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## **Virtual Business Incubators: A Support for Entrepreneurship in Rural Areas?**

**Jörg Freiling<sup>1</sup>, Leon Marquardt and Tatevik Reit**

### **Abstract**

This chapter examines the lack of entrepreneurial resources for venture development in rural regions and presents a study of how virtual business incubators (VBIs) can fill this gap and support rural entrepreneurial activities. The authors employ a single case study approach in which the empirical data builds on six interviews conducted with rural entrepreneurs and managers of VBIs. The data collection and data analysis follow the grounded theory approach set forth by Charmaz (2014). The main contribution of this research is the application of the VBI concept in the rural entrepreneurship context, with the aim of overcoming the challenges inherent to this context while conserving its benefits.

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## 4.1 Introduction

There is growing evidence that accelerating value creation through entrepreneurial activities (Bosma et al., 2020) depends to a large extent on basing such activities in vibrant urban entrepreneurial hotspots like Silicon Valley or Tel Aviv (Startup Genome, 2020). In the case of rural environments, given a lack of support infrastructure, entrepreneurship can hardly reap its potential as a formidable driver of job creation, innovation and economic growth (Dhahri & Omri, 2018; Ihugba et al., 2013). Rural regions have become increasingly decoupled from the high speed of innovation and digital transformation in bigger cities and urban agglomerations. This decoupling is reinforced by an unfortunate combination of poor socio-economic environment and infrastructure, low population density, aging population, and distance from markets and services (Brown & Schafft, 2011; Easterlin et al., 2011; OECD, 2020). Policymakers in rural regions find themselves confronted with the question of how to fight this disadvantageous development (Müller, 2016; Ribeiro-Soriano, 2017), to stem the tide of migration to cities, and to close the gap between city and countryside. The obstacles to rural entrepreneurs are often insurmountable, forcing them to move their business to urban areas to access a supportive environment and to leave the rural region for good (Mack & Mayer, 2016; Roundy & Bayer, 2019). Given the difficulty faced by policymakers seeking to provide sufficient entrepreneurial resources in quantity and quality in rural regions, the present chapter presents an alternative: supporting the activities of rural entrepreneurs by embedding virtual business incubators in their entrepreneurial environment. We focus on incubators rather than accelerators as a first development step to enhance the entrepreneurial support infrastructure in rural areas.

A virtual business incubator (VBI) is identical to its physical counterpart – providing support services such as networks, business training, and access to funding – but differs in its lacking of physical proximity and thus offering its services virtually (Barbero et al., 2012). In bridging this geographical distance, VBIs may pave the way to overcoming resource scarcity and the lack of support infrastructure in rural areas (Zinke et al., 2018), thereby preventing potential entrepreneurs from migrating into cities (Haugh, 2020). This may hold particularly if the VBI design takes into consideration the distinct challenges of rural entrepreneurship, i.e., the lack of density and interconnectedness, limited access to upfront infrastructure, the fewer and more tenuous connections of rural entrepreneurs, and the specific market structure of rural regions (Brown & Schafft, 2011; Dabson, 2001).

The literature to date on VBIs is lacking an examination of resource transfer opportunities for rural regions. The present chapter thus seeks to explore the possibilities for VBIs to facilitate entrepreneurial activities in these regions by identifying the specific traits and challenges of rural entrepreneurs and strategies for VBIs to address them. To generate insights on the mechanisms for bridging entrepreneurial resources through VBIs, this study builds on an explorative grounded theory approach, extending the work of Charmaz (2014) as a research design to generate in-depth knowledge without neglecting the

contextual setting. At the core of this study is the analysis of empirical data collected through semi-structured interviews with rural entrepreneurs and representatives of virtual business incubators.

