions than through domestic value chains, due to the exploitation of weaker environmental regulations, and increase need of shipping (Meng et al. 2018). As regards supply security, investors bet that the Ukraine war ‘will prompt companies to bring production onshore’ (Agnew 2022). As regards uneven development, *The Economist* (2017) shed light on the troubles of the places left behind by globalization, which cause discontent, social tensions and frustrations punishing among others the political elites (McCann 2020; Rodríguez-Pose 2018). Concerning working conditions and human rights, Bachelet (2022), UN High Commissioner for Human Rights, says

[t]he human rights impacts of global supply chains are clear: the use of precarious and informal employment is expanding at a rapid rate. Workers, especially migrant workers, are becoming ever more vulnerable, subject to a raft of human rights violations at the hands of their employers.

In the words of the deputy chief executive at Tikehau Capital (an alternative asset manager):

This very globalised economic model ... has an impact on climate, on biodiversity, on social inequalities. The fact that those crises force us to try and build a more sustainable economic model is definitely not necessarily bad for the world (Agnew 2022).

Contesting the traditional globalized growth model in a neoliberal frame with its powerful short-term economic pressures, the progressive perspective envisions an alternative future of regenerative regional development in responsible and shorter value chains. The drivers for such an alternative organization of the economy relate, as with the global shift, to innovation, technology and institutional changes.

As regards innovation, our case study points to the potential of automation, robotization and precision technologies to reduce the need for low-skill labour input and to use raw materials more efficiently. However, one important problem with globalization and outsourcing in manufacturing industries is the loss of production knowledge and manufacturing capabilities (Enderwick and Buckley 2020; Nujen and Halse 2017). Concretely, by outsourcing the building and increasingly also outfitting of hulls, production knowledge and manufacturing capabilities were lost in the maritime industry, and the role of shipyards as integrators of knowledge from the specialized suppliers in the cluster diminished. The maritime cluster in Sunnmøre had a complete value chain of shipowners, yards, specialized suppliers and supportive structures in close proximity, which offered perfect conditions for face-to-face and user-producer interaction, which is an important driver for innovation in synthetic knowledge based, engineering industries, where experience based, tacit knowledge and trial and error are important factors to promote innovation (Jensen et al. 2007). The micro foundation of this mode of innovation is the learning work organization (Arundel et al. 2007; Asheim 2012). This form of work organization is characterized by a large degree of worker autonomy, which provides learning dynamics through the ability of workers to use

their knowledge in the manufacturing process and learn from doing this. This again is an important factor promoting incremental, employer-driven innovation on the work floor. This form of work organization is a product of egalitarian societies such as the Nordic, and is the dominating form of work organization in manufacturing industries in these countries as well as in the Netherlands, and to a certain degree also in Germany and Austria (Arundel et al. 2007).

Hence, the progressive perspective foregrounds innovation and capability development locally, which is why we associate it with the notion of ‘regenerative’ regional development. The term regenerative has been used in agriculture meaning ‘the capacity to bring into existence again’ and in opposition to the term sustainable, which by definition means the ability to maintain or uphold something (Rhodes 2017, 103). We consider ‘regenerative’ is fitting with the progressive perspective because it foregrounds the development of capabilities and innovation, which allows the region to regenerate itself while the traditional perspective with its imperative to cost advantages and outsourcing led to a loss of local capabilities, and a higher vulnerability in many of the manufacturing regions in the developed world, with detrimental societal and political consequences even threatening fundamentals of democracy (Economist 2017; McCann 2020; Rodríguez-Pose 2018; Rodrik 2019). The possibility of an innovation-driven approach as opposed to an approach that seeks exploiting cost advantages and weak regulations in a race to the bottom is illustrated by territorially-anchored small and medium-sized manufacturing firms that compete through innovation in specific market niches and despite being often located in peripheral regions, the German ‘Hidden Champions’ of ‘Mittelstand’ firms being a typical example (Audretsch, Lehmann, and Schenkenhofer 2018; Bessant 2019; Simon 2009; Vonnahme and Lang 2021).

