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Rural–Urban Linkages and Sustainable Regional Development: The Role of Entrepreneurs in Linking Peripheries and Centers

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Abstract: Urban and rural areas differ in economic, social and environmental terms. Due to the diverging dynamics in urban and rural areas, the social and economic distance between them might increase in the future even more. Rural entrepreneurs with linkages to urban areas are able to bridge the rural–urban divide by accessing some of the urban features, such as knowledge and markets, while at the same time profiting from the advantages of their peripheral location. This paper highlights exploratory results from qualitative interviews with rural entrepreneurs, and we illustrate entrepreneurial linkages to urban centers. The interview data show that rural entrepreneurs with rural–urban linkages develop sensibility for core market demands and trends, they value rural assets, and they combine rural and urban sources of knowledge for innovation. Through their entrepreneurial activity, rural entrepreneurs with linkages to urban areas might constitute an opposite force to polarizing concentration of economic activities in cities. Hence, rural entrepreneurs with urban linkages might contribute to sustainable economic relationships between urban and rural areas.

Keywords: rural-urban linkages; entrepreneurship; peripheral regions

1. Introduction

Traditionally, studies of regional economic development have either focused on urban or rural areas [1,2] rather than the interdependencies between these two different types of territories. There also has even been a rigid division between “rural” and “urban” when it comes to studies of entrepreneurship and associated spatial dynamics [1,3–5] without much consideration of linkages of, for example, entrepreneurs located in rural areas who actively engage with markets in urban areas. Along these lines, many studies have focused on what it means to be an entrepreneur located in a rural area [6–10]. Less attention has been paid to the role of entrepreneurs as economic agents who might be able to connect rural and urban areas and create linkages between them.

A perspective on rural–urban linkages is particularly important in the context of sustainable economic development. There is increasing evidence that with the growing integration of the global economy, trade liberalization, increasing importance of a knowledge-based economy, etc. large urban agglomerations are disproportionately benefitting from these developments [11]. In contrast, rural regions that are characterized by long-distances to urban centers, low densities, a dominance of traditional sectors, etc. do not benefit from these developments. Only some rural areas might benefit from being able to connect with urban areas and they indeed show positive growth patterns [12]. As a result, spatial disparities—particularly between centers and peripheries—are increasing. Indeed, Rodriguez-Pose [13] has shown that only three countries from a sample of 28 have shown a fall in spatial inequalities since the 1990s. All of the other countries have experienced rising inequalities.

Such evidence stands in contrast to theoretical and policy assumptions about so-called “trickle-down” or spillover effects of urban agglomeration economies.

Entrepreneurs who create rural–urban linkages might have the potential to decrease spatial disparities through their ability to create economic opportunities in rural areas. Urban and rural areas are connected through a variety of flows, which may be economic, political, social, informational, etc. Increasingly rural–urban linkages have gained policy attention because they are seen to help rural areas diversify their economies and ensure urban areas access to critical resources [14,15]. Such rural–urban linkages may contribute to more sustainable economic development at a macro level because they may counteract strong concentration or depletion forces, by giving rural areas opportunities to develop [16–18]. When we think about increasing disparities between rural and urban areas, “sustainable development in rural areas is of fundamental importance to preserve the social traditions, (indigenous) cultures and valuable natural amenity space, whilst also reducing territorial disparities, generating a vibrant rural economy, new and diverse employment opportunities and transforming rural spaces into places fit for modern socio-economic realities” [19] (p. 16). Such a transformation, however, is only possible through rural change agents like entrepreneurs who are rooted in the rural context, yet also possess strong linkages with urban areas.

2. Literature Review

The literature on rural–urban linkages acknowledges that urban and rural areas are interdependent and connected through a variety of flows. These flows can consist of people, capital, goods, technology, but also information [16]. Such flows in the context of rural entrepreneurship can take on different forms. Flows of people between urban and rural may consist of, for example, seasonal workers who are employed by agricultural businesses. Capital flows may be rents gained by rural entrepreneurs who sell their products outside of their region. Flows of goods may be products and services developed and produced at a rural location, but delivered in urban areas (the same may hold for technology). Finally, information flows may consist of knowledge, ideas, insights, etc. that may originate in an urban location, but that may be put to use by rural entrepreneurs in rural areas. So far, the literature on rural–urban linkages has described such flows in general [16–18], yet has not focused on the specific ways that entrepreneurs create these flows and how they benefit, respectively, from what contributions to competitiveness of rural businesses that such flows fulfill. There is, however, a wealth of knowledge about regional flows resulting from studies in regional sciences and economic geography. Studies that utilize neo-classical theories of local and regional convergence [20] have shown that regions are connected through flows, including those associated with capital, supplies and materials (as measured in traditional input–output models) but also flows of people. Scholars of migration patterns further investigate the latter type of flows. Migration between urban and rural places has been dealt with in the literature of amenity migration [21,22]. Moreover, the literature is characterized by a focus on the ways in which planning and policy may be able to create rural–urban linkages [23,24]. Insights about how entrepreneurs could play an active role in creating such partnerships, however, are missing.