## **4.2 Conceptual Background**

### **4.2.1 Entrepreneurship in Rural Areas**

More recent scholarship has emphasized the importance of context in exploring and explaining entrepreneurship (Welter, 2010; Zahra, 2007), specifically the enabling and constraining influence of environment on entrepreneurial behavior (Johns, 2006). Entrepreneurial activities may run more smoothly (Welter et al., 2019) in case of a supporting institutional (Polanyi, 2001), social (Granovetter, 1985), or spatial embeddedness (Steyaert & Katz, 2004). Accordingly, entrepreneurship scholars have increasingly focused on exploring the context of entrepreneurial activities to investigate its impact on the extent and quality of these activities (e.g., Autio et al., 2014; Nijkamp, 2003). Such studies commonly address entrepreneurial activities in metropolitan regions (e.g., Audretsch & Belitski, 2017; Mason & Brown, 2014; Spigel, 2016) and do not sufficiently consider the emergence of entrepreneurship in rural settings. As an urban versus rural context of venturing seems to matter in terms of the run of events and the outcome of venturing, it is important distinguish the peculiarities of rural areas relevant to entrepreneurship issues.

There is broad ongoing debate about the essence of rurality (Pato & Teixeira, 2016). Some approaches build on “hard” measures such as geographic scope, population density and local economic structures, while others build on “soft” measures such as characteristics of social networks within a community (du Plessis et al., 2001; Labrianidis, 2006; Stathopoulou et al., 2004). More recent terminological approaches to rurality reflect changing perceptions of rural regions stemming from declining dependence on traditional agriculture and forestry, acknowledging the economic transformation to multi-sectoral activities (Galvão et al., 2020; Pato & Teixeira, 2016). Rural areas nevertheless continue to be characterized by fewer and less-connected resource endowments in terms of infrastructure, financial capital and human capital, stemming from and resulting in increased resource deprivation (Lavesson, 2018; Lekhanya & Visser, 2016). Rurality is also often associated with a high degree of remoteness and, therefore, a low level of market access (Sternberg, 2009). Although the rural context has inherent shortcomings that may complicate entrepreneurial activities, some individuals do recognize and exploit entrepreneurial opportunities that stem from this context.

Even though research on rural entrepreneurship is gaining currency among entrepreneurship scholars (Pato & Teixeira, 2016), it remains a niche topic in entrepreneurship research (McElwee & Smith, 2014), leading to the absence of a uniform understanding. The variety of real-life phenomena in the realm of rural venturing leads to the considerable heterogeneity (Ward & Brown, 2009). In one of the earliest efforts to conceptualize rural entrepreneurship, Wortman (1990) defines it as “the creation of a new

organization that introduces a new product, serves or creates a new market, or utilizes a new technology in a rural environment” (p. 330). Kalantaridis and Bika (2006) highlight spatial characteristics as determinants for rural entrepreneurship and describe it as an entrepreneurial activity emerging in “places characterized by large open spaces, small population settlements relative to the national context” (p. 111). Thus, rural entrepreneurship is distinguished by its spatial components (Korsgaard, Ferguson, et al., 2015).

While it is broadly understood that context constitutes the meaningful peculiarities of rural entrepreneurship, scholars have increasingly pointed to its content dimension by highlighting the personal traits of rural entrepreneurs. Rural entrepreneurs are found to be individuals having an intimate relationship with and emotional attachment to their (rural) home region and hence are also committed to developing it by means of their entrepreneurial action (Korsgaard, Müller, et al., 2015; McElwee & Atherton, 2011). Scholars point out the difference between rural entrepreneurship and entrepreneurship in rural areas, with the former being highly socially and economically determined by the rural setting (Akgün et al., 2010; Müller & Korsgaard, 2018) and the latter being entrepreneurial activity located in a rural area but with less engagement and lower levels of embeddedness (McElwee & Smith, 2014).

Both the specific context and the content have an impact on the process dimension of organizational phenomena (Pettigre 1987). Due to the different profiles of entrepreneurs and their distinct support constellations, processes often take longer and reveal a variety of interaction profiles among founders and external stakeholders (Korsgaard, Ferguson, et al., 2015).

The dimensions of context, content, and processes thus suggest a specific profile of rural entrepreneurship – one of rurally socialized and/or committed entrepreneurs capitalizing on the strengths and coping with specific challenges of rural regions.