The progressive perspective combines regenerative regional development with responsible value chains. Responsible refers to sourcing decisions in value chains that quickly approach zero greenhouse gas emissions, and that protect standards of work and human rights. In the traditional, neoliberal frame of globalization, TNCs tend to be mainly concerned with shareholder value, and profit maximization. This has partially been counteracted with pressures from consumers and civil society in response to for instance child labour scandals, and international institutions developing and promoting for instance principles for responsible investments leading to an acceleration of ESG (environmental, social, (corporate) governance) investment practices. Furthermore, cases of back- or reshoring may result in more responsible value chains. While the background to back- or reshoring has often been that the offshoring decision did not meet expectations due to e.g. problems with coordination, quality, lead times and risk (Fratocchi et al. 2016; Wiesmann et al. 2017), the increased use of automation technologies made backshoring more attractive and feasible (Arlbjørn and Mikkelsen 2014). In a study of backshoring in Norway, including some maritime firms, Halse and Klymenko (2022) find that in all cases automation played an important role, yielding positive outcomes as regards capability development and innovation, as well as sustainability – notably reduction in greenhouse gases, even though this was not the initial motive. Yet, in the face of the feeble response to climate change and social injustice (Bachelet 2022; Phillips et al. 2014) there is no doubt that these non-binding mechanisms or economic reshoring rationales are not powerful enough to deal with the

negative consequences of the traditional perspective. Hence, policy intervention is needed to shift the balance from the traditional perspective of globalization in a neoliberal frame to the progressive perspective of regenerative regional development in responsible value chains.

It is important to keep in mind that the progressive perspective is not advocating for protectionism in new clothes but a return to a regime of internationalization. However, it strongly calls for institutions that steer economic activities away from practices that are harmful for society and the planet. To comprehensively develop the necessary interventions to make regenerative regional development in responsible value chains possible is beyond the scope of this paper. However, from our empirical study and the theoretical insights, we suggest that the following elements will be important:

First, it requires a change in the trade regime away from a mere cost-perspective and ignorance for environmental and social harm. In this regard, a ‘seismic shift in the socioeconomic agenda’ (Foroohar 2022) is under way, corroborated for instance by European efforts to (re)negotiate trade agreements in order to penalize negative environmental and social impacts (European Commission 2022). The guiding star should be the establishment of rules that increasingly shift the opportunity space in favour of socially desirable practices which lead to a transition towards zero greenhouse gas emissions and allow societies and the planet to regenerate. This may include conditionalities on supra-national (EU) level, where tariffs are introduced if standards concerning climate and environment, human rights, and labour conditions are not met, and the development and use of methods that consider the whole value chain when deciding on the location of production in relation to final markets (transport, type of energy for raw material exploitation and production). This is essential to combat climate change.

Second, it will be necessary to provide for the necessary capabilities and resources for the industry to introduce and make use of industry 4.0 production technology such as automation, robotization and precision technologies (Ghobakhloo 2020; Lasi et al. 2014) by mobilising new industrial policies (Aiginger and Rodrik 2020). An example are national cluster programmes that promote the implementation of industry 4.0 by enhancing capabilities, strengthening collaboration between relevant stakeholders, and thereby contribute to building an innovative and advanced production sector (OECD 2022). Due to the reduced focus on production knowledge and manufacturing capabilities, this knowledge is not anymore present in, for instance, our case study region, and firms interested in introducing this technology must access it in Sweden, which is a strong manufacturing economy. This relates also to the training of skilled workers with the aim to secure enough local work force for the industry. Furthermore, it requires to secure enough patient and risk willing capital for necessary investment in modern production technology for the manufacturing industry.

Third, a set of interventions aimed at demand articulation appears necessary (cf Weber and Rohrer 2012). This could entail the engagement of the public sector in co-creating and shaping markets for new and sustainable products from the manufacturing industry. This can be done by (functional) procurement for innovation and acting as initial customers (public agencies at different geographical levels) where for instance emissions in the whole value chain become an important award criterion (Edler and Georgiou 2007; Edquist and Zabala-Iturriagoitia 2012; Uyarra and Flanagan 2010).

