Towards an Evolutionary Perspective on Institutions in Economic Geography

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Abstract

There is a long-standing body of literature on the role of institutions for regional development in which it is common to treat institutions as static and as if they operate in isolation. We present an evolutionary perspective on institutions instead. We propose a dynamic and systemic framework on institutions that focuses on complementarities and institutional change. This allows to take up questions in economic geography that have not yet been fully addressed: (1) how complementarities across institutions affect the ability of regions to diversify into new activities; (2) how an complementarity framework on institutions sheds light on the question what is possible, and what is not, when implementing institutional change in territorial contexts; and (3) how such a framework may contribute to a better understanding of how changes in regional innovation or mission-oriented policies may, or may not, become effective. Doing so, the paper aims to contribute to the further integration of institutions in Evolutionary Economic Geography.

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1. Introduction

A large body of literature has drawn attention to the role of institutions for regional development (Saxenian 1994; Morgan 1997; Storper 1997; Cooke and Morgan 1998; Martin 2000; Acemoglu et al. 2005; Asheim and Gertler 2005; Asheim and Coenen 2006; MacKinnon et al. 2009; Farole et al. 2010; Gertler 2010; Tabellini 2010; Rodríguez-Pose 2013). This has led to valuable insights in the importance of institutions for economic development and innovation at various spatial scales. However, in many of these accounts, scholars treat institutions as static and as if they operate in isolation from each other.

The first objective of the paper is to leave behind such a static perspective on institutions. We propose instead a systemic and dynamic evolutionary framework that accounts for institutional complementarities and institutional change. The second objective is to set out a research agenda that aims to tackle a number of outstanding issues in economic geography from such an evolutionary perspective on institutions. First, we explore how complementarities across institutions affect diversification processes in regions. Building on the notion of institutional complementarities (Hall and Soskice 2001; Streeck and

Thelen 2005) and following Carvalho and Vale (2018), we present the concept of institutional relatedness as an alternative mechanism to explain in which activities regions diversify over time. In other words, we propose an explanatory framework to address regional diversification from an institutional perspective, taking on board the relatedness principle (Boschma 2017; Hidalgo et al. 2018). Second, we set out how this framework on institutional complementarities sheds light on the question what is possible, and what is not, when implementing institutional change in specific territorial contexts. It underlines the importance of institutional change to enable structural change (Nelson 1994; Murmann 2003), while it adds the question of the feasibility or likelihood of institutional change in relation to the current institutional context of regions. In other words, it aims to provide an explanation for the type and directionality of institutional change in regions, rather than stressing the importance of institutional change *per se*. Doing so, it sheds light on the often neglected question why some regions are successful in making institutional change in directions that support regional development, while other regions fail to do so. Third, we explore how such an evolutionary perspective on institutions could contribute to a better understanding of how regional innovation policies may, or may not, become effective in specific regional settings. We build on the idea proposed by the policy mix literature that policies do not take place in vacuum but unfold in institutional and policy contexts (Gunningham and Sinclair 1999; OECD 2010; Uyarra 2010). Doing so, we propose an evolutionary analytical framework that aims to identify systematically complementarities between policies and between policies and institutions (Mealy et al. 2025). Overall, such a research agenda aims to contribute to the further integration of institutions in Evolutionary Economic Geography (Boschma and Frenken 2009; MacKinnon et al. 2009, 2019; Dawley et al. 2015; Pike et al. 2015; Gong et al. 2022).

The structure of the paper is as follows. Section 2 presents a brief, critical review on some static and dynamic perspectives on institutions in economic geography. Section 3 proposes an evolutionary perspective on institutions in economic geography that accounts for such critique, building on institutional complementarities and institutional change. Section 4 discusses promising applications on topics such as regional diversification, institutional change, and the feasibility of regional innovation policies. Section 5 concludes.