Alongside the personal traits of rural entrepreneurs, research has addressed *location-specific advantages* in rural areas. These result from beneficial physical, social, and economic features that can bear entrepreneurial opportunities (Stathopoulou et al., 2004). For example, rural areas usually feature less competition, lower operating costs, proximity to spatial resources (Korsgaard et al., 2021), and often a higher level of social cohesion within their community (Müller, 2016; Pallares-Barbera et al., 2004). Entrepreneurs can also benefit from more personal networks and a sense of community within rural areas (Freire-Gibb & Nielsen, 2014). Kalantaridis and Bika (2006) argue that rural entrepreneurs also benefit from rural human capital through greater employee stability and loyalty.

Further studies in entrepreneurship research deal with obstacles to rural entrepreneurship. For example, the small population size and limited local demand hinder rural entrepreneurs from reaching economies of scale compared to urban regions with higher densities of population, potentially resulting in higher production costs (Dabson, 2001). Related to this are higher distribution and marketing costs to enter external, distant markets (Lekhanya, 2018; Sternberg, 2009). The small population size also limits the number of potential interpersonal interactions that are important for entrepreneurial survival (Francis

& Sandberg, 2000). Rural areas are often associated with deep-rooted, cohesive social networks, which often serve entrepreneurs as important sources for resources (Rooks et al., 2016). Baumgartner et al. (2013), however, stress that these kinds of social settings constrain information flows through interactions often limited to family, friends, and close acquaintances. A lack of diversity of relationships may hinder crucial processes for venture development, such as outside-the-box thinking (Perry-Smith & Mannucci, 2015). Such social surroundings can also limit the emergence of entrepreneurial behavior due to the fear of social exclusion resulting from potential failure, among other possibilities. This often leads to an under-developed entrepreneurial culture, which has an important impact on the emergence of entrepreneurial behavior (Spigel & Harrison, 2018), and which is reflected in a less encouraging attitude towards entrepreneurial action in rural areas (Honig & Dana, 2008). Additionally, entrepreneurial ventures are often confronted with difficulties in finding access to skilled and educated human capital (Deller et al., 2019). Closely related to this is lack of knowledge due to the shortage of human capital and the absence of knowledge spillovers from other firms and universities (Audretsch & Lehmann, 2005).

In summary, research has shown that rural entrepreneurs face challenges in the low availability of entrepreneurial resources due to remoteness from vibrant entrepreneurial hotspots and, therefore, a lack of access to their agglomeration effects. Rural areas also lack the necessary network diversity, network dynamics, and entrepreneurial support infrastructure that characterize thriving entrepreneurial ecosystems, particularly in urban regions (Haugh, 2020). To tackle these regional issues, digital solutions and their ability to span geographical boundaries (Nambisan, 2017) seem promising. Research concerning such opportunities to foster entrepreneurship is nevertheless still in its infancy (Sussan & Acs, 2017). This chapter thus seeks to explore how VBIs can help overcome entrepreneurial disadvantages arising from geographic isolation.

#### **4.2.2 Virtual Business Incubators**

Our knowledge-based economy has decreased the importance of physical work spaces through the emergence of virtual networks and virtual value creation (Cakula et al., 2013). This general development has been reinforced considerably by the Covid-19 pandemic and resulting physical proximity restrictions (Engels, 2020). These trends have galvanized the development of entrepreneurial support systems, as seen in the rising number of VBIs (Hausberg & Korreck, 2020). VBIs are described in the context of physical incubators as follows: “A business incubator is a service provider that offers a comprehensive package of services (more than one) designed to support, facilitate and accelerate the growth of starting businesses. A VBI does this with services and tools that are – at least to a significant extent – independent of the location of the service provider and/or the users of these services” (Triodos Facet, 2011, p. 22). VBIs are thus similar to their physical counterparts when it comes to the services they provide, but are decisively distinct with regard to physical space. Owing to their virtual character,

VBI are able to bundle and provide international resources in the form of expert knowledge and advice, a network of entrepreneurs and investors from all over the world, international virtual training programs, and online access to financing and funding without requiring physical proximity (Triodos Bacet BV, 2011; Tsai et al., 2009).