It could also include a careful consideration of procurement processes so that local, specialized suppliers have a chance to participate in tenders, for instance by splitting large integrated calls into several smaller and more specialized calls.

## 6. Conclusions

The paper set out to further our understanding about why, how and to what consequences local actors engage in regional development during and after crisis times to understand the role of human agency for regional resilience. We aimed at identifying the differences in agentic orientations of the underlying processes that lead to adaptation – bouncing back to economic activities existing before the crisis, adaptability – bouncing forward or diversification into new economic activities, or transformation – bouncing beyond the current organization of the economy towards a more green and inclusive future.

Most surprisingly, we found two starkly contrasting development perspectives in the agentic response of local actors: the traditional, neoliberal economic rationale of globalization versus the progressive rationale of regenerative regional development in responsible value chains. The progressive rationale was presented empirically and theoretically as alternative to the current organization of the economy in global value chains embedded in a neoliberal ideology, with costs as main driver and little concern neither for local economic development nor for global environmental and social impacts. The traditional perspective is clearly characterized by a short-term and iterative agentic orientation, mainly influenced by the past. Actions are undertaken by firms and support structures to maintain the maritime industry, largely as it was before the crisis hoping for a resurgence of the oil and gas industry.

The progressive perspective is underpinned by a long-term and projective agentic orientation, looking into the future beyond the current organization of the economy. Investments in automation and precision technologies shift focus on capability building in advanced production and manufacturing, and combined with regained possibilities of learning through doing, using, and interacting enhance innovation. Hence, it promotes regenerative development whereas the imperative of outsourcing to the cheapest locations (the traditional perspective) led to a loss of capabilities. The investments in local automated manufacturing capabilities reduce the reliance on exploiting low-cost advantages arising from cheap labour, and weak environmental, labour, and human rights standards. Shorter supply chains, fossil free energy resources, and higher efficiency in the use of raw materials furthermore contribute to sharp cuts in greenhouse gas emissions. The progressive perspective thus calls for responsible value chains where greenhouse gas emissions and low environmental, labour, and human rights standards are penalized.

This led us to propose elements of policy interventions aimed at shifting the balance from the traditional to the progressive perspective, acknowledging that this needs further elaboration based on empirical research of other industries and geographic contexts. Whether the progressive rationale gains in importance in our case study about the maritime region in Sunnmøre/Norway, and which direction regional development takes, will depend on such policy interventions at the national and European level.

## Notes

1. See Section 5 for a theoretical discussion of the notion of globalization. In this section, we aim to remain close to the empirical material. Even though interviewees may not have a deep theoretical understanding of globalization, they have clear perceptions about the pressures resulting from being embedded in a global economy.
2. For a detailed discussion on innovation by doing, using, and interacting see Jensen et al. (2007)

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

Financial support for this study was provided by the Research Council of Norway, through the project 'RegReSir - Regional Resilience and Sustainable Industrial Restructuring' (project number 316539).