2. A critical review of perspectives on institutions in economic geography

The literature on institutional approaches in economic geography is huge and diverse (e.g. Martin 2000; Farole et al. 2010; Gertler 2010; Rodríguez-Pose 2013). It is therefore impossible to give a complete and exhaustive overview of this rich body of literature. Broadly speaking, it explores which institutions might be considered good or bad for regional development. A distinction is often made between formal institutions (such as property rights and rules of laws) and informal institutions (like norms and values) (Rodríguez-Pose and Storper 2006). For instance, many studies have focused on the uneven spatial pattern of social capital, which Bourdieu (1986) described as a resource that is derived from social networks and group membership. Putnam et al. (1993) highlighted the economic benefits of social capital as embodied in social networks, mutual trust, and norms of reciprocity. Social capital became a key factor to explain the rise of Italian industrial districts, because it lowered transaction and coordination costs (Becattini 1987). This led to the resurgence of the region as a key socio-economic entity, despite globalization (Storper 1997). More recently, attention has shifted to the importance of quality of government for regional development (Charron et al. 2014; Rodríguez-Pose and Di Cataldo 2015; Cortinovis et al. 2017).

This literature made numerous valuable contributions on the importance of institutions. However, in many of these accounts, institutions have been treated as static entities. And often for good reasons, as institutions are stable in the short-run and subject to inertial forces (North 1990; Setterfield 1997; Martin and Sunley 2006). The literature on regional lock-in and path dependence (Grabher 1993; Arthur 1994; Hassink 2005; Pike et al. 2009; Martin 2010) suggested this has detrimental effects for long-term regional development, as it may go at the expense of adaptability. To develop new regional growth paths, institutions need to be created and transformed, and existing institutions might have to be abandoned or abolished (Nelson 1994). This insight led to the belief there is a need to leave behind a static perspective on institutions. Institutions need to be constructed, as existing institutions are unlikely to match the requirements of new activities, and can even contest their emergence (MacKinnon et al. 2009; Dawley et al. 2015). For instance, Murmann (2003) explained the rise of the synthetic dye industry in Germany, and not in France, in the late nineteenth century, because Germany induced institutional reforms, such as the establishment of a training and university system in chemistry and R&D labs.

This dynamic perspective on institutions provided new insights concerning the importance of institutional change to develop new techno-economic trajectories. However, institutional change often remained largely unexplained. It has therefore been complemented by studies focusing on institutional change at the micro-level, such as the literature on institutional entrepreneurs (Garud et al. 2002; Maguire et al. 2004; Battilana et al. 2009) and agents of change (Sotarauta and Pulkkinen 2011; Sotaurata et al. 2012; Dawley et al. 2015; Binz et al. 2016; Grillitsch and Sotarauta 2020; Heiberg et al 2020). They refer to institutional players who engage in collective action to mobilize resources, build legitimacy, and create institutions to support new path development. This role of agency or 'bricolage' (Garud and Karnøe 2003; Boschma et al. 2017; Carvalho and Vale

2018), to create their own conditions of growth, is associated with a mismatch between the needs of new activities and the prevailing cognitive and institutional environment in which new path creation unfolds (Storper and Walker 1989; Boschma 1997). This has led to important insights in what type of actors are involved in institution-building in particular places, but there is still little attention to the role of enabling regional factors (Miörner 2020). If agency induces institutional change, is it more likely to happen in some regional institutional settings, instead of others? How is institutional change influenced by the regional (institutional) context where that unfolds? And can we explain the direction of institutional changes in regions?

To some degree, some of these questions have been taken up by studies that focus on types of institutional change, such as layering, conversion, or drift (Strambach 2010; Bathelt and Glückler 2014; Rocco and Thurston 2014; Glückler and Lenz 2018; Hu and Yang 2019; Strambach and Pflitsch 2020), following the seminal typology of Thelen (2004). They argue that new path creation does not necessarily mean that regions break with their institutional past (Strambach and Klement 2012). Agents can deviate from established paths by creating institutions that support their activities without undermining the overarching institutional system (Mahoney and Thelen 2010; Strambach 2010). Institutional layering is a good example, in which institution-building happens on top of or alongside existing institutions (Thelen 2004). However, this still leaves unanswered the question of why some regions can make the required institutional change, while other regions fail to do so. This literature also says little on the relationship between specific activities and the nature of institutional change, in particular its directionality in regions.

In sum, we argue there is a need to go beyond static perspectives on institutions in economic geography to understand structural change in regions. We outlined some important steps forward in the study of institutional change in regions, but some gaps remain. We still have little understanding of which regions are successful in making institutional change while others fail, and why. What explains institutional change? To what extent do institutional legacies enable or set limits to the type and direction of institutional change? To what extent is the creation of some institutions more feasible in specific territories? Is it possible to define an institutional opportunity space for regions? We take up these issues by proposing a regional evolutionary framework that builds on the interplay between institutional complementarities and institutional change.