Interestingly, research on VBIs began even before they actually existed. Nowak and Grantham (2000) introduced a conceptual model of a virtual incubator, which should be internet-based and possess formalized control systems, a market focus, distributed resources, management expertise, and a focus on human resources and human capital. They stress the relevance of VBIs for fragmented industries such as the IT sector, as VBIs bundle distributed resources and make them available to entrepreneurs who otherwise could not access them. Barbero and colleagues (2012) emphasize that VBIs facilitate the early strategic alliance formation between individuals, groups, and institutions that could not have taken place physically due to geographical distances. VBIs thus have clear relevance to the circumstances of incubatees from remote areas, who are mostly fragmented and often seek to overcome their lack access to relevant business resources by migrating to startup hubs in larger cities (Dabson, 2001).

Zedtwitz (2003) adds that, unlike physical business incubators, VBIs do not focus on a specific industry or a geographical area, but rather center on entrepreneurial needs. In further comparison with physical business incubators, VBIs enjoy significantly higher market reach and larger social networks through their location independence. Thus, incubatees are provided access to their relevant market and a network of fellow entrepreneurs, investors, and advisors without having to leave their environment. Another essential quality of VBIs is their flexibility in providing an exact match between entrepreneurial needs and VBI resources. Many entrepreneurs struggle to find specific advice for their business in their environment. This challenge could be met by the huge entrepreneurial and expert networks of VBIs, whose databases enable entrepreneurs to find resource providers fitting their specific needs (Zedtwitz, 2003).

Carayannis and Zedtwitz (2005) emphasize the relevance of VBIs in less-developed entrepreneurial economies as they bridge divides in knowledge, digitalization, socioeconomic policy and culture, and increase accessibility and availability of financial, human, intellectual, and social capital. However, despite their large networks, the interaction between entrepreneurs in VBIs is relatively low and left to the entrepreneurs' initiative (Zedtwitz, 2003). This means that the crucial benefit of location-independent connections and resources would be reserved for those entrepreneurs who actively pursue such resources from the VBI.

Despite its history of more than 20 years, the VBI literature is still in its infancy. The most relevant papers date to the 2000s, when VBIs and their potential were not as established as they are today and thus could not be examined in their current breadth of context. Their growing practical relevance and increasing number further point to the merits of continued research. VBIs' lack of location dependencies



and their capacities to bundle and match resources make them particularly interesting in the context of rural entrepreneurship, as they address its particular challenges while conserving its inherent benefits.

## **4.3 Method**

### **4.3.1 Research Design**

This study follows the social constructivist approach adopted by Charmaz (2014), acknowledging that the observations are closely interrelated with the context, socially constructed, and subject to the interpretations of the authors. Considering that rural entrepreneurship is highly dependent on the context where it occurs, this study does not aim to generalize the findings but to observe and analyze the interviewees' perceptions and experiences to understand the respective setting through a single case study (Yin, 2017). Since there is little knowledge on how VBIs can support entrepreneurs in rural areas, this qualitative approach appears suitable to explore resource interaction opportunities.

### **4.3.2 Data Selection and Collection**

This study applies its design in one of the most rural regions in Germany – Lower Saxony – as a unit of analysis reflective of the context described above. Lower Saxony was selected as it is the second-largest federal state in Germany with a rather low population density containing urban centers, but more importantly a lot of rural areas (Statistisches Bundesamt, 2021). Interestingly, Lower Saxony is one of the top five federal states in terms of foundations, and hence ranks above the average rate for Germany (Bundesverband Deutsche Startups, 2020). Furthermore, Lower Saxony is notable for a high number of start-up support initiatives at the state and regional levels.

Primary data sources are in-depth interviews with founders in rural areas as well as interviews with employees of VBIs. The former were identified via the personal network of the authors and the online platform “[startup.niedersachsen.de](https://startup.niedersachsen.de/).”<sup>2</sup> VBI employees were identified through web search. These data sources allow a comprehensive view of the support of entrepreneurial activities in rural regions, directly addressing the primary aims of this research. Following theoretical sampling principles suggested by Glaser and Strauss (1967) for data selection, potential interviewees had to fulfill certain criteria. For entrepreneurs, the requirements were to have a business located in a town or municipality with a population of fewer than 20,000 and located more than 30km away from a major urban center, or else to have grown up in such a place. Incubators had to have a program that consisted largely of digital elements. Potential interviewees were then contacted via email or LinkedIn. In total, six interviews were conducted between April and September 2021, meeting the requirement of a qualitative single case study (Eisenhardt, 1989).