## ORCID

Markus Grillitsch  <http://orcid.org/0000-0002-8406-4727>

Bjørn T. Asheim  <http://orcid.org/0000-0001-8681-0132>

## References

- Agnew, H. 2022. "Investors Bet Ukraine War Will Prompt Companies to Bring Production Onshore." *Financial Times*.
- Aiginger, K., and D. Rodrik. 2020. "Rebirth of Industrial Policy and an Agenda for the Twenty-First Century." *Journal of Industry, Competition and Trade* 20 (2): 189–207. doi:10.1007/s10842-019-00322-3.
- Amdam, R., O. Bjarnar, and D. Berge. 2020a. "Resilience and Related Variety: The Role of Family Firms in an Ocean-Related Norwegian Region." *Business History*, 1–21. doi:10.1080/00076791.2020.1822329.
- Amdam, R., R. Lunnan, O. Bjarnar, and L. Halse. 2020b. "Keeping up with the Neighbors: The Role of Cluster Identity in Internationalization." *Journal of World Business* 55 (5): 101125. doi:10.1016/j.jwb.2020.101125.
- Archer, M. 2003. *Structure, Agency and the Internal Conversation*. Cambridge: Cambridge University Press.
- Arlbjørn, J., and O. Mikkelsen. 2014. "Backshoring Manufacturing: Notes on an Important but Under-Researched Theme." *Journal of Purchasing and Supply Management* 20 (1): 60–62. doi:10.1016/j.pursup.2014.02.003.
- Arundel, A., E. Lorenz, B. Lundvall, and A. Valeyre. 2007. "How Europe's Economies Learn: A Comparison of Work Organization and Innovation Mode for the EU-15." *Industrial and Corporate Change* 16 (6): 1175–1210. doi:10.1093/icc/dtm035.
- Asheim, B. 2012. "The Changing Role of Learning Regions in the Globalizing Knowledge Economy: A Theoretical Re-Examination." *Regional Studies* 46 (8): 993–1004. doi:10.1080/00343404.2011.607805.
- Audretsch, D., E. Lehmann, and J. Schenkenhofer. 2018. "Internationalization Strategies of Hidden Champions: Lessons from Germany." *Multinational Business Review* 26 (1): 2–24. doi:10.1108/MBR-01-2018-0006.

- Bachelet, M. 2022. "G7: Sustainable Value Chains – Success Factors for an Internationally Accepted Binding Standard." *Statements*. <https://www.ohchr.org/en/statements/2022/05/g7-sustainable-value-chains-success-factors-internationally-accepted-binding>
- Battilana, J., B. Leca, and E. Boxenbaum. 2009. "2 How Actors Change Institutions: Towards a Theory of Institutional Entrepreneurship." *The Academy of Management Annals* 3 (1): 65–107. doi:10.1080/19416520903053598.
- Bessant, J. 2019. "The Role of Sustained Innovation in the Competitiveness and Longevity of Hidden Champions." *Ekonomiaz* 95: 42–63.
- Boschma, R. 2015. "Towards an Evolutionary Perspective on Regional Resilience." *Regional Studies* 49 (5): 733–751. doi:10.1080/00343404.2014.959481.
- Boschma, R. 2017. "Relatedness as Driver of Regional Diversification: A Research Agenda." *Regional Studies* 51 (3): 351–364. doi:10.1080/00343404.2016.1254767.
- Breznitz, D., and D. Adler. 2021. "America Can't Even Produce the Things It Invented." *The New York Times*.