3. Toward an evolutionary perspective on institutions in economic geography

It is still rather common to assess the role of institutions as if they operate in isolation[1]. This stands in contrast to scholars that adopted a systemic approach to institutions (Streeck and Thelen 2005), such as the regulation theory (Boyer 1988) and the varieties of capitalism literature (Hall and Soskice 2001; Amable 2003; Hall and Gingerich 2009; Hall and Thelen 2009)[2]. They look at institutional structures as systems and investigate whether different elements might be considered coherent (Streeck and Thelen 2005). Countries accumulate a set of institutions that are tightly connected to each other and therefore hard to change. Complementarities between institutions exist when they reinforce each other and make one another efficient (Amable 2000; Hollingsworth 2000). Institutional systems

[1] In economic geography, interactions between two institutional variables might be taken into account (Cortinovis et al. 2017), or one employs an institutional index that consists of many institutional variables, such as the Quality of Government index (Charron et al. 2014; Rodríguez-Pose and Di Cataldo 2015), without paying too much attention to the extent to which these institutions form a system, and how complementary a set of institutions in a country or region is.

[2] A core claim of Varieties of Capitalism literature is that countries have remained very different in the way they coordinate their economic actions, despite globalization. Such a systemic view on institutions argues that institutions may reinforce each other at the national scale, forming a system that includes industrial relations, education and research, finance, and the welfare state. Hall and Soskice (2001) generated valuable insights but also met with criticism for its lack of comprehensiveness (limited coverage of countries), its methodological nationalism (how about regional varieties?), its prime focus on functionalism (what about internal tensions?), its predefined nature (what about revealed relatedness?), its key focus on stability (what about transformations?), and its limited empirical validity concerning economic outcomes.

are presented as ideal types on the basis of perceived complementarities between institutions within institutional systems (Crouch 2005; Hancké et al. 2007; Jessop 2011). Tensions and inefficiencies might arise when actors from countries with different institutional systems interact. Gertler (2004, 2005), for instance, showed that misunderstandings of many sorts arise when agents operate in institutional structures where different industrial practices prevail.

Such a systematic perspective explains why institutions are resistant to change, and why creating new institutions often fails, especially when they are incompatible with other institutions in the system. Deeg (2007), among others (Deeg and Jackson, 2007; Schneider and Panescu 2012; Amable and Palombarini 2009; Hay 2020), argued that institutional complementarities are tightly linked to institutional change: "…. institutional change does happen and, logically, if complementarities exist then the process of change must be shaped in some way by them" (p. 611). Consequently, institutional complementarities may be an enabling factor, also because one expects little resistance to institutional change in territories where overlap exists with existing institutions.

Such a view on institutional complementarities and change has remained rather underexplored in economic geography (Gertler 2018), with some exceptions (Peck and Theodore 2007; Crouch et al. 2009; Brenner et al. 2010; Ebner 2016; Menzel and Kammer 2019; Strambach and Pflitsch 2020). Part of the explanation is that the varieties of capitalism literature suffers from methodological nationalism, overlooking regional varieties inside institutional systems (Asheim and Coenen 2006; Gertler 2010). When regional studies embrace the concept of institutional complementarities, they tend to stay close to Hall and Soskice (2001) and follow a functional approach in which institutional complementarities are predefined, not revealed. Consequently, no regional comparative studies yet exist that show which combinations of institutions regions actually make in practice, and how that affects institutional change.

To study the dynamic interplay between institutional complementarities and change requires an analytical framework that identifies systematically revealed complementarities between institutions and defines opportunity sets of territories to implement institutional change given their existing sets of institutions. For each research topic, this requires a selection of relevant institutions and a method to identify their complementarities[3]. One possible method (but definitely not the only one) is co-occurrence analysis of the portfolios of institutions of regions. Inspired by the concept of 'product space' (Hidalgo et al. 2007), one identifies the relatedness of institutions by determining which institutions are often (never) combined at the subnational scale. Such a continuous variable measures the degree of relatedness between each pair of institutions. If two institutions co-occur in the portfolios of many regions, the two institutions are assumed to complement each other by reinforcing their functioning. If two institutions never co-occur at the regional level, they might have nothing in common. Such an 'institutional space' could be visualized as a network in which each node stands for an institution, and each link between two nodes signals institutional complementarity.

