

# How local resources shape innovation and path development in rural regions. Insights from rural Estonia

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## Abstract

*This paper examines the role of local resources (physical, human, immaterial, social and community, and financial) in shaping firm innovation and path development in rural areas. Existing research in spatially informed innovation studies has largely overlooked the place-specific resources of rural regions as innovation facilitating qualities. This paper addresses the following research questions: (i) what is the role of local rural resources in a firm's innovation activities, and (ii) how do these resources shape regional development paths? We propose a framework that takes a holistic view of rural resources and their role in shaping innovation and regional development paths. The empirical analyses suggest that rural resources offer valuable and diverse opportunities for firm innovation, providing that firms (pro-)actively mobilize and purposefully exploit these resources as part of their innovation endeavors. We find that rural resources have the potential to extend and upgrade regional development paths and operate as ingredients to enrich existing paths with additional functions and, thereby, to make them more future-oriented. However, merely relying on rural resources does not suffice to facilitate substantial changes in regional paths. Our analyses are based on semi-structured interviews with representatives of firms located in rural Estonia, active in different manufacturing and service industries. This paper contributes to the emerging, but still fragmented, literature on rural innovation and offers a contextually grounded micro-level framework on the role of local rural resources for firm innovation in rural areas. Furthermore, the study adds an empirical contribution from a rarely studied Central and Eastern European regional context.*

**Keywords:** local resources, rural regions, innovation, development path, resources, Estonia

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## INTRODUCTION

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A central assumption in economic geography is that innovation is largely influenced by local and regional conditions (Isaksen & Karlsen, 2016; Müller & Korsgaard, 2018). While firm innovation is generally assigned a key function in regional development (Torre & Wallet, 2016), the discourse on innovation and space can be linked to a distinct urban bias in both theoretical and empirical accounts (Shearmur, 2017; Solesvik & Gulbrandsen, 2014; Torre, 2015). As urban qualities such as density, proximity and diversity support interactive processes of knowledge creation and diffusion, city regions are widely considered the centers of the innovation machine (Florida, Adler, & Mellander, 2017). Consequently, the innovation capacities of rural and peripheral regions, as well as their actors, remain substantially understated (Eder, 2019; Graffenberger & Vonnahme, 2019).

In this paper, we define innovation as an interactive process which results in products or processes that are at least new on the firm level (OECD/Eurostat, 2005). Due to prevailing high-tech perceptions of innovation (Hansen & Winther, 2011), specific qualities of rural regions, such as historically embedded knowledge and physical or social resources (Ring, Peredo, & Chrisman, 2010; Spyridakis & Dima, 2016; Stathopoulou, Psaltopoulos, & Skuras, 2004), are commonly considered irrelevant and, consequently, largely neglected in theoretical debates and empirical studies. However, it is increasingly stressed that rural regions and their distinct physical, social and economic milieus can act as productive environments for innovation and entrepreneurship (Fitjar & Rodríguez-Pose, 2011; Korsgaard, Ferguson, & Gaddefors, 2015; Mayer & Baumgartner, 2014). Notwithstanding, the extent to which local resources in rural regions facilitate innovation and how firms exploit these resources and shape regional trajectories have so far received only minor attention (Eder & Trippel, 2019; Pylak, 2015; Shearmur, Carrincazeaux, & Doloreux, 2016). By applying a holistic view on the role of rural resources in firm innovation, this paper addresses these gaps.

Evolutionary perspectives suggest that regional industrial trajectories follow path-dependent developments, i.e., present and future economic action is directed by past activities, contexts, and events (Martin & Sunley, 2006). Path development processes operate along a continuum ranging from rather continuity-driven and incremental developments to considerable change and novelty (Garud & Karnøe, 2001; Grillitsch, Asheim, & Trippel, 2018; Isaksen, Jakobsen, Njøs, & Normann, 2019). Consequently, current exploitation practices of resources in rural (and urban) regions have partly been shaped by past economic cycles. In turn, local resources, as determinants of firm innovation, directly and indirectly condition future paths. Nevertheless, path development

does not constitute a fully deterministic process but points to an open-ended nature (Martin & Sunley, 2006), highlighting the importance of agency (Huggins & Thompson, 2019; Isaksen et al., 2019; Sotarauta & Suvinen, 2018).

Agency, broadly defined as the capacity to do certain things (and not others) to produce particular effects (Emirbayer & Mische, 1998; Garud, Kumaraswamy, & Karnøe, 2010; Sotarauta & Suvinen, 2018), can be understood as a process through which opportunities are consciously recognized, mobilized and exploited (Garud, Kumaraswamy, & Karnøe, 2010; Huggins & Thompson, 2019). In rural regions, such opportunities might relate to specific endowments with physical, human, social, and immaterial resources. A common message from different agency conceptions is that it operates as an essential enabler for regional development (Grillitsch & Sotarauta, 2018; Huggins & Thompson, 2019). In particular, it has been argued that its facilitating function is potentially more significant in rural than in institutionally thick regions (Isaksen et al., 2019; Plüschke-Altöf & Grootens, 2019). In this paper, the notion of agency is used as a lens that allows one to understand more comprehensively how firms construct and exploit local resources.

Along these lines, this paper aims at providing contextually grounded micro-level understandings on the use of local rural resources for innovation. It addresses the following research questions: (i) what is the role of local rural resources in a firm's innovation activities, and (ii) how do these resources shape regional development paths? Our results suggest that rural resources provide valuable and diverse opportunities for firm innovation, which, however, have to be recognized and actively exploited. We also find that rural resources have the potential to extend and upgrade regional development paths and, thereby, operate as valuable ingredients to renew regional paths and to make them more future-oriented. Nonetheless, the exploitation of rural resources alone does not suffice to facilitate substantial changes in regional development paths but needs coupling with extra-local (re)sources.

Methodologically, this study adopts an exploratory, qualitative case design and is based on interviews with owners/managers of innovating firms. Due to its conceptual and methodological orientations, this paper contributes to emerging discussions and expands existing literature on innovation in rural regions, in particular on the role of rural resources in shaping innovation and regional development paths. It analyses five distinct resource categories and proposes a model on the role of local resources in innovation. Furthermore, it broadens the scope of existing research in regional innovation studies, as we provide rather rare empirical insights from Central and Eastern Europe and the north-eastern fringe of the European Union (Eder, 2019; Golejewska, 2018; Květoň & Blažek, 2018).

The remainder of the paper is structured as follows: The second section presents the theoretical framework, illustrating the function of rural resources in innovation processes and how innovations that build on these resources might shape regional development paths along continuity and change. The third part provides a contextual description of the study area and presents the methodological approach to data collection and analysis. The fourth section presents and details the central findings. The results are further discussed, reflected upon, and linked to the outlined theoretical perspectives in the fifth section. The paper finishes with concluding remarks and reflections regarding policy implications.