Traditional studies of entrepreneurship in rural areas have focused on the specifics of entrepreneurial dynamics in a less urban, less dense context. Some have distinguished between rural entrepreneurship and entrepreneurship in the rural areas, thereby highlighting that the former depends on rural characteristics such as the availability of certain resources and the latter focuses on a type of entrepreneurship that merely engages with the rural context, but that does not depend on it [1]. Such a perspective resonates with findings in the literature that rural entrepreneurs do not differ from their urban counterparts [25]. Stathopoulou [25] notes that “a rural entrepreneur is someone living in a rural location and the difference between them and an urban entrepreneur may be found in the effects of rurality on the entrepreneurial process” (p. 412). Despite such a non-discriminating perspective, most of the studies that compare rural and urban entrepreneurship are biased towards urban location theories such as those associated with agglomeration economy (urbanization and localization) advantages [3]. However, traditional perspectives on agglomeration economies do not

take social and cultural attributes into account [26]. They also do not take into account that even within the rural context, a certain level of agglomeration economies is important to make the location attractive to migrants, for example [27]. Moreover, traditional agglomeration-oriented studies often neglect the ability of rural areas to connect with urban agglomeration economies through, for example, rural–urban linkages. Focusing on rural entrepreneurs and the ways they utilize rural–urban linkages may be able to correct the traditional deficiency-oriented approach to rural development. Stylized facts about urban versus rural entrepreneurship suggest that metropolitan areas host more entrepreneurs [28] and offer better conditions for them to succeed [29,30]. Furthermore, rural and peripheral regions are claimed to lack important institutional arrangements and a supportive socio-economic environment [31], so that entrepreneurs may be less competitive. Such a view, however, has been criticized for underestimating (1) the importance of social capital for entrepreneurial dynamics in peripheral regions and (2) linkages between urban and rural areas that may help rural entrepreneurs stay competitive.

The first set of studies takes a relational perspective and emphasizes that the social capital of entrepreneurs is important for their success [32–34]. As Westlund and Bolton [35] argue, the primary role of social capital is to give small firms a producer surplus. In this sense, it is comparable to other forms of capital. Then again, it stands on its own, as the diverse and complex shapes it may take will have various (and potentially also negative) effects for entrepreneurial dynamics. The innovation geography literature emphasizes that young and small firms often have limited internal resources to create new knowledge and innovation. Since they strongly rely on external sources of knowledge, social capital becomes crucial for acquiring valuable external knowledge sources [36,37]. The importance of social capital is also used to explain why many entrepreneurs show a relatively low mobility or return to their home regions. Their location decision can thus be explained by the ‘home field advantage’ they possess due to the strong local networks [38–40]. However, the weakness of these studies is that they often confine their analysis to local interactions, leaving aside extra-regional linkages. As local social networks are larger and interaction more regular in urban regions [28,33,34], social capital is considered lower in rural areas, which again may leave them with a disadvantage regarding entrepreneurial dynamics.

The second set of studies argues that competitiveness in terms of innovation, knowledge, etc. arises only if regions are connected to other regions. Here, the dominant focus has been on connections between various urban areas and their respective clusters [41,42]. Theoretically, these linkages have been explained through metaphors such as “global pipelines” [43]. Only a few studies have focused on linkages between urban and rural areas, yet with a focus on innovation and knowledge sources [44,45], and in some cases with a deficiency perspective. Indeed, Grillitsch and Nilsson [46] show that firms in peripheral areas often use external linkages as compensation for insufficient local exchange. A focus on the complementarity of rural–urban linkages with competencies that already exist in the rural context is missing.