Formally, the relatedness (ϕ) of institutions i and j at year t is defined as:

$$\phi_{ijt} = \min\left\{P\left(x_{it} \mid x_{jt}\right), P\left(x_{jt} \mid x_{it}\right)\right\} \tag{1}$$

[3] The work of Hofstede ([1980]2001) on cultural proximity is another good example. Hofstede identified groups of countries that share similar cultural work-related values on multiple dimensions: individualism–collectivism, uncertainty avoidance, long-term orientation, masculinity–femininity and power distance. Other typologies of countries on institutional similarity have focused on institutional profiles (Kostova 1997), comparative corporate governance (Aguilera and Jackson 2003; Jackson and Deeg 2008), or comparative capitalism (Schedelik et al. 2021).

where $P(x_{i,t} | x_{j,t})$ is the conditional probability of having an institution i, given that the region has an institution j, and $P(x_{j,t} | x_{i,t})$ is the conditional probability of having an institution j, given that the region has an institution i.

4. Applications of an evolutionary perspective on institutions in economic geography

4.1 Regional diversification

The proposed framework can be applied to explain how territories diversify into new activities and develop new growth paths, a topic that has been extensively studied in the past two decades. The regional diversification literature argues that local capabilities condition which new activities are feasible to develop (Hidalgo et al. 2007; Neffke et al. 2011a). A key insight is that regions are more likely to develop new activities (such as technologies, industries, trademarks, occupations) that require capabilities related to existing activities (Boschma 2017; Hidalgo et al. 2018). A wide range of capabilities might be involved in this respect. Studies often focus on knowledge or skill relatedness, that is, whether activities share similar knowledge or skill requirements (Neffke et al. 2011a; Neffke and Hennig 2013), but almost no study is focusing on institutional relatedness (Peng et al. 2005) and whether new activities require institutions similar to those that support other activities (Content and Frenken 2016)[4].

[4] Scholars have addressed the relationship between institutions and regional diversification (Menzel and Kammer 2019). Boschma and Capone (2015) tested whether (formal) institutions do matter for the type of diversification that prevails in countries. Inspired by Hall and Soskice (2001), they found that institutions that regulate less tightly labor, capital and product markets give countries more freedom to diversify in less related activities. Cortinovis et al. (2017) found that bonding social capital and low quality of government turned out to have a devastating impact on diversification in European regions. However, what these studies did not investigate is whether different activities require similar institutions, and if so, whether this may explain regional diversification.

Carvalho and Vale (2018) were the first to take up the concept of institutional relatedness across sectors and apply it to the topic of regional diversification. They claim that "the degree to which institutions associated with certain industries or activities can be transposed to provide resources and legitimacy to new industries may provide new avenues to understand path creation …" (p. 291) . Following Boxenbaum and Battilana (2005), Padgett and McLean (2006) and Padgett and Powell (2012), they build on the concept of institutional transposition in which institutions new to a field are transposed from another field. In this way, institutional relatedness is proposed as an alternative explanation for regional diversification, besides technological or skill-relatedness, in which "….. the transposition of related institutional settings within regions to amplify (or to limit) the search space for new industries" (p. 291) is highlighted. Carvalho and Vale (2018) focused on the local presence of institutional norms and practices associated with commercialization of academic research and knowledge transfer routines across firms and universities, among other institutions, that facilitated the rise of biotech in the Portuguese region of Norte. A study by Skog and Solvell (2020) showed that business practices defining product quality and price setting were quite similar between slave and wine trades, which enabled the French city of Bordeaux to shift from slave to wine trade in the nineteenth century. Punt et al. (2022) applied the concept of institutional transposition to explain the prevalence of the cooperative form in renewable energy production in German districts.

These case studies contribute to a new understanding of the role of institutions in regional diversification. However, systematic comparative studies are still missing that employ an unifying framework to assess the diversification opportunity sets of territories and to determine the relative importance of institutional relatedness, besides other forms of relatedness (such as technological or skill relatedness), for regional diversification. This is a challenging task because it implies to determine the extent to which institutions are activity-specific (such as technologies, industries, occupations), and if so, which activities have similar institutional requirements. Malerba (2002) among others (Deeg 2007) argued that each activity is embedded in a particular set of institutions that shape how innovation and learning occur. But activities, in turn, also have institutions in common with some, but not all activities. This is a key claim that Hall and Soskice (2001) made themselves, proposing an explicit link between institutional systems and the types of activities countries specialize in, with a focus on the distinction between science-based industries and radical innovations versus medium-tech sectors and incremental innovations[5].