## LITERATURE REVIEW

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### Rural resources and firm innovation

Both urban and rural regions are highly heterogeneous spatial units which offer particular, yet distinct, resources for innovation and regional development. Features such as human resources, knowledge bases, institutional arrangements, and networks are emphasized as innovation supporting elements (Isaksen & Karlsen, 2016). Rather than adopting mainstream perspectives that frame rural conditions foremost as constraints, place-specific features of rural regions such as embedded knowledge, preserved routines and physical resources as well as cultural and historical landscapes can, and should be, more broadly perceived as valuable resources for entrepreneurship and innovation (Eder & Trippel, 2019; Golejewska, 2018; Müller & Korsgaard, 2018; Korsgaard, Ferguson, & Gaddefors, 2015). However, it should not be supposed that innovation based on resources locally available to rural firms lead to similar (i.e., high-tech and science-based) outcomes that can be frequently observed in urban areas.

The value of local rural resources, and in particular their purposive exploitation, is not fully determined but can be shaped by local firms. In this sense, the capacity to identify, access and construct specific meaning(s) from these resources reflects the agency of firms and actors in rural regions (Garud, Kumaraswamy, & Karnøe, 2010; Huggins & Thompson, 2019; Ray, 2001). To successfully utilize and exploit local resources, firms need to have basic understandings – which might relate to single individuals, firms and organizations (individual agency) or be exercised through interdependent action, coordinated for example by local and extra-local groups/networks (collective agency) (Emirbayer & Mische, 1998; Sotarauta & Suvinen, 2018). Furthermore, as the value of these resources is subjective, there will be

differences in the extent to which firms mobilize and exploit rural resources. In the following sections, we conceptualize the resources of rural regions along with a heuristic developed by Müller and Korsgaard (2018), differentiating five interrelated dimensions: physical resources, human resources, immaterial resources, social and community resources, and financial resources.

### **Physical resources**

Many rural firms, especially when active in traditional sectors such as food, agriculture and fishery, timber, energy, etc., intensively use physical resources which continue to be important factors for rural economies (Ring, Peredo, & Chrisman, 2010). Physical resources comprise, e.g. natural resources, raw materials, infrastructure, (immaterial) landscapes or vacant buildings (Müller & Korsgaard, 2018). Physical resources have a vital position in generating recreational opportunities and link to tourism activities (Mayer & Baumgartner, 2014; Torre, 2015). The remoteness of rural regions, coupled with low population densities, has allowed the preservation of unique scenery, which favors the leverage of environmental features (Stathopoulou, Psaltopoulos, & Skuras, 2004). Exploiting physical resources in contemporary and non-traditional ways can help to create new value. In addition, distance, perceived as a physical resource, might prevent knowledge and technology diffusion and, consequently, induce the emergence of specific local niche developments (Eder & Trippl, 2019).

### **Human resources**

Human resources refer to the capacities of employees as well as regionally distinct local knowledge and practical expertise embedded in firms' processes and products (Müller & Korsgaard, 2018). While rural human resources are often characterized in negative terms such as brain-drain, productivity deficiencies, etc. (Kalantaridis, 2009; Ring, Peredo, & Chrisman, 2010; Ward & Brown, 2009), it can be observed that traditional knowledge and practical experience have been sustained precisely because of a certain state of remoteness (Gibson, 2016; Spyridakis & Dima, 2016; Stathopoulou, Psaltopoulos, & Skuras, 2004). Such embedded practices and techniques offer opportunities for innovation, especially when coupled with contemporary marketing approaches (Dinis, 2006) and/or scientific research (Cannarella & Piccioni, 2011). Accordingly, this knowledge might lead to innovations not possible elsewhere.

Moreover, the implementation of innovation also relates to the individual level. As the workforce of rural firms is often loyal (Isaksen & Karlsen, 2016; Kalantaridis, 2009) and less receptive to labor poaching (Eder & Trippl, 2019),

firms can draw on rich sets of human resources which, accumulated over time, might substantially contribute to a firm's internal capacities. Furthermore, collaboration with local/regional research institutions and professional schools can offer additional advantages by supporting human resource development and regional innovation capacity (Huggins & Johnston, 2009). Such institutions also act as brokers for accessing external networks (Virkkala, 2007).

### **Immaterial resources**

Immaterial resources such as traditions, cultural amenities and heritage, historic buildings, distinct images and specific local identities can be transformed into place-specific outcomes and brands (Dinis, 2006; Müller & Korsgaard, 2018). The interpretation and deliberate exploitation of immaterial resources can add regionally distinct value to a firm's innovation activities (Anderson, 2000). It has been highlighted that in particular, the food and tourism industries benefit from place-specific marketing that draws upon immaterial resources (Stathopoulou, Psaltopoulos & Skuras, 2004). Immaterial resources are directly and indirectly coupled with other sets of rural resources, such as human resources: new opportunities are identified and mobilized by existing knowledge bases and experiences of actors (Garud, Kumaraswamy, & Karnøe, 2010). In this sense, locally embedded knowledge and specific traditions can be treated as essential parts of local images which, if proactively and strategically exploited as part of agentic action, can operate as effective marketing instruments (Dinis, 2006; Plüschke-Altöf & Grootens, 2019).

It has also been mentioned that the entrepreneurial intentions of firms in rural regions are not always purely economic, efficiency seeking and pecuniary. Rather, a firm's intentions also relate to specific motivations to creatively mobilize local resources, images, and associations to expose localities to broader visibility (Huggins & Thompson, 2019; Lafuente, Vaillant, & Serarols, 2010). Furthermore, reputations for a high-quality of life and good living environments might operate as benefits and help to attract talented individuals to rural regions (Eder & Tripl, 2019; Shearmur, 2017).

### **Social and community resources**

Collective action, which emerges from interactive connections and surfaces as social networks, firm networks, partnerships and cooperatives (Müller & Korsgaard, 2018) is widely considered an essential innovation enabler (Camps & Marques, 2014). As for supplements to limited internal resources, it is particularly important for small firms (van Hemert, Nijkamp, & Masurel, 2012). In rural regions, collective action can be effectively facilitated through

institutional arrangements such as common understandings, coordinated goals, or shared identity and, thereby, become a place-specific quality (Isaksen & Karlsen, 2016). Sharing information, knowledge and skills expresses collective agency and assists the constructing of (individual and collective) meanings regarding local resources (Sotarauta & Suvinen, 2018). In this sense, social and community resources provide access to capacities located both within and outside a given locality (Ratajczak-Mrozek, 2014; Šumane et al., 2018). Moreover, it has been highlighted that the low actor densities of rural regions encourage interactions between rather dissimilar actors, inducing potentially productive diversity into social ties and firm networks (Mcpherson, Smith-Lovin, & Cook, 2001).