A focus on rural–urban linkages in studies of rural entrepreneurship recognizes the importance of relational aspects in understanding entrepreneurial agency. The ways in which entrepreneurs create relationships with other actors is, however, seldom confined to regional boundaries. Local linkages help to embed the firm locally and exploit economic potential. Extra-regional linkages complement local linkages, for example through the acquisition of knowledge and access to markets that are beyond the reach of the rural entrepreneur. Fitjar and Huber [47] show, for the case of Norway, that innovative firms have more international linkages than less innovative firms. For Swedish firms in peripheral regions, Grillitsch and Nilsson [46] conclude that firms in the periphery use external linkages more often than firms in core regions, which implies that they are more important than local links in the peripheral context. Cabiddu and Petinao [45] illustrate for a food processing company in the Ogliastra region of Sardinia how external linkages can strengthen the firm’s absorptive capacity and thus its competitiveness. Thus, for firms that are located in regions with a weak economic environment—that is, rural regions—external linkages to core/urban areas might be particularly important. Although the importance of rural–urban linkages has been stated by some scholars, for example, regarding

extra-regional business partnerships [44] or rural–urban migration of entrepreneurs [48], two aspects remain largely unclear. First, there is limited insight about what these linkages consist of, in other words, what types of material and immaterial flows exist. Second, we do not know why entrepreneurs establish and maintain these linkages, thus, which functions they fulfill. This paper discusses these open questions and contributes exploratory evidence from qualitative interviews, conducted with different types of entrepreneurs in rural Switzerland. Our fundamental claim is that entrepreneurs with rural–urban linkages are able to structure and use these linkages in order to profit from urban economies and draw advantages of a location in rural areas simultaneously. After discussing our methodological approach in the following section, we will discuss this assumption by describing interview data in more detail in the results section, and draw more general conclusions on the content and function of rural–urban linkages in the final section of this paper.

3. Methodological Approach

The aim of this paper is to contribute to the emerging debate about rural–urban linkages and particularly to highlight the role of entrepreneurs in linking peripheries and centers. We take an exploratory approach because of the lack of knowledge about strategies and ways that rural actors, such as the entrepreneurs that we interviewed, take in linking their businesses to urban markets nationally and internationally. The question that we are interested in concerns the ways in which entrepreneurs located in peripheral/rural regions create rural–urban linkages and what functions these linkages have regarding the competitiveness of the rural business.

In this paper, we drew on three separate but thematically related studies that we have conducted from 2014 to 2016. The first study examined so-called new highlander entrepreneurs (NHE). New highlander entrepreneurs are migrants who have moved from urban or periurban lowlands to peripheral mountain regions to establish or operate their own business. We have conducted 15 interviews with such entrepreneurs in the Swiss canton of Grison. As there are no official statistics on the number and type of entrepreneurs who move to mountain regions, we had to identify the firms through a snowball method. As a result, we interviewed those that were identified through this method and were willing to participate in the interview. In our interviews with new highlander entrepreneurs, we focused on their motivation to migrate to the mountains and to establish a business, the entrepreneurial process as well as their social and economic contributions and their connections to urban areas. The second study incorporates results from interviews with seven entrepreneurs in the Emmental, a rural region in Switzerland in which the economy is traditionally focused on agriculture and food production (e.g., milk products such as the Emmental cheese). The entrepreneurs were chosen from a list of 131 manufacturing firms. This list was classified by sectors and a sub-sample of 66 firms that are active in engineering, electrical and metals industries was used to identify interviewees. Firms active in food production were excluded. The seven firms that were chosen from the sub-sample of 66 represent firms that are among the largest, among those with the highest export share, and also those with interesting local histories. The focus of this study was on the ways that these small and medium-sized manufacturing firms are able to keep up with innovation despite their peripheral location. The third study draws on 25 interviews with startup firms in six different peripheral regions in Switzerland. The entrepreneurs were selected from the base population of all manufacturing firms founded between 2005 and 2015 in the case study regions indicated in Figure 1. The sectors covered comprise mechanical and electrical engineering, as well as metal, plastic, and wood processing. The selected entrepreneurial firms are on average five years old and are thus relatively small compared to the firms from the Emmental study. The focus of these interviews was to assess how pre-entry work experience of firm founders influences the organizational structure of the newly created firm. More specifically, we investigated what type of knowledge and business contacts were acquired during previous employments, and how these capabilities are implemented in the new firm. All interviews were conducted in German. Quotes were translated in English and edited for clarity by the authors.