The proposed framework has the potential to explain the role of institutions for regional diversification, but no studies have yet taken on this task. This can be done in three ways,

A first, simple way to probe the effect of institutions on regional diversification is to count the co-occurrence of activity *i* and institution *k* in regions. A minimum score would indicate no co-occurrences of activity *i* and institution *k* in any region, while a maximum score would indicate a perfect co-occurrence of activity *i* and institution *k* in all regions in which they appear. One can then predict that a region that is not specialized in activity *i* but that host many of the institutions that often co-occur with activity *i*, will enter activity *i* in the near future.

A second way is to start again from the matrix above that includes the number of co-occurrences of each activity and institution at the regional level, with a minimum score indicating no co-occurrences of activity *i* and institution *k* in any region, and a maximum

[5] Studies found little support for such type of economic specializations and innovations that would prevail in an institutional system (Akkermans et al., 2009; Boschma and Capone 2015; Meelen et al. 2017).

score a perfect co-occurrence of activity i and institution k in all regions. Then, one can derive a similarity measure of activity-specific institutional profiles across regions. A minimum score would indicate that two activities have no overlap whatsoever in their institutional profiles at the regional level, while a maximum score would show there is a perfect overlap in the institutional profiles of the two activities across regions in which they appear. This will be used as an input to construct a relatedness density measure in which the probability of a new activity i in a region is depending on the sum of all institutional similarities between activity i and all activities j in which the region is already specialized, as done in past studies using other relatedness density measures (Boschma 2017; Hidalgo et al. 2018). The more institutionally related activities are present in the region, the higher the probability that the region will develop that activity.

A third way is to construct a relatedness measure between each pair of institutions, based on the co-occurrence of institutions in the institutional portfolio of each region, as in equation 1. If two institutions never co-occur at the regional scale, they might have nothing in common, but when they do occur at a very high frequency, they might reflect institutional complementarities and reinforce their functioning. This will be used as an input to construct an institutional relatedness density measure to assess the probability of activity i entering a region. Again, we first have to determine which institutions are related to activity i which is proxied by the co-occurrence of each activity and institution across regions, as explained above. Then, we sum for all institutions present in the region their institutional relatedness scores with activity i. This relatedness density measure around activity i will have a minimum score when no institutions exist in the region that are related to activity i, while it will show a maximum score when all institutions are present in the region that are related to activity i. In other words, this institutional relatedness measure indicates how institutionally close (or related) a potential new activity is to the institutional portfolio of a region.

4.2 Institutional change in regions

The proposed framework on institutional complementarities can be applied to provide a systematic explanation of institutional change. It underlines the importance of institutional change to enable the development of new growth paths, while it adds the question of the feasibility of institutional change in relation to the current institutional context of regions. Doing so, it sheds light on the often neglected question why some regions are successful in making institutional change, while other regions fail to do so.

There is widespread agreement that new economic activities can only develop fully when new institutions are created, or existing ones are transformed or abolished (Nelson 1994; Aldrich and Fiol 1994; Murmann 2003; Boschma and Frenken 2006). Institutions need to be constructed to enable their emergence, as existing institutions are unlikely to match the requirements of new activities, and may even contest their development (MacKinnon et al. 2009; Dawley 2014; Dawley et al. 2015; Fuenfschilling and Truffer 2016; Gong and Hassink 2019). This is well-illustrated by the literature on sustainability transition showing how the institutional logic of an entrenched techno-economic system can block the green transition (Coenen et al. 2010; Smith and Stirling 2010; Sengers and Raven 2015).