Family and friendship ties are important elements of business networks in rural regions (Siemens, 2010; Stathopoulou, Psaltopoulos, & Skuras, 2004). Family members and friends provide emotional support and are frequently recruited as employees. Thus, family and friendship ties are expanded into the business sphere and blur the boundaries between social and economic relations. Furthermore, connections between local actors favor the exploitation of embedded skills and knowledge (Cannarella & Piccioni, 2011). In this regard, Petrov (2011) concludes that social and community resources take on a central function for firm innovation in rural regions – providing that innovators actively involve communities and their diverse resources (e.g., human, financial, etc.). In addition, relations with local and regional decision takers, based on personal acquaintance, can facilitate extended support and equip governance processes with specific qualities (Eder & Trippel, 2019). However, it has also been highlighted that network relations that are socially too tightly knit are at risk of becoming over-embedded and hamper innovative potential (Atterton, 2007; Boschma, 2005).

### **Financial resources**

Innovation activities typically require upfront investments. Due to their rather small size, firms in rural areas lack internal financial resources and require access to external finance (van Hemert, Nijkamp, & Masurel, 2012). These can be grants, loans or special support and subsidy schemes available to rural firms on local (e.g., locally administered LEADER funds), national (e.g., funds from ministries) and EU levels. Conversely, it has been found that venture capital or angel funding sources are less important to rural firms (Müller & Korsgaard, 2018). Furthermore, rural firms appreciate support from location-specific funding schemes as these are associated with a broader recognition of innovative ideas – even though financial support is typically rather small (Müller & Korsgaard, 2018; Reidolf, 2016). Additionally, it can be highlighted

that rural areas account for cost advantages, as wages and land prices are lower compared to those in agglomerations.

Although firms from rural areas can access generic funding schemes, small and inexperienced firms especially, face distinct problems applying for and administering external funds and, thus, might choose not to apply for external finance (Korsgaard, Ferguson, & Gaddefors, 2015; Mayer & Baumgartner, 2014; Müller & Korsgaard, 2018). Consequently, these firms rely on self-financing, using savings or smaller sums acquired via informal channels (e.g., friends, family, acquaintances) (OECD, 2014; Siemens, 2010).

The previous sections provided a discussion on rural resources as innovation inputs. It should be pointed out that these resources are not strictly separated from each other but should rather be understood as interlinked. As an illustration, an empty house itself can be regarded as a rural physical resource, but in combination with immaterial resources (e.g., historical legend) it has greater value for marketing. Similarly, jam from local berries is assigned additional value if it is made according to a traditional regional recipe (Dinis, 2006). Moreover, local social networks can facilitate access to further resources and opportunities (Šumane et al., 2018), and amplify outcomes when local actors act jointly.

### **Path development between continuity and change**

The central understanding of path development processes is that present, current and future economic action is, to varying degrees, directed by past events and economic cycles (Martin & Sunley, 2006). In this evolutionary perspective, new information is interpreted through the lens of existing knowledge. Hence, path development processes emphasize the role of local and regional resources and the function of place-specific features and actors in shaping regional development paths.

However, path development is not a fully deterministic concept that generates predictable outcomes. Its directions are, in fact, open-ended and contingent (Martin & Sunley, 2006; Strambach & Halkier, 2013). Path development processes can be understood along a continuum ranging from rather continuity-driven developments to processes that induce substantial change and novelty and genuinely new futures (Asheim, Grillitsch, & Trippl, 2017; Garud & Karnøe, 2001; Martin & Sunley, 2006). Linked to its frequent mobilization in evolutionary economic geography, the path development notion has been extended and nuanced in a number of ways. This contribution adopts the typology recently outlined by Isaksen et al. (2019), who differentiate between *path extension*, *path upgrading*, *path diversification* and *path creation*.



Path extension processes represent continuity and consist mostly of incremental, step-wise innovations in existing industries and along prevailing economic and technological orientations (Isaksen, 2015). Path upgrading processes relate to more substantial degrees of change and move existing regional paths in new directions. Upgrading processes are for instance induced through the mobilization of new technologies, substantive organizational changes, the accumulation and development of specialized skills, the identification of industrial niches or novel use of symbolic knowledge (Grillitsch, Asheim & Trippl, 2018). Both path extension and path upgrading represent rather incremental changes through which existing organizational and regional competencies are strengthened. As a result, existing processes operate more efficiently and contribute to sustaining regional competitiveness (Isaksen, 2015; Isaksen et al., 2019). In cases where existing capabilities are combined with related or unrelated knowledge from local and/or extra-local sources, available paths might be diversified (Neffke, Hartog, Boschma, & Henning, 2018) and new knowledge accumulated. Innovations exploited through these processes allow firms and regions to access new markets (Isaksen et al., 2019). At the end of the spectrum are path creation processes, which imply high degrees of change and, consequently, represent a comprehensive mode of regional industrial change (Martin & Sunley, 2006; Simmie, 2012). Path creation relates to the emergence of new industries and technologies, scientific discoveries, or business models in a region (Isaksen, 2015; Hassink, Isaksen, & Trippl, 2019). It has been debated that the resources underlying path diversification and path creation are more likely to be found in metropolitan regions, whereas extension and upgrading processes might also be facilitated in rural regions and rather traditional resources – despite a state of organizational thinness (Isaksen, 2015).

These nuanced path development processes link to the notion of path plasticity. Path plasticity supposes that the direction of paths can be actively shaped and molded by actors (Strambach, 2008), indicating that opportunities for innovation are available within existing paths – which has also been highlighted for rural regions (Atterton, Newbery, Bosworth, & Affleck, 2011; Ray, 2001). Consequently, the effective use of local resources provides an effective means for shaping regional development trajectories (Isaksen, 2015; Mitchell, 2013; Petrov, 2011). This, however, requires comprehensive knowledge about embedded resources to generate new options out of them. In this regard, recent studies highlight the pivotal role of agency in path development processes (e.g., Garud, Kumaraswamy, & Karnøe, 2010; Huggins & Thompson, 2019; Isaksen et al., 2019; Sotarauta & Suvinen, 2018). Essentially, it is supposed that the initial conditions for path development are not entirely exogenously given but constructed by actors, for example through mobilizing their agency (Garud, Kumaraswamy, & Karnøe, 2010;

Sotarauta & Suvinen, 2018) or by acquiring knowledge via multi-scalar social action (Hassink, Isaksen, & Trippel, 2019; Simmie, 2012). In this sense, agency itself becomes an endogenous resource for regional development (Ray, 2001; Sotarauta & Beer, 2017). Moreover, it has been argued that collective agency, i.e., the coordinated and orchestrated action of multiple and diverse actors, is especially important for rather radical processes of path diversification and creation (Isaksen et al., 2019).