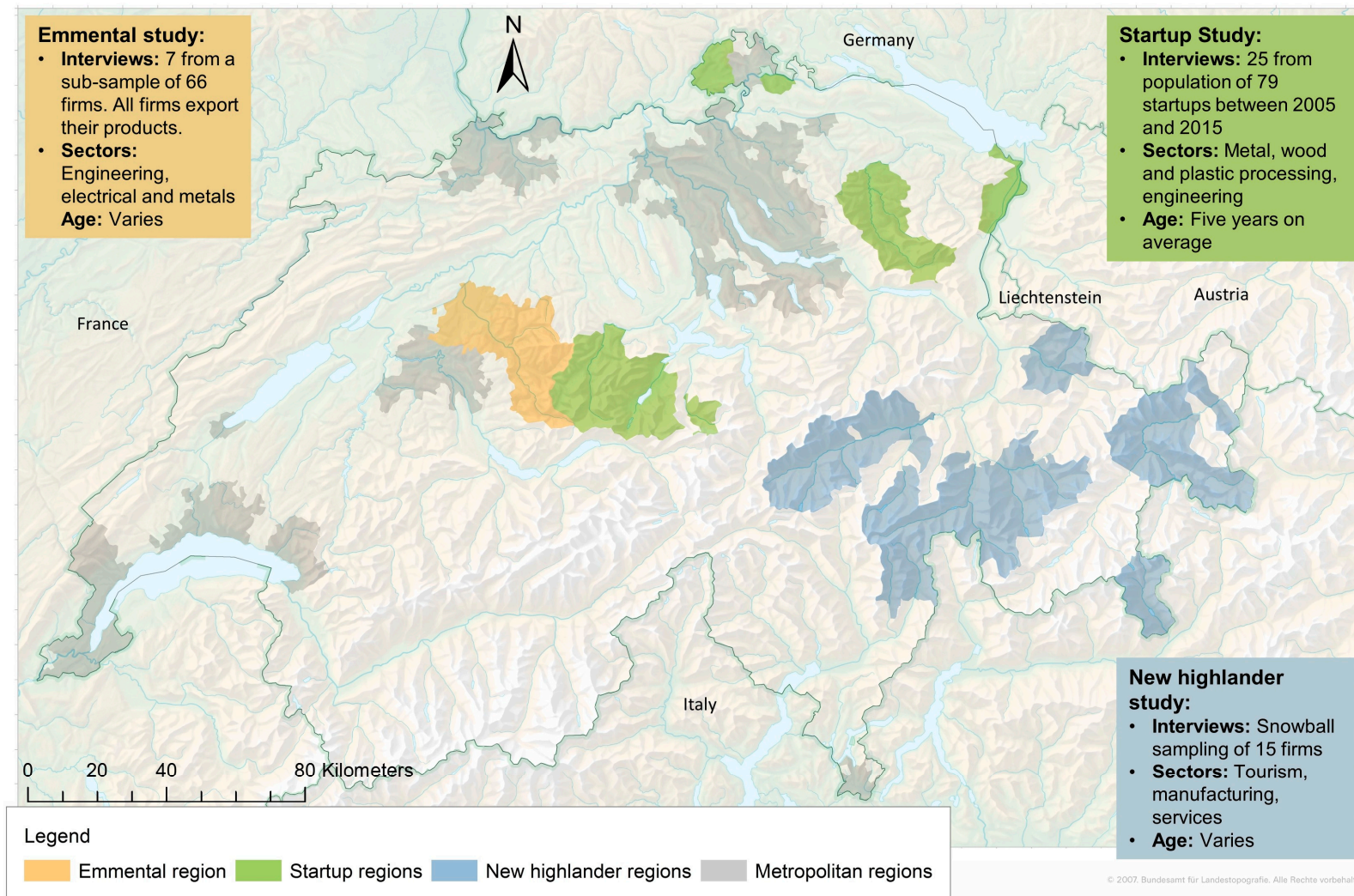


Figure 1. Study regions and information about firm interviews (source: authors).

Although the rural environments differ in our study from mountain to lowland regions, these differences might not be decisive, as the rural entrepreneurs by themselves are aware of the differences between urban and rural contexts. The three studies are part of an overarching research project on the role of entrepreneurship in peripheral regions, and this paper serves as an exploration into the role of entrepreneurs in linking urban and rural areas. The results from the interviews are used to develop initial insights into the various ways in which entrepreneurs located in rural areas connect with urban areas. There are several limitations associated with this paper. Each of the three studies utilized firm interviews. However, the three studies were not conducted as one project. Nonetheless, after analyzing the interviews and discussing the results within the research team, we noticed numerous parallels in the ways that rural entrepreneurs utilize rural–urban linkages. In addition, we noticed a gap in the entrepreneurship and regional development literature that needed to be closed with a conceptual paper. Again, the aim of this paper is to formulate some first theoretical assumptions on how entrepreneurs in rural regions utilize rural–urban linkages, and to exemplify these in an exploratory manner by referring to a limited amount of cases from the studies we mention. As a result, we cannot compare the three studies in a rigorous manner, e.g., test significance, relationships with firm performance, etc. To do that, we would need to replicate the study and enlarge the coverage of firm interviews to the entire rural areas of Switzerland. In addition, emphasis would have to be given to the selection criteria for interviewees in order to assure a relatively homogenous sample regarding age, size and industry. Second, the study is limited regarding the application of the results to other regions in the world. Rural areas in Switzerland are much less peripheral than, for example, rural areas in Scandinavian countries in Europe, regions in North America, or those in Africa. However, we assume that rural–urban linkages are at work when the entrepreneur does not confine his or her economic activity to just the local market. As a result, the three types of linkages we discuss below could well be analyzed in different contexts.