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<sup>2</sup> See: <https://startup.nds.de/>

The primary data consist of six interviews with five entrepreneurs located in rural areas and two managers of VBIs (see Table 1). The secondary data results from the screening and analysis of public statistics and the websites and social media channels of the interviewees to gather further information regarding governmental initiatives, business backgrounds and the incubation programs. The interviews lasted between 30 and 100 minutes, were held virtually via Zoom (as necessitated by the Covid-19 pandemic), and conducted in German as the preferred language of the interviewees. The empirical data were generated using a semi-structured interview guide based on open-ended questions. The first part of the interview guide facilitated storytelling and focused on personal backgrounds, founding and business processes, and perceptions of the rural context. The second part focused on perceived resource shortcomings as well as resource mobilization and interaction. The interview recordings were then transcribed using the InqScribe<sup>3</sup> and MAXQDA<sup>4</sup>.

| Interviewee    | Business                   | Comments   |
|----------------|----------------------------|--|
| Entrepreneur 1 | Platform                   | Platform to support farmers and ensure fair dealing for them and their goods |
| Entrepreneur 2 |                            |  |
| Entrepreneur 3 | Coworking space            | Professional experience in a corporate incubator program                     |
| Entrepreneur 4 | Platform                   | Tourism platform to connect travelers with alternative camping sites         |
| Entrepreneur 5 | Platform                   | Platform for the referral of craftsmen                                       |
| Expert 1       | Virtual business incubator | Focusing on individuals associated with a university                         |
| Expert 2       | Virtual business incubator | Focusing on digital innovation   |

**Table 4.1** Interviewee profiles

### 4.3.3 Data Analysis

In a grounded theory approach, coding refers to a multistage analysis in which the researchers process the data into codes, concepts, and categories that the researchers continuously validate, develop and relate to each other (Strauss & Corbin, 2010; Strübing, 2014). Coding is thus an iterative, creative and interactive process of understanding and interpreting text passages, which means that the researcher takes an active part through labeling and constructing the data (Breuer, 2010). According to Charmaz (2014), coding in grounded theory research consists of two types: initial coding and focused coding.

During the initial coding, the researchers created codes by defining and labeling the collected data while remaining open and allowing topics to emerge by staying close to the data (Charmaz, 2014).

<sup>3</sup> See: <https://www.inqscribe.com/>

<sup>4</sup> See: <https://www.maxqda.de/>

Following this coding strategy, the transcripts were coded with MAXQDA and resulted in a total of 702 initial codes. The number of codes for each interview ranged from 65 to 130. During the coding procedure, the researchers used the most significant and frequent codes to sift the empirical focused data and categorize the data “incisively and completely” (Charmaz, 2014). The initial codes were processed into eleven categories. Through further analysis (similar to axial coding) and discussions between the researchers involved, these categories were synthesized and related to each other, resulting in three categories (see 4.4.2).

#### **4.3.4 Research Validity**

Qualitative research requires the fulfillment of quality criteria, particularly when many investigations using other than statistical research methods are generally referred to as qualitative studies without further quality requirements (Ali & Yusof, 2011). In order to ensure data rigor, different triangulation methods have been applied. Data triangulation has been used by collecting and analyzing primary data in the form of semi-structured interviews and secondary data in the form of blogs, websites, social media content, and newspaper articles concerning the interviewees and the conceptual research topics as suggested by Yin (2017) and Eisenhardt (1989). Method triangulation has been applied by considering interviews as well as secondary documents and observations. Furthermore, all researchers were involved in the development of the interview guides and the collection and analyses of the data. The authors individually developed codes and categories and discussed the results with each other for purposes of investigator triangulation (Guion et al., 2011). Regular discussions among the researchers relating to the challenges and outcomes of the research were held in order to eliminate researcher bias as much as possible. This method of peer debriefing has been additionally deepened through discussion of relevant codes and methods for categorization (Krefting, 1991).