However, it might also happen that self-reinforcing stabilization mechanisms lock regional systems into existing trajectories. Actors and regions become insensitive to change, and potential future opportunities are overlooked (Martin, 2010; Strambach & Halkier, 2013). As a consequence, innovation potentials are substantially limited as influxes of novelty are not sufficiently recognized or even blocked (Martin & Sunley, 2006). Rural regions can be regarded to be particularly exposed to the latent danger of lock-in as they provide only for rather limited opportunities to alter existing development paths (Pylak, 2015). Again, these arguments bring to the fore, the potential function of agency to prevent, moderate, or even exploit lock-in situations.

While lock-in situations have mainly been discussed in negative terms, Gibson (2016) illustrates how traditional skills, embedded knowledge, technologies, production methods, etc. are transformed into distinct qualities – precisely because modernization pressures were resisted and traditional practices maintained. Likewise, Anderson (2000) illustrates that actors in rural regions nurse and transform obsolete and out-dated technologies and values into economically viable outcomes which, if coupled with suitable marketing instruments, become articulations of place, traditions, and cultural landscapes. Thus, adhering to historical economic legacies should not be merely perceived a constraint as long as actors proactively and continuously search for feasible extensions within existing paths. Along these lines, Garud, Kumaraswamy, and Karnøe, (2010) perceive lock-in as temporary, provisional and inevitable stabilization mechanisms of evolving paths.

## RESEARCH METHODS

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### Regional context

We follow a general definition of rurality according to which the population density is less than 150 inhabitants per km<sup>2</sup> and the majority of the population lives in settlements with less than 10,000 inhabitants (OECD, 2006). Despite such characterizing features, it must be highlighted that rural regions themselves are highly heterogeneous spatial units. The firms

(cases) investigated as part of this study are located in rural Estonian regions. Estonia is situated in the north-eastern part of Europe, on the Baltic Sea. It has a population of 1.3 million and an average population density of about 30 inhabitants per km<sup>2</sup>. The firms investigated are located in the counties of Lääne, Järva, Viljandi, and Võru (see Figure 1).



**Figure 1.** Location of cases

Source: Leibniz Institute for Regional Geography (IfL) (2018).

In addition to their relative distance to the main national agglomerations of Tallinn and Tartu, the counties that constitute the study area share a number of socio-structural characteristics. All the counties exhibit low population densities, have experienced a decline in population, which exceeds the national average and account for rather low levels of GDP per

capita (see Table 1). In terms of economic structure, the regional economy of the study area can be described as “typically rural.” The contribution of agriculture and forestry to total value added is relatively high and exceeds 10% for the counties of Viljandi and Võru. Additionally, manufacturing and industrial production, especially in low- and medium-tech activities, such as metal, wood and food, are significant contributors to regional value added.

Conversely, compared to the national average, the service sector is substantially less important. However, Lääne county can be seen as a particular exception in this regard. The tourism industry has traditionally been a backbone of the regional economy and continues to play a major role, especially in the well-known spa town and county capital Haapsalu (see Table 1). Viljandimaa and Võrumaa have a long tradition in manufacturing, with wood, metal and furniture manufacturing being particularly important. Järvamaa is a traditional Estonian agricultural area.

**Table 1.** Characteristics of counties in the study area

	Population			GDP		GDP (share in value added, 2016)		
	Total population 2017	Density	Change in population 2000-2017	Per capita 2017	Relative to Estonian average	Agriculture, forestry and fishing	Industry and construction	Services
Estonia	1 315 635	30,3	-6%	17,925	100%	2,6	26,9	70,5
Järvamaa	30 378	12,4	-20%	10,877	61%	9,4	37,2	53,4
Läänemaa	24 301	10,1	-17%	12,024	67%	7,4	28,3	64,2
Viljandimaa	47 288	13,8	-20%	11,222	63%	14,1	37,7	48,2
Võrumaa	33 505	14,5	-16%	8,729	49%	11,6	39,8	48,6

Source: authors, based on data from Statistics Estonia.

## Data collection and analysis

A qualitative approach was chosen to provide contextually grounded and micro-level perspectives, which allow for interpretations through the understandings of research participants (Creswell, 2013). Interviews with management representatives of 20 firms were conducted in several waves from 2014 to 2016 (see Table 2). These were complemented by interviews with individuals from the regional development arena. Interviews focused on the firms’ innovation activities and followed a semi-structured approach, including substantial narrative sections. This interview approach enabled interviewers to cover intended topics while leaving freedom for the interviewees to elaborate on and prioritize their own ideas and perspectives (Gomm, 2004).

**Table 2.** Characteristics of interviewed firms

Interview ID	No. of employees	Year established	Industry	Interview respondent	Date of interview
E1	150	1991	Manufacturing (doors, windows)	Manager	12.03.14
E2	120	1994	Manufacturing (e.g. life jackets)	Owner	21.03.14
E3	60	1991	Manufacturing (wire products)	Manager	06.03.14
E4	80	2005	Tourism (spa hotel)	Manager	12.02.14
E5	65	1994	Manufacturing	Manager	16.04.14
E6	80	1997	Tourism (spa hotel)	Owner/manager	12.03.14
E7	5	2007	Information Technology	Owner/manager	09.05.14
E8	138	1958/2003	Medical Treatments	Manager	12.03.14
E9	3	2003	Tourism	Owner/manager	16.04.14
E10	2	2014	Manufacturing (modular houses)	Owner	03.06.14
E11	50	1996	Manufacturing (furniture)	Manager	15.04.15
E12	100	1992	Manufacturing (furniture)	Manager	15.04.15
E13	-	1992	Handicraft	Manager	16.04.14
E14	75	2005	Manufacturing (furniture)	Production Manager	14.01.16
E15	3	2014	Manufacturing (food)	Owner	15.01.16
E16	7	2014	Manufacturing (saunas)	Owner	05.02.16 & 07.11.16
E17	5	2011	Farming/Manufacturing	Owner	22.03.16
E18	106	1910	Manufacturing (food)	Manager	13.04.16
E19	11	2002	Manufacturing (food)	Owner	02.02.16 & 02.11.16
E20	9	1992	Manufacturing/Wholesale (food)	Owner	21.03.16

Most of the interviews took place at the company/institution of the interviewees. The interviews were conducted in both Estonian and English. The interviews lasted between 40 and 90 minutes and were tape recorded and transcribed. Partly software supported, these transcripts were analyzed through coding and categorization processes (Kvale, 2007). The relevant aspects were extracted from the interview material and organized along with coding categories reflecting the topics of interest (e.g., innovation activities, mobilization of local resources, coupling of existing resources). Coding was organized in several steps. First, the resource types, following a typology similar to that of Müller and Korsgaard (2018) were used as a basis to sort the data. The data in these groups were re-reviewed using in vivo coding (Creswell, 2013) to systematically and inductively develop new codes. Finally, these codes were thematically categorized.