4. Results: Exploring Rural–Urban Linkages from an Entrepreneurial Perspective

Our interviews show that entrepreneurs who are located in rural areas develop and maintain a variety of linkages with urban areas. We differentiate three types of rural–urban linkages. These linkages are vitally important for the performance of firms located in peripheral regions. Consequently, all types of linkages maintain competitiveness, but address different aspects, namely (1) maintaining a high level of information on global market needs and trends; (2) valuating assets of peripheral regions for urban markets; and (3) sourcing knowledge locally and extra-locally for different types of innovation.

4.1. Linkages with Urban Areas Help Create Awareness for External Markets and Entrepreneurs Who Engage in Such Linkages Are Able to Recognize Market Needs and Opportunities

Rural business that want to compete in international markets need to recognize market needs and opportunities. To do so, our interviews show that rural entrepreneurs use a variety of ways to create awareness of these markets and linkages with urban areas play a particularly important role. In some cases, the firms originated in rural areas and build relationships with international markets as they evolved from locally serving to export-oriented businesses. Such export-oriented businesses then may serve as incubators for new firms located in rural areas. In other cases, entrepreneurs migrated to rural areas and brought knowledge from urban markets with them. What all entrepreneurs have in common, however, is their ability to connect to core regions and their respective markets.

Our interviews with small and medium-sized enterprises (SMEs) in the Emmental showed that most of these firms have very traditional roots and emerged because of local market needs. For example, a firm that today manufactures and exports quality hand tools and medical instruments started as a forge in 1878. Initially serving the local market, the firm started to expand into national and international markets in the first half of the 20th century. Today, the firm has an export share of more than 66 percent and is represented in more than 70 countries, while the entire production remains

in the Emmental. Linkages with urban markets are important, particularly regarding the proximity to customers and users. The CEO of the firm noted that “we require proximity to the user in order to start important projects or to invest in the right ones” (Emmental entrepreneur 4). A global orientation is eminently important as she stated further: “It is very clear that the global context is very important. A third of our sales are here in Switzerland and two thirds are abroad. (. . .). This means that we have to cover customer requirements and customer satisfaction globally. (. . .). This means that we have to constantly check requirements, but also check if there are suppliers in this world, who are better for what we need” (Emmental entrepreneur 4).

These export- and innovation-oriented firms can also be important breeding grounds for entrepreneurs. When employers of these types of firms decide to found their own firms in the same industry (spinoffs), the experiences they made will help them orient their firms more effectively towards the specific needs and expectations of the focal markets. Since market demands are strongly influenced by urban innovation systems, lifestyles and narratives, being able to read these market trends, and to orient firm activities effectively towards them, is an essential challenge for many companies in rural areas. This is especially difficult for young firms that are often endowed with less knowledge and resources. Due to the pre-entry work experience at export-oriented firms, especially by experiencing how the company’s activities are linked to extra-regional places and actors (global pipelines), founders of spinoffs are much better able to strategically orient their ventures towards these highly competitive markets in comparison to new firms from founders without these kinds of pre-entry experience. This can be well illustrated by referring to an interview with the founder of a tool manufacturing firm in the Rheintal. The firm started as a necessity venture: “At (the prior employer), the prototype development unit was closed down. The orders were then given to external firms. There I had the chance to start directly. So I took all the orders I could, and that is how I started” (Startup entrepreneur 11).