As discussed earlier, this begs the question why institutional change happens and where, to what extent regions differ in their ability to adapt[6], and if so, what type of institutional

[6] The possibility of institutional adaptability may be higher in regions with a wide range of different activities. In such a context, it may be harder for activities or powerful players to monopolize and dominate the design of institutions (Neffke et al., 2011b). So, diversified regions may be in a better position to make institutional change to support new path development, because there is redundant institutional capacity (Grabher 1993) and less opposition from vested players.

change is more likely to be implemented given their institutional structure. In evolutionary thinking, institutional change can be viewed as the outcome of both a search and a selection process that unfolds in particular territories. Institutions evolve in combination in regions which is part of a historical process that guides the search process for institutional change and acts as a selection mechanism that is conditioned by the existing institutional context (Bednar and Page 2018). Existing institutional legacies set limits to the type and direction of institutional change. It is unlikely that institutions are built from scratch: they rather draw on existing institutions which may also imply they meet less resistance (Thornton and Occasio 2008). This makes the creation of some institutions more feasible, depending on whether they are complementary to the existing set of institutions, while other combinations of institutions will not work (Amable 2000). As discussed earlier, we expect that regional diversification is facilitated when new industries require institutions similar (but not identical) to those of other related industries in the region, so new institutions can build on and expand within the overarching institutional set-up, with whom they share complementarities. As a result, the overarching institutional framework is not fundamentally challenged, and institution-building is less likely to be contested.

We still have little understanding of why some territories can make the required institutional change, while other territories fail to do so. Our proposed framework on institutional relatedness might contribute to a better understanding of why territories differ in their ability to induce institutional change, and why they might be able to diversify in some activities, but not in others. It would also allow to incorporate institutional change in a quantitative study on structural change that can compare many cases simultaneously.

So far, research on institutional change has largely been restricted to case studies (e.g. Gertler 2005; Strambach 2010; Bathelt and Gluckler 2014), in which discourse analysis is often employed (Philips et al. 2004; Schmidt 2008; Fuenfschilling and Truffer 2014). This has led to new valuable insights. Our proposed evolutionary framework is also equipped to apply quantitative comparative research tools to explain institutional change in regions. It is designed to test the extent to which institutional change is conditioned by existing institutional structures and whether the probability of successfully building a new institution is depending on the degree of relatedness with existing institutions in a region. This requires the measurement of the degree of relatedness between institutions through co-occurrence analysis, as expressed in equation 1, and the construction and measurement of an institutional relatedness density indicator, as proposed before.

4.3. Policy change in regions

While institutional change is induced by many agents of change outside the policy realm, policy interventions in a wide range of fields might also affect this. However, such policies are unlikely to take place in vacuum but unfold in institutional contexts that affect the ability of regions to implement institutional change and adopt successful policies. A telling example is the case of many peripheral regions that often suffer from institutional weaknesses that limit the effectiveness of policy, such as weak administrative capacity, poor collaboration culture, closed networks between vested players, and low quality of government (Karo and Kattel 2015; McCann and Ortega-Argiles 2015). Consequently, 'one-size-fits-all' policies should be replaced by 'one-size-fits-one' policies that adapt to the specific resources and needs of territories and be aligned to the specific institutional context in which they are implemented (Tödtling and Trippl 2005).

But it is not only about aligning policies to the institutional context. The policy mix literature (Crouch 2005; Howlett and Rayner 2007; Jessop 2011; Howlett et al. 2017) argues that policies should be understood and analyzed as a policy system, in which policy domains and instruments should be connected and integrated, also across different governance levels and over time (Uyarra 2010). Policies are not developed and adopted in isolation but in a context of pre-existing policies and institutional frameworks that have been shaped over time (Lambooy and Boschma 2001). History matters when new policies are introduced and adopted, but in a probabilistic rather than a deterministic manner. This implies that past policies provide opportunities but also constrain the range of policy options that can be effectively implemented (Uyarra 2010; Wolfe 2010)[7]. In other words, past policies condition the feasibility of new policies, providing opportunities but also setting limits to the types of policy change in regional contexts. As territories accumulate different sets of policies and institutions over time, there will be no room for 'one-size-fits-all' policy. There are limits to policy learning across regions that have little in common in terms of institutions and policy practices. Institutional learning across regions is more feasible and effective when sharing institutional complementarities.