Table 2 provides an overview of the firm selection of this research. Case selection for this study reflects activities that are of economic importance in the counties that constitute the study area (see Table 1). Most of the manufacturing firms exhibit a clear orientation towards export markets, and the service firms target domestic as well as international clients, mostly from neighboring countries. The firms that were selected have all innovated in the past. Furthermore, case selection was aimed at covering firms of different size and with activities within low- and medium-tech manufacturing (e.g., food and wood) as well as service industries (e.g., tourism and IT). Accordingly, the selection strategy relates to purposive and variation sampling (Gummesson, 2000), partly guided by snowballing techniques. Data from secondary sources such as company websites and social media accounts, official documents, newspaper articles, etc., complemented the interview material.

## FINDINGS

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### The function of rural resources for innovation

The focus of this part is to provide an overview of how the investigated case firms mobilized local resources for innovation. Based on our empirical analysis, we suggest that place-specific rural resources play a substantial role when it comes to inducing novelty and change into the local economy. However, we also find that these resources facilitate mostly incremental innovation processes along existing trajectories.

### Physical resources

Our data highlight that physical resources such as landscape, natural assets, vacant buildings, etc. are frequently mobilized by firms from rural regions in the innovation context. These resources have place-specific features and allow firms involved in diverse economic activities to create regionally distinct products that satisfy existing, and generate new, demand. Tourism, health and recreational firms stress the importance of landscape as a general resource, referring to the sea and forests not only as a particular aspect of scenery but also concerning the health and rehabilitation services offered. Specifically, we find, for instance, that in the health and spa sector, traditional treatments using local mineral mud are widespread and that firms seek to widen these traditional applications through consultations with local research organizations.

*[...] The Centre of Excellence does research about curative mineral mud to find new applications. Today, we [in the spa] use mineral mud in a traditional*

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*way, which means that we heat it and use it only once. The Centre of Excellence has ideas how to make mineral powder that could be used for massages and other treatments. [...](Spa hotel manager)*

Accordingly, these natural resources are featured prominently in marketing activities, and health and spa firms have added nature-related services to their existing portfolios, such as guided walking tours. Further examples of the proactive and contemporary use of physical resources are observed within food manufacturing. For instance, a dairy began to harvest birch sap, a traditional Baltic beverage, on a larger scale to meet increasing demands from international health and organic food markets, thereby generating new value from the abundantly available birch forests:

*There is clearly a new trend in [international food] markets. We have received several export requests for birch sap. [...]. We have also developed new birch sap products like lemonade. (Food manufacturer)*

Additionally, it has been mentioned that vacant buildings are considered a specific resource in rural areas and have been used to establish additional service/production sites or even to start new businesses. Thus, there might be situations in which firms can benefit from real estate vacancies, which are typically considered liabilities for rural communities. Furthermore, the state of the buildings themselves could push firms to be creative and to innovate in order to be able to use and maintain the buildings in the long run. As pointed out by one spa firm, there are no ready-made solutions available for these activities. Thus, renovations rely heavily on developing and testing creative solutions that could potentially be re-applied in future projects.

## **Human resources**

Human resources are an important local resource through which innovation is facilitated and implemented. Innovation and entrepreneurship are supported by historically embedded knowledge, giving rise to the continuation of the specific skills and competencies of both the available workforce and local firms. For instance, Viljandi is reported to be the (former) center of furniture production in Estonia. Accordingly, the county provides an experienced workforce with specific practical knowledge of furniture production. Similarly, the availability of a skilled workforce, especially with experience and knowledge in the sewing industry and other light industries, has been mentioned as attracting related firms to Haapsalu. Our data reveal that such a specialized workforce is not only appreciated for its loyalty but also that

its specific knowledge facilitates the emergence of (incremental) innovation regarding proposed changes and improvements of products and processes.

Furthermore, knowledge about old handicraft techniques is a particular example of how embedded human resources continue to be economically relevant and unique. Lääne county is well-known for its specific lace shawl. Knowledge about related production techniques is typically passed down the generations or shared within local handicraft circles. More recently, this embedded knowledge has been mobilized to create additional demand by directly engaging customers in the production process, offering, for instance, extended workshops during which experienced handicrafters and customers jointly co-create items – rather than merely offering traditionally made handicraft products through classical sales channels.

However, the lack of a qualified workforce, coupled with rising wages, has frequently been mentioned as an innovation barrier across industries. Consequently, the response of firms in addressing labor shortages might facilitate innovation. In particular, manufacturing firms are considering the reorganization of production routines through technological modernization and by rationalizing production to implement new production processes. However, employees continue to be a critical factor when it comes to operating highly specialized machinery:

*One thing is to buy a machine [...] another is to train employees and change their mindset. The latter is more complicated [...] at least in the beginning. When we bought our first 'smarter' machines [...] people did not get near them. [...] Today, nobody is afraid anymore. We use some machines [...] as practical tools for training and experimentation. (Wire manufacturer)*

Moreover, firms also facilitate knowledge exchange between experienced and new staff and try to secure the existing employees to further build and expand their internal capacity and thus compensate for the shortage of available workforce.

*We use a lot internal training. [...] We don't let employees who are trained according to our [firm] values and needs leave. This region is not large enough to find new employees. (Spa hotel manager)*

Furthermore, all organizations located in the area benefit from human capital. For example, the Centre of Excellence in Health Promotion and Rehabilitation is located in Läänemaa. It connects wellness and treatment firms and other regional actors in this field and, thus, diffuses knowledge regionally. Thus, these local organizations can be seen as not only providing



relevant knowledge to local actors but also as brokers through which local firms can mediate access to extra-local competences. Multiple health and spa firms have expressed expectations that these research capacities and transfer activities might eventually facilitate product and process innovations.