Due to the founder’s profound experience as a prototype builder at several mechanical engineering companies in the region, he was very aware of the needs and expectations of international markets. Even more importantly, the customers themselves knew it: “So I knew the customers before, because, well all the places I named before, I was in the prototype building unit. And the engineers at my prior workplaces, they came to me to do their experiments. (. . .). So they know, let’s go to (Name of the Entrepreneur) and he will do everything” (Startup entrepreneur 11). Consequently, his company serves as a supplier for some of his prior employers (among them are several multinational enterprises). In addition, he was able to acquire more export-oriented firms as customers, because “the big companies they know each other, and if they want something, something more specific, then they retrieve information on where to get something like that” (Startup entrepreneur 11).

Finally, entrepreneurs who consciously decided to migrate from urban to rural areas to establish a business (e.g., the new highlander entrepreneurs we interviewed) already gained their ideas in the urban areas and are also going back to get inspiration, as one hotel manager said: “I let myself be inspired by the city. Not for copying, but to get new ideas” (New highlander entrepreneur 6). Moreover, the awareness of the necessity of extra regional connections is also prevalent by new highlander entrepreneurs. A female entrepreneur who developed a bike shop/bike guide tour agency illustrated this by saying: “There are a few professional events that I try to go. Two to three such events each year are a ‘must have’. I connect with other people at such events. We discuss ideas or I notice in which directions other regions develop. Do our offerings here fit at all? We might have to expand or reorient” (New highlander entrepreneur 1).

4.2. Entrepreneurs in Rural Areas Are Able to Value the Various Disadvantages Typically Ascribed to Their Peripheral Location. Linkages with Urban Areas Are Important Regarding the Opportunities that Exist for the Valuation of Such Disadvantages

Rural locations, and in particular mountain regions, are often romanticized, and urban dwellers often attribute a sense of originality, traditional craftsmanship, naturalness, and sustainability to

these areas. These positive rural connotations often stand opposite to a variety of negative aspects of urban life. Thus, rural products that credibly transport these rural values have a clear market advantage, as products from urban areas cannot embrace these values authentically. Entrepreneurs who develop and make products in rural regions are able to bring these sentiments to urban areas and hence, not only the product itself will be bought but also all the connotations with it. Studies of rural entrepreneurship have identified this advantage as the “paradox of the periphery” [49]. If an entrepreneur is thus able to utilize rural–urban linkages regarding his or her goods and if she or he also has insights about urban consumption patterns, then what seemed as an initial disadvantage of a rural region can be turned into a sales argument, and “entrepreneurial skills are associated with a preserved, rural environment that provides a better quality of life and an escape route for stressed metropolitan newcomers” [50]. One example from our interviews with new highlander entrepreneurs illustrates this. In this example, an entrepreneur who exports agricultural products from his farm in a mountain area to urban regions noted that his community respectively village (Lavin) “is also a brand. When I say to people from Zurich that I’m a mountain farmer in Lavin then they say ‘oh nice, in the mountains!’ Sometimes they have romantic ideas” (New highlander entrepreneur 4). In another example, the blacksmith in another mountain community who exports artisanal knives and artworks to urban areas stated that it is a “big market advantage to be here” and to leverage the rural/mountain brand even more, he engraves on every knife the name of the mountain community where his blacksmith shop is located (New highlander entrepreneur 5).

Similar examples could be found in the biosphere reserve of Entlebuch. There, entrepreneurs purposefully use the image of the biosphere when selling their cosmetics made out of local plants, or skis made out of local wood. “It [the origin of the product] helps me indeed. But the farther away I go, the less the specific origin plays a role. Then it is really the wood. (. . .). This is what catches your eye. And it is nature-oriented, creates a link to nature, it is different. One certainly shouldn’t underestimate that” (Startup entrepreneur 6). The majority of customers live in urban areas and emphasize the importance of natural products, traditional crafts and sustainable production some of them even come to the production site in order to experience the values that are attributed to the goods they buy. The importance of rural–urban linkages becomes clear, as entrepreneurs have to identify urban demand on the one hand, and generate authenticity with regard to the values attributed to the products on the other hand.

Not only is the transportation of value to urban customers important to rural entrepreneurs. In addition, rural entrepreneurs leverage their location and the image these locations carry when they want to convey the quality of their goods. One business located in the Emmental, for example, highlighted how important it was to showcase the rural location to international customers. The CEO of this firm said that “our guests like to come here and they bring their best customers. Because we can fix images in their heads about the product and its environment. (. . .). Our environment actually helps our niche product. We can communicate pictures, or to put it differently, we can transmit an emotional value. Storytelling is a great communication tool. Yet, most important is the product’s value and only secondly it is the experience value” (Emmental entrepreneur 4). As this quote illustrates, seeing how the firm is embedded in the soft-rolling hills of this region, helps the firm tell the story and convey emotions regarding its products. This seems to be particularly important for niche products that are developed and manufactured in a rural context.