The policy mix concept has attracted attention in (regional) innovation studies (OECD 2010; Uyarra 2010; Flanagan et al. 2011; Edler et al. 2013; Matti et al. 2017). The sustainability literature has also embraced the policy mix concept, as the green transition is perceived to require actions in many policy domains that need to be aligned and coordinated (Gunningham and Sinclair 1999; Rogge and Reichardt 2016; Matti et al. 2017; Rogge et al. 2017; Edmondson et al. 2019; Huang 2019). More recently, the policy mix approach is adopted by mission-oriented policy that aims to tackle societal challenges in a

[7] Uyarra (2010) underlined the importance of studying the dynamics of policies in such a policy context as follows: "interactions happen across policy domains, between instruments, across levels of governance and also across time … These interactions are dynamic and path-dependent, for policies are not adopted on a tabula rasa, but in a context of pre-existing policy mixes and institutional frameworks which have been shaped through successive policy changes. Past policy decisions would constrain the range of options available for current decision makers … Thus, while formulating policies, regions need not only take the knowledge and institutional base of the region as starting point, but also consider existing policy mixes and past policy history, for they will enable or constrain new policy goals" (p. 132).

systemic and coordinated way (Uyarra et al. 2025). Larrue (2021) proposed an analytical framework to explore the challenges, opportunities and bottlenecks in order to initiate, improve and activate mission-oriented policy mixes in countries.

Most work on policy mixes have adopted case study approaches. There is a tendency to follow a functional and normative approach on policy mixes in which the 'right' set of policies are predefined, instead of following an approach in which revealed policy mixes made in practice are examined. There is little comparative work in economic geography to date that investigates which regions make similar policy combinations, and why. And when policy change is studied in a policy mix context, there are few attempts to define the set of policy options in each territory, and to explore what policies or policy instruments are more likely to be adopted and more feasible to implement.

Our proposed evolutionary framework is in line with the policy mix idea that policies do not take place in vacuum but unfold in institutional and policy contexts. Our framework may have the potential to assess whether there is a good or bad fit between a policy change and the institutional context in which they are implemented, and which policies can be considered complementary and may effectively support each other. We expect the more related an institution or policy is to the existing set of institutions or policy mix in a territory, the more likely this (new) institution or (new) policy is likely to emerge and become successful. Similar to the construction of an 'institutional space' outlined before, this requires the build-up of a 'policy space' and an 'institutional-policy space', based on co-occurrences of policies (policy space) and co-occurrences of policies and institutions (institutional-policy space) in portfolios of regions. Besides accounting for other factors, such an evolutionary perspective could contribute to an understanding of how regional innovation or mission-oriented policies may, or may not, become effective in specific regional policy and institutional settings. To our knowledge, there is only one single study that has applied the concept of policy space, done at the national scale (Mealy et al. 2015). In line with our framework, they found that climate policy change is subject to path dependency: countries are more likely to introduce policies that are complementary to their prior policy making. In economic geography, the policy space concept has not yet been applied at the sub-national scale in such a quantitative comparative study.

5. Conclusions

The paper has argued there is a need to go beyond a static perspective on institutions in economic geography and to apply a systemic framework on institutions to understand structural change in regions. We outlined some important steps forward in the study of institutional change in regions, but it is fair to say some gaps remain. We still have little understanding of why some regions are successful in making institutional change while other regions fail, to what extent regional institutional legacies enable or set limits to the direction of institutional change, and to what extent the creation of some but not other institutions is more feasible in specific territories.

We propose an evolutionary framework that builds on literature that focuses on institutional complementarities and institutional change. We consider institutional complementarities as a territorial factor that may facilitate institutional change and promote structural change in regions, also because one expects little resistance to institutional change in territories where overlap or complementarities exists with existing institutions. Such a view has remained rather underexplored in economic geography.

We propose an analytical framework that identifies systematically revealed (rather than pre-defined) complementarities between institutions, and that has the potential to define opportunity sets of territories to implement institutional change, given their existing set of institutions. This requires a selection of relevant institutions and a method to identify their complementarities (Deeg 2007). One method (but definitely not the only one) is to construct an 'institutional space' (inspired by the 'product space' concept of Hidalgo et al. 2007), based on co-occurrence analysis of portfolios of institutions of regions. If two institutions co-occur in many regions, they are assumed to complement each other and reinforce their functioning, if they are never combined, the two might have nothing in common. Such a perspective enables to assess the feasibility of creating or adapting a specific institution given the current set of institutions at the regional level.