### Immaterial resources

In combination with other resources, immaterial resources provide complementary qualities that allow firms to mobilize additional value. Immaterial aspects emerge as articulations of place attachment, emotional engagement, relations to cultural heritage, embedded traditions and the mobilization of rural images and associations. For instance, when establishing a new sauna manufacturing business, the owner, based in Tallinn, highlighted that the locational choice was substantially driven by his personal attachment to the area:

*My roots are from here, my grandparents live here, and I have a big summer house nearby. (Sauna manufacturer)*

Likewise, regional development actors indicated that the owners of summer houses in rural areas are considered potential facilitators for local innovation. Such actors potentially couple their emotional and local attachment with distinct experiences and external networks. Multiple cases reflect that local cultural heritage is actively mobilized as part of the innovation activities, for instance, for marketing purposes. We observe that relations to cultural heritage and traditions help firms to differentiate themselves and their products from competitors. For instance, a food manufacturer activates the local Estonian Mulgi heritage<sup>3</sup> as part of its brand identity – transported, for instance, through marketing and packaging:

*My entire family has been living in Mulgimaa. I am Mulgi, too. Mulgi is my identity. And this is why we have Mulgi chips [...]. The logo of the business is a traditional Mulgi motive. (Food manufacturer)*

Tourism businesses in Haapsalu mobilize tales about the Russian Tsar family's visits to the town and enjoyment of mineral mud treatments hundreds of years ago. Similarly, the fact that local mineral mud is used instead of generic powder is actively promoted. These practices illustrate a certain place attachment referred to as 'local patriotism' and signal to

<sup>3</sup> Until the end of the 19th century, Mulgimaa was a distinct ethnographic and linguistic area within south Estonia. Five historical parishes (Halliste, Paistu, Karksi, Helme and Tarvastu) constituted the Mulgi area. Its population used to speak, and a small part still speaks, Mulgi dialect.

customers that local traditions are maintained. Furthermore, firms were found to actively mobilize images and associations of rural and idyllic landscapes. Thereby, places and rural spaces are purposefully commodified, for example, as part of packaging, online activities, and social media. A rural location allows firms to authentically mobilize such images. By highlighting that landscape and scenery support relaxation and healing, such practices are adopted in the health and spa sector but also beyond (craft-based food production, sauna manufacturing). Furthermore, firms from the food sector use particular food labels awarded by public institutions (e.g., indicating sources of origin, quality aspects, etc.) to support rural associations and to position themselves accordingly.

### **Social and community resources**

We find that local social resources and firm innovation are linked in multiple dimensions, such as mobilizing local/regional supply chains, mitigating access to other resources, the coupling of social and business ties and governance aspects. Our data suggest that social ties and business practices are interwoven and constituted by an underlying social fabric that builds upon mutual trust and common understanding. It has been frequently mentioned that, if possible, firms seek to source goods and services from local and regional suppliers. Motivations for local and regional cooperation relate to intentions to strengthen local economic structures and to build authenticity for handcrafted local products, but also to speed up processes:

*For changing fittings, we have a really good local welding guy at hand, a good friend of mine. The first thing we try is to do everything locally. [...]. If you have some local guy, you just drive there. It takes 20 minutes. He makes it right away. (Furniture manufacturer)*

Firms expand personal relationships with friends, family members, and acquaintances to specific business intentions. This coupling ranges from the provision of emotional support and critical feedback to the establishment of formal business relations and even co-ownership of newly established firms. Furthermore, joint production initiatives and sales/marketing cooperatives have emerged based on the established trust and shared values between the partners involved. Generally, the investigated cases reflect high levels of trust and mutual understanding of local expertise and matters. Consequently, it has been highlighted that familiarity within small communities facilitates the activation of social ties for economic purposes:

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*We stick together. [...] If everyone knows everyone, then there is a lot of trust. [...] you don't have to start explaining yourself if you need something and contact people. (Spa hotel manager)*

Further aspects from the social and community dimension relate to local and regional governance. Some firms highlight that, despite being small companies, they experience a high level of appreciation and practical support, for instance, when it comes to licensing and building permit procedures. Local governance structures can operate as a productive and supportive resource in small and non-anonymous communities:

*I even feel that if you are located in a really small place, the local government treats you differently. It is much easier to negotiate because you are important. In Tallinn, a company like us is nobody, because we are so small. (Sauna manufacturer)*

However, social connections that are too tight might lead to the lock-in of existing networks, and some areas of potential may thus be left unattended. For instance, disharmony was identified in local governments' support for new ideas and interest in general business development. It was explained that not all persons who know each other and occasionally meet during other events discuss business-related issues and the support that local government could offer. Interestingly, an actor from the regional development arena mentioned that second-home owners, by mobilizing their diverse networks, can be considered a kind of gatekeeper who might potentially mediate and moderate connections between rural and metropolitan actors such as universities. Thus, these actors extend the spatial scope of the local social resources. Thereby, the difficulties small firms in rural areas tend to have in attracting the interest of high-level scientific partners, and consequently in obtaining input for their development activities, could be moderated.

## **Financial resources**

For most of the innovation projects investigated as part of this study, internal financial resources were mobilized. Nevertheless, firms also used a number of different external finance opportunities to facilitate processes. Although access to formal and, specifically, rural funding schemes does not seem to have a substantial function, some firms accessed such schemes, for example, via the LEADER program or the national agricultural ministry. A few firms pointed out that their engagement with local research partners could provide opportunities to access additional science-related finance, which is often administered by scientific

partners. Although financial support is directly linked to the implementation of innovation, this is not the only aspect. Many of the interviewees acknowledged that receiving competition-based funding is perceived as approval of an idea, which is a vital aspect, especially for small firms.

In addition to the use of public funding schemes, it can be observed that entrepreneurs, throughout the process of establishing new ventures, frequently mobilize financial resources from within their social networks. Thereby, family members, friends, and acquaintances who live locally and have an interest in the venture's wellbeing not only become investors but potentially also co-owners. These indications illustrate how social ties are expanded into the business sphere.

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## DISCUSSION

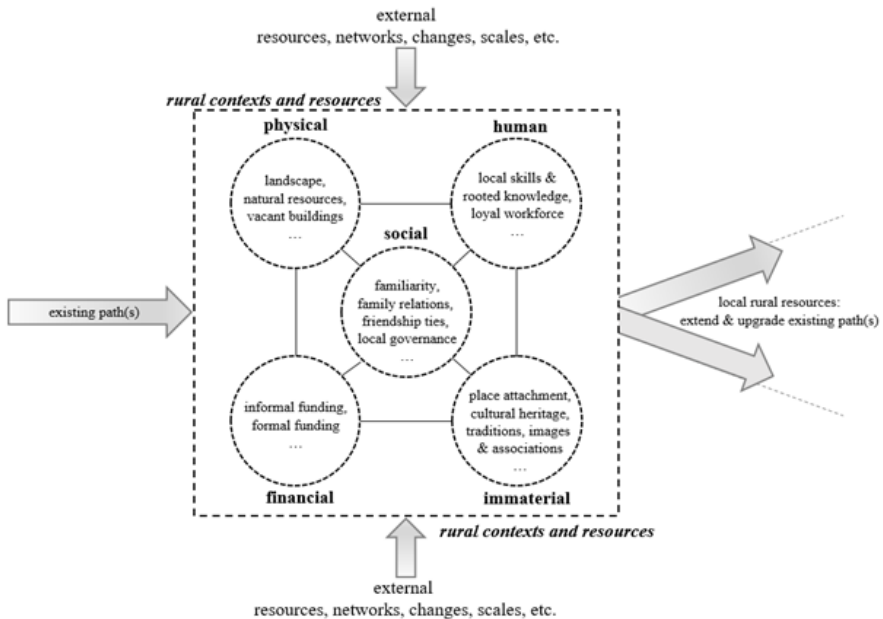
### Local resources shaping economic paths