4.3. Entrepreneurs Who Engage in Rural-Urban Linkages Leverage Local Knowledge Sources for Incremental Innovations and Non-Local Knowledge Sources for Radical Innovations

Our interviews show that entrepreneurs leverage local knowledge sources for incremental innovations and non-local knowledge sources for more radical innovation. Especially in thin regions like the rural areas we examined, the DUI (doing, using, interacting) mode of innovation is used, as the regional innovation system is rather weak [51]. Other evidence suggests that completely different knowledge (especially analytic, synthetic) is acquired through exogenous sources [52]. Our interviews

suggest that rural entrepreneurs who engage in rural–urban linkages utilize a variety of ways to leverage knowledge outside of their location. They engage in networks, they leverage contacts with suppliers, higher education institutions, etc. located in urban regions. Through this ability to complement local with non-local competencies, rural entrepreneurs may be better able to retain their business' competitiveness.

Especially those new highlander entrepreneurs who run a knowledge-intensive firm are conscious about the importance of external knowledge for the success of their businesses. An architect said that "it is important to use the most advanced construction techniques, otherwise always the same things happen and I didn't want that. We are in close contact with what is happening in the urban areas" (New highlander entrepreneur 12). Most of the new highlander entrepreneurs were able to establish knowledge linkages already before they migrated to the rural area, as the example of a dentist shows: "I'm in a study club with six other dentists from Fribourg, Solothurn and Lucerne. When I still was in Bern I was aware that I have to get into such a study club. We meet every two months" (New highlander entrepreneur 15).

Another illustrative example is the case of an engineering company, which has to meet three several technological challenges in order to secure the competitiveness of its product. The first challenge concerns the technical requirements for the product that will be manufactured with the newly developed machine. The newly employed technology makes it necessary to access advanced scientific knowledge concerning product design and technical specifications. Therefore, partnerships with firms and research institutes, mainly in Germany, are used. "The network is not huge, but we get exactly what we need. (. . .). We have different [project partners] where we get metal plates, where we can make samples, who can do some calculations for us" (Startup entrepreneur 10). The second challenge regards advanced, but, but already well-developed and ready-to-use production technology. Developing its own technological application would be far too costly and complex. Since no firm with the adequate competences for this technology is present in the rural home region, the firm has to orient itself towards external actors to buy these components, in this case, a non-local large international company. The third challenge, concerning the control and feedback control systems of the machine, is quite different, since strong interaction with local actors is necessary there. The calibration of these components is a very time consuming and incremental process and requires regular and constant interaction with the supplier of the control system. Consequently, the chosen supplier is in very close proximity of the machine manufacturer in order to assure a smooth and regular interaction. "The control system is fundamental for a machine. And we had a control system manufacturer just 2 walking minutes away (. . .). That was perfect for us of course. (. . .). We had to outsource the control system, but I am 100% dependent on him. If the control system doesn't work, you can dump the whole machine. And that he was in the village was a huge advantage for us (. . .) especially during the time when we set up the control system" (Startup entrepreneur 10). This example shows that local forms of knowledge exchange might be more important for incremental innovation, while external linkages might be used to source technology and know-how that cannot be accumulated in rural regions.

The firms that we interviewed in the Emmental had similar experiences. Building on strong in-house competencies, many of the SMEs that we interviewed were crucially aware about the limitations of their knowledge. They argued that when they needed new ideas and insights that may lead to more radical innovation, they had established or were searching for contacts with partners in other regions (often urban areas). Partners they mentioned were higher education institutions, research institutes, suppliers, etc. One interviewee noted that their employees "fiddled, fiddled and fiddled about until they got a solution", but when they are faced with challenges that are outside these competencies they collaborate with higher education institutions in Zurich or Bern. The same practice was mentioned by several other entrepreneurs, who all highlighted the importance of such linkages to their firm's competitiveness.

Figure 2 summarizes and structures the exploratory results.