- Bristow, G., and A. Healy. 2014. "Regional Resilience: An Agency Perspective." *Regional Studies* 48 (5): 923–935. doi:10.1080/00343404.2013.854879.
- Bristow, G., and A. Healy. 2020. *Handbook on Regional Economic Resilience*. Cheltenham: Edward Elgar Publishing.
- Chang, H., and A. Andreoni. 2020. "Industrial Policy in the 21st Century." *Development and Change* 51 (2): 324–351. doi:10.1111/dech.12570.
- Christopherson, S., J. Michie, and P. Tyler. 2010. "Regional Resilience: Theoretical and Empirical Perspectives." *Cambridge Journal of Regions, Economy and Society* 3 (1): 3–10. doi:10.1093/cjres/rsq004.
- Davis, S., and K. Caldeira. 2010. "Consumption-based Accounting of CO2 Emissions." *Proceedings of the National Academy of Sciences* 107 (12): 5687–5692. doi:10.1073/pnas.0906974107.
- Dawley, S. 2014. "Creating New Paths? Offshore Wind, Policy Activism, and Peripheral Region Development." *Economic Geography* 90 (1): 91–112. doi:10.1111/ecge.12028.
- Dicken, P. 2015. *Global Shift: Mapping the Changing Contours of the Global Economy*. 7th ed. London: Sage.
- Dijkstra, L., E. Garcilazo, and P. McCann. 2015. "The Effects of the Global Financial Crisis on European Regions and Cities." *Journal of Economic Geography* 15 (5): 935–949. doi:10.1093/jeg/lbv032.
- DiMaggio, P. 1988. "Interest and Agency in Institutional Theory." In *Institutional Patterns and Organizations: Culture and Environment*, edited by L. G. Zucker, 3–22. Cambridge, MA: Ballinger.
- The Economist. 2017. "Left Behind: How to Help Places Hurt by Globalisation." London: The Economist Newspaper Limited.
- Edler, J., and L. Georghiou. 2007. "Public Procurement and Innovation—Resurrecting the Demand Side." *Research Policy* 36 (7): 949–963. doi:10.1016/j.respol.2007.03.003.
- Edquist, C., and J. Zabala-Iturriagoitia. 2012. "Public Procurement for Innovation as Mission-Oriented Innovation Policy." *Research Policy* 41 (10): 1757–1769. doi:10.1016/j.respol.2012.04.022.
- Eisenhardt, K., and M. Graebner. 2007. "Theory Building from Cases: Opportunities and Challenges." *Academy of Management Journal* 50 (1): 25–32. doi:10.5465/AMJ.2007.24160888.
- Emirbayer, M., and A. Mische. 1998. "What Is Agency?" *American Journal of Sociology* 103 (4): 962–1023. doi:10.1086/231294.
- Enderwick, P., and P. Buckley. 2020. "Rising Regionalization: Will the Post-COVID-10 World see a Retreat from Globalization?" *Transnational Corporations* 27 (2): 99–112. doi:10.18356/8008753a-en
- European Commission. 2022. *The Power of Trade Partnerships: Together for Green and Just Economic Growth*. (COM(2022) 409 final). Brussels.
- Evenhuis, E. 2020. "Handbook on Regional Economic Resilience." In *New Directions in Researching Regional Economic Resilience and Adaptation*, edited by G. Bristow, A. Healy, and E. Evenhuis, 69–86. Cheltenham: Edward Elgar Publishing.