In the previous sections, we illustrated the various ways in which firms from rural Estonian regions mobilized local resources as part of their innovation activities. Our empirical analyses highlight that the particular physical, human, social, immaterial, and financial resources of rural regions provide diverse and valuable opportunities for regionally distinct innovations. Based on these analyses we propose an empirically grounded model (see Figure 2) that helps to understand the role of rural resources for firm innovation, the various dimensions of these resources and their role in shaping regional development paths.

Even though we find a highly diverse picture across cases, it is important to note that the individual resources analyzed should not be perceived separately. Rather, we suggest that these resources are interlinked and operate as complements. A large number of the investigated firms strategically couple multiple local resources to drive their innovation activities. For instance, firms from food and tourism as well as wood-related manufacturing construct particular marketing images that draw upon the existence of specific physical resources which are not ubiquitously available (e.g., birch sap, mineral mud, idyllic landscape).

Furthermore, our findings suggest that in particular social and community resources, such as local business networks, family and friendship ties, operate as essential facilitators – for instance by providing access to resources such as embedded knowledge and finance or by mobilizing wider cultural heritage. In this regard, social and community resources provide a pivotal ground to mobilize collective agency based on shared understandings and, consequently, to construct value and meaning of resources and common goals beyond

individual firms. A particular example to be mentioned is the initiative of one case firm to coordinate the activities of multiple regional birch sap collectors under the umbrella of a joint cooperative.



**Figure 2.** Model on the role of local rural resources in firm innovation and path development

However, this particular enabling function presupposes that local firms are prepared and willing to engage with local communities. Only then do local social resources induce synergies which have been found to considerably shape entrepreneurial processes and innovation activities in rural areas (e.g., Korsgaard, Ferguson, & Gaddefors, 2015; Petrov, 2011; Šumane et al., 2018). As Petrov (2011, p. 168) highlights, 'innovation [...] in the periphery relies on social capital and community efforts as much as on other traditional factors of successful innovation'. Furthermore, it has been suggested that collective action based on mutual understanding and shared goals can induce more fundamental processes of regional change (Isaksen et al., 2019; Sotarauta & Suvinen, 2018).

Even though our empirical analyses indicate that, if proactively and purposefully mobilized, local rural resources provide productive assets for firm innovation, we find that these resources mainly facilitate the emergence of incremental innovation. According to the typology outlined by Isaksen

et al. (2019), local rural resources primarily stimulate continuity driven processes of regional change, i.e., path extension and path upgrading. Our empirics do not suggest that regional economic structures are drastically diversified or genuinely new paths are created. Consequently, we suggest that rural resources alone, typically, do not suffice to activate genuinely new trajectories. The results are confirmed in a recent study on regional contexts in Czechia and Poland (Květoň & Blažek, 2018).

However, such continuity-driven extensions of existing paths must not be perceived as simply reproducing and creating more of the same. Rather, available paths are enriched with additional opportunities, functions and economic values and, consequently, existing structures are renewed and strengthened. It has been highlighted that these moderate change processes are of substantial value to rural economies: 'Innovation in the periphery can have a stronger impact on a community's economic path, and can be more pivotal [...] for a given remote locality' (Petrov, 2011, p. 186). The impact of incremental innovation for regional development in rural regions derives from its cumulative effects. Especially if incremental innovation occurs across a diverse range of economic activities relevant for rural economies, such as the ones investigated in the study, overall economic structures and practices are upgraded and, collectively, might facilitate the emergence of more heterogeneous and resilient regional economies. Future-oriented economic practices, as well as viable path extensions and upgrades, require agency through which the continuous search for change and activation of alternatives to shape and mold existing paths in rural regions is supported.

However, modest ambitions to change and a mere focus on local resources such as local employees, static social and community relations or local educational organizations, coupled with only a few external knowledge-oriented network linkages in rural regions (Reidolf, 2016) might, in the long run, exhaust existing opportunities, eventually resulting in actors, practices and regions becoming locked-in. However, it has also been suggested that the maintenance of established knowledge/routines does not necessarily preclude positive change (Anderson, 2000; Gibson, 2016). If attuned to contemporary consumer preferences and coupled with modern marketing methods, the retention of these practices allows firms to build distinctive features and to set themselves apart. For example, teaching traditional local handicraft techniques helps to open new tourist and sales segments, and customs related to the consumption of fermented birch sap provide a base to develop soft drinks corresponding to international market preferences.

As the aim of this paper is to assess the role of local rural resources in firm innovation, its analytical focus is deliberately inward looking. Consequently, more substantial path development processes, such as diversification and

path creation, might have been excluded. However, we acknowledge the central position of external and outward-looking dimensions in spatially informed innovation research – evidence from our cases also sheds light on their importance. It has been corroborated that the integration of external resources through multi-scalar network linkages plays a significant and productive role in the innovation activities of firms from rural regions (e.g., Fitjar & Rodríguez-Pose, 2011; Reidolf, 2016; Strambach & Halkier, 2013). The activation of non-local resources and linkages provides for the influx of new ideas and knowledge which complement endogenous rural resources and support the capacity of firms and regions to adapt to change. It is precisely this duality of mobilizing local resources and recognizing extra-local factors and resources which is at the core of the wider debate on neo-endogenous (rural) development (Atterton et al., 2011; Ray, 2001; Ward & Brown, 2009). The effective coupling of local and extra-local resources might prevent regional lock-in and give rise to more substantial regional change – potentially leading to processes of path diversification and path creation (Isaksen, 2015; Isaksen et al., 2019). Thus, for future research, we suggest complementing this inward-looking perspective with an exogenous dimension and, thereby, assess the interplay between local and extra-local resources, and their collective, and potentially more substantive, impact on regional path development processes.

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## CONCLUSION

This exploratory, contextually grounded and micro-level study examined the role of local resources (physical, human, immaterial, social and community, and financial) in shaping firm innovation and path development processes in rural areas. The empirical analyses suggest that rural resources can play an important role in the innovation activities of firms in rural regions. Local rural resources provide valuable and diverse assets that can be proactively exploited by firms. However, the value and meaning of these resources have to be recognized by firms, a stage in which individual and collective agency takes on a pivotal function.