We discussed a number of promising applications in economic geography. First, we argued that institutional relatedness may provide an alternative explanation for regional diversification than other forms of relatedness (knowledge, skills) (Hidalgo et al. 2007; Neffke et al. 2011a). Studies have started to investigate whether different economic activities require similar institutions, and if so, whether this may explain diversification in countries and regions (Carvalho and Vale 2018). However, there are no systematic comparative studies yet that assess diversification opportunity sets of territories, given their current set of institutions. Second, the literature on institutional change (Nelson 1994; Thelen 2003; Streeck and Thelen 2005) has strongly argued that structural change requires the creation of new institutions and the restructuring of existing ones. However, there is still little understanding of why some territories might be more successful in doing so. The institutional relatedness framework has the potential to shed new light on the question what is possible, and what is not, because it argues that institutional change does not start from scratch but is embedded in existing institutions at various spatial scales. Institutional relatedness may be considered an enabling factor to implement institutional change, also because one expects little local resistance to institutional change in territories where such institutional overlap across activities exists. In other words, the existing institutional legacy in territories conditions the type and direction of institutional change which makes it a place-specific process. Third, the literature on policy mix has underlined the importance of coherent sets of policies across policy domains (Howlett and Rayner 2007; Uyarra 2010). Our framework has the potential to assess which policies can be considered complementary and thus may effectively support each other, and whether there is a fit or match between a proposed policy change and the institutional-policy context in which such change will be implemented. So far, there is little systematic knowledge of what policy combinations territories make in practice, what are feasible policy options in territories given their existing set of policies, and how one might assess the probability of a policy change to become effective in specific territorial contexts.

Such an ambitious research agenda that embraces such an evolutionary perspective on institutions also opens up many challenges that need to be addressed in future research. First, our proposed framework can identify what combinations of institutions and policies territories often make. A crucial question is: can one always interpret in a meaningful way the most common institutional or policy combinations? Second, it would be one thing to determine the extent to which place-specific institutional change is deeply embedded in the institutional context of a region. A subsequent challenge for future research is to outline the mechanisms through which such institutional change occurs. Third, to study such an evolutionary perspective on institutions, a multi-scalar approach is absolutely essential (Binz et al. 2014; Binz and Truffer 2017; Heiberg et al. 2020; Benner 2021). In principle, our proposed framework seeks to identify which combinations of institutions co-exist in a place. It includes institutions that have been created and shaped at different spatial scales (local, regional, national and international) that all come together in a specific place[8]. Our proposed framework could explore tensions or incompatibilities inside the region between institutions that have been formed and shaped at different spatial scales, such as regional and national institutions, for instance. Fourth, our comparative framework can identify which territories make similar combinations and thus share institutional and policy features, and which territories have nothing in common. This opens the question whether it would be possible to construct a meaningful typology or taxonomy of territories. Fifth, one could explore institutional coherence in each territory, based on how common combinations of institutions and/or policies are across territories. This would enable to test whether a coherent set of institutions or policy mix in a territory favours better performance, such as economic competitiveness, social well-being, and environmental sustainability, whether territories that make rare combinations reflect tensions/inefficiencies in their institutional-policy structures that makes them underperform, and whether territories in the same institutional or policy group perform in a similar way. Last but not least, large comparable high-quality datasets on many institutions and policy dimensions across many spatial entities at various scales are required to measure institutional and policy relatedness. This includes data on formal and informal institutions as well as features of policies at various spatial scales that allow for comparative analyses of regions. To an increasing extent this is the case, most of which include indicators based on perceptions of citizens, companies and experts that are derived from large-scale surveys, especially at the national scale (e.g. Rule of Law-index, Worldwide Governance Indicators (Kaufmann et al. 2010), Economic Freedom Index, Instititional Profiles, World Value Surveys (Inglehart et al. 2022) and European Value Surveys), but also at the regional scale, such as the Quality of Government dataset (Charron

[8] This is not to deny that many institutions are not built at a specific spatial scale and therefore it might be hard to associate them with certain places (Grillitsch 2015).

et al. 2014, 2016), the Regional Authority Index (Hooghe et al. 2016; Rodríguez-Pose and Tselios 2018) and the Public Spending Quality Index (Fazekas and Czibik 2021). Regional institutional and policy data using web-mining and machine learning techniques are also becoming increasingly available (Ozgun and Broekel 2022; Schütz et al. 2025).

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