- Faggian, A., R. Gemmiti, T. Jaquet, and I. Santini. 2018. "Regional Economic Resilience: The Experience of the Italian Local Labor Systems." *The Annals of Regional Science* 60 (2): 393–410. doi:10.1007/s00168-017-0822-9.
- Foroohar, R. 2022. "Globalism Failed to Deliver the Economy We Need." *The New York Times*.
- Fratocchi, L., A. Ancarani, P. Barbieri, C. Di Mauro, G. Nassimbeni, M. Sartor, M. Vignoli, and A. Zanoni. 2016. "Motivations of Manufacturing Reshoring: An Interpretative Framework." *International Journal of Physical Distribution & Logistics Management* 46 (2): 98–127. doi:10.1108/IJPDLM-06-2014-0131.
- Fritsch, M., and P. Mueller. 2004. "Effects of New Business Formation on Regional Development Over Time." *Regional Studies* 38 (8): 961–975. doi:10.1080/0034340042000280965.
- Garud, R., A. Kumaraswamy, and P. Karnøe. 2010. "Path Dependence or Path Creation?" *Journal of Management Studies* 47 (4): 760–774. doi:10.1111/j.1467-6486.2009.00914.x.
- Gereffi, G. 2020. "What Does the COVID-19 Pandemic Teach Us About Global Value Chains? The Case of Medical Supplies." *Journal of International Business Policy* 3 (3): 287–301. doi:10.1057/s42214-020-00062-w.
- Gereffi, G., J. Humphrey, and T. Sturgeon. 2005. "The Governance of Global Value Chains." *Review of International Political Economy* 12 (1): 78–104. doi:10.1080/09692290500049805.
- Ghobakhloo, M. 2020. "Industry 4.0, Digitization, and Opportunities for Sustainability." *Journal of Cleaner Production* 252: 119869. doi:10.1016/j.jclepro.2019.119869.
- Giannakis, E., and A. Bruggeman. 2017. "Determinants of Regional Resilience to Economic Crisis: A European Perspective." *European Planning Studies* 25 (8): 1394–1415. doi:10.1080/09654313.2017.1319464.
- Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Giuliani, E. 2018. "Regulating Global Capitalism Amid Rampant Corporate Wrongdoing—Reply to "Three Frames for Innovation Policy"." *Research Policy* 47 (9): 1577–1582. doi:10.1016/j.respol.2018.08.013.
- Gong, H., R. Hassink, J. Tan, and D. Huang. 2020. "Regional Resilience in Times of a Pandemic Crisis: The Case of COVID-19 in China." *Tijdschrift voor Economische en Sociale Geografie* 111 (3): 497–512. doi:10.1111/tesg.12447.
- Grabher, G. 1993. "The Weakness of Strong Ties; the Lock-in of Regional Development in the Ruhr Area." In *The Embedded Firm: On the Socioeconomics of Industrial Networks*, edited by G. Grabher, 255–277. London, New York: Routledge.
- Grabher, G., and D. Stark. 1997. "Organizing Diversity: Evolutionary Theory, Network Analysis and Postsocialism." *Regional Studies* 31 (5): 533–544. doi:10.1080/00343409750132315.
- Grillitsch, M., B. Asheim, A. Isaksen, and H. Nielsen. 2022. "Advancing the Treatment of Human Agency in the Analysis of Regional Economic Development: Illustrated with Three Norwegian Cases." *Growth and Change* 53:1–28. doi:10.1111/grow.12583.
- Grillitsch, M., B. Asheim, and H. Nielsen. 2022a. "Temporality of Agency in Regional Development." *European Urban and Regional Studies* 29 (1): 107–125. doi:10.1177/09697764211028884.
- Grillitsch, M., B. Asheim, and H. Nielsen. 2022b. "European Urban and Regional Studies." *European Urban and Regional Studies* 29 (1): 107–125.
- Grillitsch, M., and M. Sotarauta. 2020. "Trinity of Change Agency, Regional Development Paths and Opportunity Spaces." *Progress in Human Geography* 44 (4): 704–723. doi:10.1177/0309132519853870.
- Grillitsch, M., M. Sotarauta, B. Asheim, R. Fitjar, S. Haus-Reve, J., Kolehmainen, H., Kurikka, K., Lundquist, M., Martynovich, S., Monteilhet, H., Nielsen, M., Nilsson, J., Rekers, S., Sopanen and L. Stihl. 2022b. "Agency and Economic Change in Regions: Identifying Routes to new Path Development Using Qualitative Comparative Analysis." *Regional Studies*, 1–16. doi:10.1080/00343404.2022.2053095.
- Halse, L., and O. Klymenko. 2022. "Research Handbook on Foreign Exit, Relocation and Re-Entry: Theoretical Perspectives and Empirical Evidence." In *Manufacturing Backshoring and Sustainability: Insights from the Norwegian Context*, edited by J. Larimo, P. Arte, C. Sousa, P.