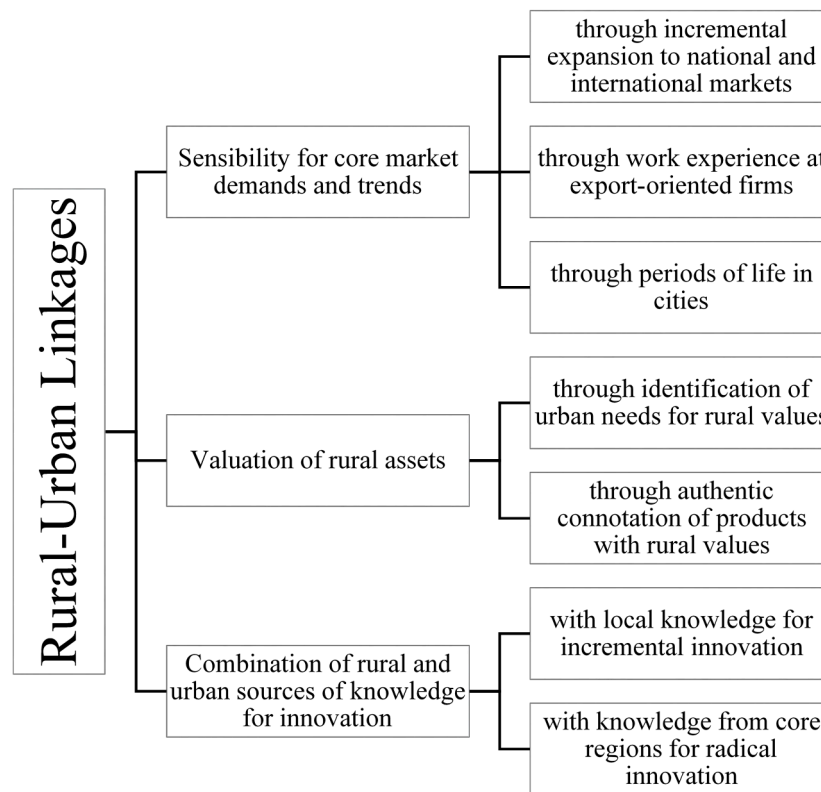


Figure 2. Rural–urban linkages from an entrepreneurial perspective (source: authors).

5. Conclusions

In the context of increasing urbanization and spatial disparities, there is the danger that urban and rural economies drift apart even further. This may lead to uneven regional development that in the end is not sustainable from an economic perspective. Entrepreneurs who create and actively develop rural–urban linkages can play a key role in developing sustainable vital rural economies and connecting these economies to the wider national and even global markets. Such entrepreneurial rural–urban linkages might play an important role in decreasing spatial disparities between centers and peripheries. As our research shows, rural–urban linkages from an entrepreneurial perspective can take on three functions (see Figure 1). First, such linkages help entrepreneurs create a sensibility for core market demands and trends. Second, rural entrepreneurs strategically utilize rural–urban linkages to value rural assets that have traditionally been perceived as backwards, disadvantageous, burdensome, etc. Third, rural–urban linkages are used to combine rural and urban sources of knowledge for innovation, which, in turn, puts a competitive edge on rural businesses.

We have not touched on several important questions that may arise from this study. One such question regards the connection between rural–urban linkages and firm competitiveness. We cannot infer from the presence of rural–urban linkages that the firms are more competitive than those rural firms that do not engage in such linkages. While this study presents some exploratory evidence regarding the functions that these linkages can fulfill, testing such relationships could be done in future studies. However, such studies would need to be designed as to compare and contrast firms that engage and do not engage in relationships. We also have not addressed differences between industry sectors. How do manufacturing firms differ from service firms? Does the supposedly larger market share of manufacturing firms lead automatically to viable rural–urban linkages in the sense we describe here? Future studies would need to pay attention to such differences through e.g., a comparative research design.

Why is a focus on rural entrepreneurs and the ways they create rural–urban linkages important for considerations about sustainable economic development of urban and rural regions? Rural–urban linkages as presented here might help increase the competitiveness of rural firms. Increasing rural competitiveness is crucial when rural economies need to stay vital. Such a perspective acknowledges the fact that rural areas are not just realms of nature, but they are also important economic realms. Rural–urban linkages might give rural economies development opportunities and might reduce the one-sided dependency from urban dynamics. Asymmetrical economic relations increase the risk of uneven and thus unsustainable economic development. In this sense, vital linkages may help achieve a common understanding about the role and function of rural areas. Understanding these linkages also contributes to a contextual, dynamic and holistic understanding of sustainable urbanization. Urbanization should not be seen in isolation of rural development. Urban and rural are intimately connected and interdependent. However, we also need to avoid a dichotomous understanding of urban and rural realms. Rather, a perspective on linkages acknowledges that urban and rural, center and periphery, are connected along a continuum. The relationships between these realms are dynamic and change depending on context and situation. As a result, a relational perspective on the connections between urban and rural economies is essential when considering sustainable development.

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