The results of the study were synthesized as part of a model. This model illustrates the multiple dimensions and mobilization mechanisms of rural resources and outlines that rural regions account for endogenous resources which, when mobilized separately or in concert, provide opportunities for extensions and upgrades of existing paths and, thereby, increase the opportunities for both firm progress and regional development. Within this diverse set of rural resources, we find a particularly pivotal role of social

and community resources. They have a central function for mobilizing further resources and for facilitating collective action and sense-making. Furthermore, social ties constitute central mechanisms to mediate relations to extra-local actors and resources.

However, rural resources were mainly found to provide a base for incremental innovations and, consequently, tend to impact rather modestly on existing regional development paths. Hence, it seems that the mere exploitation of rural resources alone does not suffice to facilitate substantial changes in these paths. Moreover, our research reveals examples in which the deliberate continuation of existing development paths and local resources, such as locally embedded knowledge or customs, were used as specific qualities in firms' innovation endeavors, often in combination with certain modernization elements, such as marketing. Overall, these reflections indicate that local resources in rural areas should be considered valuable ingredients to extend, upgrade, and renew existing paths, thereby, inducing additional functions and elements which make them more future-oriented. Such extension and upgrading processes relate to the plasticity of paths and highlight that possibilities for innovation are endogenously available. Interpreted in such a way, our findings confirm existing scholarship on the complementary function of rural resources (e.g., Eder & Trippl, 2019; Korsgaard, Ferguson, & Gaddefors, 2015; Mitchell, 2013). The cumulative effects of moderate change processes support the emergence of more heterogeneous and resilient regional economies, especially in rural areas. However, merely relying on (modified) endogenous factors might eventually exhaust the opportunities of existing paths and pose the long-term risk of lock-in.

This study expands the debate on the role of local rural resources for innovation by proposing an empirically grounded model on the role of rural resources in shaping regional development paths. For analytical purposes, our study deliberately excluded firm relations to external actors – precisely because its focus is on the underexplored issue of local rural resources. So far, the productive properties and qualities of urban areas, such as actor density or localized knowledge spill-overs, are assigned a key role in conventional, i.e. agglomeration-oriented, narratives on regional innovation. This study illustrates that rural contexts, typically portrayed in the existing innovation literature from a problem-centered perspective (Graffenberger & Vonnahme, 2019), offer place-specific, yet often hidden, opportunities for innovation which firms need to recognize and proactively exploit. Thereby, this paper supplements emerging studies (e.g., Anderson, 2000; Eder & Trippl, 2019; Gibson, 2016; Müller & Korsgaard, 2018) that also discuss the role and productive properties of rural resources. However, we have to be cautious when making conclusions, as one cannot conclude from our study that all firms in rural Estonia have the



possibility to (equally) mobilize local resources for innovation, or that firms who do so operate per se more successfully. Furthermore, our empirical focus on rural Estonia complements existing studies in the field with a rather rare contextual setting from Central and Eastern Europe.

Finally, the results of this paper allow us to reflect on the implications for regional and innovation policy targeting rural areas. A central question to be posed is how innovation policy can effectively support processes of building, mobilizing and exploiting rural resources to facilitate innovation. One option for policymakers is to support regional capacity and resource building in organizations such as regional development centers, vocational schools, or research centers to assist firms in the process of generating value from rural resources. Furthermore, actors in rural regions might benefit from initiatives that provide financial support and advisory services to local bottom-up initiatives and firms to facilitate the emergence of regionally distinct (incremental) innovation. Related to our finding on the importance of social and community resources, the importance of support measures that target overall networking activities should be emphasized. Networking activities can be framed along with Faulconbridge's reflections on relational policy approaches (2017) and be understood as mechanisms to supplement the individual agency of firms with coordinated and collective action – found to support more substantial change processes (Isaksen et al., 2019). Policy initiatives that provide opportunities for firms to build regional, as well as extra-regional linkages, can effectively support the emergence of collective action. Furthermore, collective agency and coordinated action might also be facilitated through the initiation of joint regional marketing strategies. The direction of such regional marketing and branding initiatives should be to emphasize place-based resources as distinct local/regional qualities and assets that cannot easily be found and imitated elsewhere.

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### Abstrakt

*Niniejszy artykuł analizuje rolę lokalnych zasobów (fizycznych, ludzkich, niematerialnych, społecznych, społecznościowych oraz finansowych) w kształtowaniu innowacyjności przedsiębiorstw i rozwoju ścieżek na obszarach wiejskich. Istniejące badania nad innowacyjnymi badaniami przestrzennymi w dużej mierze pominięły specyficzne dla danego regionu zasoby obszarów wiejskich jako cechy ułatwiające innowacje. Niniejszy artykuł porusza następujące pytania badawcze: (i) jaka jest rola lokalnych zasobów wiejskich w działalności innowacyjnej firmy oraz (ii) w jaki sposób te zasoby kształtują ścieżki rozwoju regionalnego? Proponujemy ramy, które przyjmują całościowy obraz zasobów wiejskich i ich roli w kształtowaniu innowacji i ścieżek rozwoju regionalnego. Analizy empiryczne sugerują, że zasoby wiejskie oferują cenne i różnorodne możliwości wzrostu innowacyjności firmy, pod warunkiem, że firmy (pro) aktywnie mobilizują i celowo wykorzystują te zasoby w ramach swoich wysiłków na rzecz innowacji. Stwierdzamy, że zasoby wiejskie mają potencjał, aby rozszerzyć i ulepszyć ścieżki rozwoju regionalnego i działać jako składniki wzbogacające istniejące ścieżki o dodatkowe funkcje, a tym samym uczynić je bardziej zorientowanymi na przyszłość. Jednak samo poleganie na zasobach wiejskich nie wystarcza do ułatwienia istotnych zmian w ścieżkach regionalnych. Nasze analizy oparte są na częściowo ustrukturyzowanych wywiadach z przedstawicielami firm zlokalizowanych w wiejskiej części Estonii, działających w różnych branżach produkcyjnych i usługowych. Niniejszy artykuł przyczynia się do powstawania, ale nadal fragmentarycznej, literatury na temat innowacji na obszarach wiejskich i oferuje (kontekstowo) oparte, na poziomie mikro, ramy dotyczące roli lokalnych zasobów wiejskich dla trwałych innowacji na obszarach wiejskich. Ponadto badanie stanowi empiryczny wkład rzadko badanego kontekstu regionalnego w Europie Środkowej i Wschodniej.*

**Słowa kluczowe:** zasoby lokalne, obszary wiejskie, innowacje, ścieżka rozwoju, zasoby, Estonia

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