- Ghuri, J. Mata, L. Lillebrygfeld Halse, and O. Klymenko, 292–309. Cheltenham: Edward Elgar Publishing.
- Hassink, R. 2010. “Regional Resilience: A Promising Concept to Explain Differences in Regional Economic Adaptability?” *Cambridge Journal of Regions, Economy and Society* 3 (1): 45–58. doi:10.1093/cjres/rsp033.
- Hobday, M., and H. Rush. 2007. “Upgrading the Technological Capabilities of Foreign Transnational Subsidiaries in Developing Countries: The Case of Electronics in Thailand.” *Research Policy* 36 (9): 1335–1356. doi:10.1016/j.respol.2007.05.004.
- Jensen, M., B. Johnson, E. Lorenz, and B. Lundvall. 2007. “Forms of Knowledge and Modes of Innovation.” *Research Policy* 36 (5): 680–693. doi:10.1016/j.respol.2007.01.006
- Kano, L., E. Tsang, and H. Yeung. 2020. “Global Value Chains: A Review of the Multi-Disciplinary Literature.” *Journal of International Business Studies* 51 (4): 577–622. doi:10.1057/s41267-020-00304-2.
- Laatsit, M., M. Grillitsch, and L. Fünfschilling. 2022. “Great Expectations: The Promises and Limits of Innovation Policy in Addressing Societal Challenges.” *Papers in Innovation Studies, 2022/09, CIRCLE Working Papers, Lund University: Lund*.
- Lasi, H., P. Fettke, H. Kemper, T. Feld, and M. Hoffmann. 2014. “Industry 4.0.” *Business & Information Systems Engineering* 6 (4): 239–242. doi:10.1007/s12599-014-0334-4.
- Lema, R., R. Quadros, and H. Schmitz. 2015. “Reorganising Global Value Chains and Building Innovation Capabilities in Brazil and India.” *Research Policy* 44 (7): 1376–1386. doi:10.1016/j.respol.2015.03.005.
- March, J. 1991. “Exploration and Exploitation in Organizational Learning.” *Organization Science* 2 (1): 71–87. doi:10.1287/orsc.2.1.71.
- Martin, R., and P. Sunley. 2014. “On the Notion of Regional Economic Resilience: Conceptualization and Explanation.” *Journal of Economic Geography* 15 (1): 1–42. doi:10.1093/jeg/lbu015.
- McCann, P. 2020. “Perceptions of Regional Inequality and the Geography of Discontent: Insights from the UK.” *Regional Studies* 54 (2): 256–267. doi:10.1080/00343404.2019.1619928.
- Meng, B., G. Peters, Z. Wang, and M. Li. 2018. “Tracing CO<sub>2</sub> Emissions in Global Value Chains.” *Energy Economics* 73: 24–42. doi:10.1016/j.eneco.2018.05.013.
- Menon Economics. 2022. *GCE Blue Maritime: Cluster Performance and Export Potential 2022*.
- Nam, K., and X. Li. 2012. “Out of Passivity: Potential Role of OFDI in IFDI-Based Learning Trajectory.” *Industrial and Corporate Change* 22 (3): 711–743. doi:10.1093/icc/dts031.
- Ntounis, N., C. Parker, H. Skinner, C. Steadman, and G. Warnaby. 2022. “Tourism and Hospitality Industry Resilience During the Covid-19 Pandemic: Evidence from England.” *Current Issues in Tourism* 25 (1): 46–59. doi:10.1080/13683500.2021.1883556.
- Nujen, B., and L. Halse. 2017. “Global Shift-Back’s: A Strategy for Reviving Manufacturing Competences.” In *Breaking up the Global Value Chain: Opportunities and Consequences*, edited by T. Pedersen, T. Devinney, L. Tihanyi, and A. Camuffo, 30, 245–267. Bingley: Emerald Publishing Limited.
- OECD. 2021. *Global Value Chains: Efficiency and Risks in the Context of COVID-19*. Paris: OECD.
- OECD. 2022. *Promoting Start-Ups and Scale-Ups in Denmark’s Sector Strongholds and Emerging Industries*. Paris: OECD: <https://www.oecd-ilibrary.org/content/publication/8f9bd7b0-en>
- Phillips, N., R. Bhaskaran, D. Nathan, and C. Upendranadh. 2014. “The Social Foundations of Global Production Networks: Towards a Global Political Economy of Child Labour.” *Third World Quarterly* 35 (3): 428–446. doi:10.1080/01436597.2014.893486.
- Pike, A., S. Dawley, and J. Tomaney. 2010. “Resilience, Adaptation and Adaptability.” *Cambridge Journal of Regions, Economy and Society* 3 (1): 59–70. doi:10.1093/cjres/rsq001.
- Porter, M. 2000. “Location, Competition, and Economic Development: Local Clusters in a Global Economy.” *Economic Development Quarterly* 14 (1): 15–34. doi:10.1177/089124240001400105.
- Research Council of Norway. 2018. *Kunnskapsgrunnlag Møre og Romsdal 2018, FoU-Basert Innovasjon I Næringslivet - Statistikk og Indikatorer*. Lysaker: Norges Forskningsråd.
- Rhodes, C. 2017. “The Imperative for Regenerative Agriculture.” *Science Progress* 100 (1): 80–129. doi:10.3184/003685017x14876775256165.

- Rikap, C. 2021. *Capitalism, Power and Innovation: Intellectual Monopoly Capitalism Uncovered*. London: Routledge.
- Rodrik, D. 2019. "Globalization's Wrong Turn, And How it Hurt America." *Foreign Affairs*.
- Rodríguez-Pose, A. 2018. "The Revenge of the Places That Don't Matter (and What to Do About It)." *Cambridge Journal of Regions, Economy and Society* 11 (1): 189–209. doi:10.1093/cjres/rsx024.
- Saxenian, A., and C. Sabel. 2008. "Roepke Lecture in Economic Geography Venture Capital in the "Periphery": The New Argonauts, Global Search, and Local Institution Building." *Economic Geography* 84 (4): 379–394. doi:10.1111/j.1944-8287.2008.00001.x.
- Schmitz, H., and S. Strambach. 2009. "The Organisational Decomposition of Innovation and Global Distribution of Innovative Activities: Insights and Research Agenda." *International Journal of Technological Learning, Innovation Development and Change* 2 (4): 231–249. doi:10.1504/IJTLLID.2009.026816
- Schot, J., and W. Steinmueller. 2018. "Three Frames for Innovation Policy: R&D, Systems of Innovation and Transformative Change." *Research Policy* 47 (9): 1554–1567. doi:10.1016/j.respol.2018.08.011.
- Schumpeter, J. 1911. *Theorie der Wirtschaftlichen Entwicklung*. Leipzig: Duncker & Humbolt.
- Simmie, J. 2012. "Path Dependence and New Technological Path Creation in the Danish Wind Power Industry." *European Planning Studies* 20 (5): 753–772. doi:10.1080/09654313.2012.667924.
- Simon, H. 2009. *Hidden Champions of the Twenty-First Century: The Success Strategies of Unknown World Market Leaders*. Berlin: Springer Science & Business Media.
- Sotarauta, M., and A. Beer. 2021. *Handbook on City and Regional Leadership*. Cheltenham: Edward Elgar.
- Sotarauta, M., and M. Grillitsch. 2023. "Path Tracing in the Study of Agency and Structures: Methodological Considerations." *Progress in Human Geography* 27 (1): 85–102. doi:10.1177/03091325221145590.
- Strambach, S., and G. Pflitsch. 2020. "Transition Topology: Capturing Institutional Dynamics in Regional Development Paths to Sustainability." *Research Policy* 49 (7): 104006. doi:10.1016/j.respol.2020.104006.
- Uyarra, E., and K. Flanagan. 2010. "Understanding the Innovation Impacts of Public Procurement." *European Planning Studies* 18 (1): 123–143. doi:10.1080/09654310903343567.
- Vonnahme, L., and T. Lang. 2021. "Hidden Champions in Rural Germany: Innovation Strategies to Compete in Global Markets." In *The Rural Enterprise Economy*, edited by B. Leick, S. Gretzinger, and T. Makkonen, 35–52. New York: Routledge.
- Wade, R. 2017. "The American Paradox: Ideology of Free Markets and the Hidden Practice of Directional Thrust." *Cambridge Journal of Economics* 41 (3): 859–880. doi:10.1093/cje/bew064.
- Weber, K., and H. Rohracher. 2012. "Legitimizing Research, Technology and Innovation Policies for Transformative Change: Combining Insights from Innovation Systems and Multi-Level Perspective in a Comprehensive 'Failures' Framework." *Research Policy* 41 (6): 1037–1047. doi:http://doi.org/10.1016/j.respol.2011.10.015.
- Wiesmann, B., J. Snoei, P. Hilletoft, and D. Eriksson. 2017. "Drivers and Barriers to Reshoring: A Literature Review on Offshoring in Reverse." *European Business Review* 29 (1): 15–42. doi:10.1108/EBR-03-2016-0050.
- Yeung, H., and N. Coe. 2015. "Toward a Dynamic Theory of Global Production Networks." *Economic Geography* 91 (1): 29–58. doi:10.1111/ecge.12063.