### **4.4 Findings**

#### **4.4.1 Case Description**

This section presents the personal background of the five entrepreneurs and their businesses to provide information regarding their motivation to locate their entrepreneurial ventures in rural areas. The backgrounds of the two VBI employees are then presented. These descriptions are based on the first part of the interviews and the complementary secondary data.

The venture of Entrepreneur 1 and Entrepreneur 2 is located in a rural area between Hamburg and Bremen. Both founders have an academic background – one in energy and environmental management and the other in renewable raw materials and renewable energies. After travelling around Europe together, they founded their business in July 2019. Their venture provides a platform that aims to connect

farmers and end consumers to nurture sustainable agriculture. Similar to well-known crowdfunding concepts, regional agricultural businesses are financially supported in their transformation from traditional to organic sustainable farming and the expansion of their direct marketing. In return for financial support, end consumers receive products and/or services from the farms of the region. The founders' goal is to promote sustainable ecological agriculture in Germany. With their business, they have participated in a physical accelerator program and in a virtual incubation program.

With a degree in management and entrepreneurship, Entrepreneur 3 started her business in the middle of Lower Saxony. Afterward, she was employed by a PR agency and then for several years as communication manager in a corporate incubator program that provides coworking facilities, funding, and other support to startups. Four years ago, during her pregnancy, Entrepreneur 3 and her husband decided to move to the husband's hometown to be able to raise their children in a calmer environment. With a friend from this town, she opened a coworking space. Their services include the provision of coworking facilities with high-speed internet. They also offer their premises for rent for hosting various courses such as local yoga classes and educational courses. More recently, they have begun using their facilities to host community events. With their venture, the founders want to facilitate the compatibility of life in the countryside with career success. Entrepreneur 3 also supports the local community by sharing her expertise regarding marketing and entrepreneurship.

Entrepreneur 4 founded his business in the southwest of Lower Saxony. Prior to his entrepreneurial career, he studied tourism management. Following his study program, he completed an internship at a startup active in alternative tourism in Hamburg, where he gained his first experience with startup processes. Driven by his passion for nature and his startup experience, Entrepreneur 4 developed his idea of a tourism marketplace. Since 2020, this C2C platform has enabled camping tourists to book camping sites on the private premises of locals far from crowded camping spots. He chose his place of operation because he knows the place very well, having grown up there and maintaining his local personal networks. He also appreciates the beauty of this place and perceives it as a good place to start offering camping sites within this region. He is responsible for quality management and maintains contact with the hosts, takes care of the website and service optimizations, and expands his network of hosts. Through his business, Entrepreneur 4 seeks to minimize the distance between city and country lifestyles.

Entrepreneur 5 is located in the middle of Lower Saxony. Before launching his venture, he did an apprenticeship as a mechatronics engineer and studied international industrial engineering. During an internship abroad, he gained experience in an AI startup. Entrepreneur 5 then worked as an operating engineer for a couple of years. While employed, he helped a friend launch a startup, which triggered his desire to start his own business. Together with a friend, he worked on the idea of an online platform that connects craftsmen and customers, which they launched in August 2020. At the time of the interview, Entrepreneur 5 explained that he no longer operates from his rural hometown since he wanted to live in

a bigger city. Further, he argues that he benefits from operating in the city due to the high number of craftsmen in his physical proximity.

Expert 1 works in a VBI associated with a university. This VBI provides its services to students, graduates, scientists, and other employees associated with the university. It supports these groups in turning their business ideas into business plans. The VBI developed out of a campus initiative launched by a research institute in 2015. Expert 1 is working there as a startup manager, and is responsible for startups that have been granted business startup funding. Additionally, he conducts first consultations to nascent teams and guides them, starting with their idea phase through to the founding of their business and beyond, for as long as they remain affiliated with the university. He is also involved in improving the VBI's virtual support platform and organizing its startup podcast.

Expert 2 works for a VBI funded by public entities. It started operating in 2019 and aims to foster entrepreneurs focusing on digital innovation. Entrepreneurs must meet three requirements to participate in the incubation program. First, the venture has to be based on a digital business model. Second, it needs to be innovative. Third, it needs to be scalable in the long term. After acceptance, entrepreneurs can receive free coaching and access a network of startups, established firms, and universities. Expert 2 has a background in political science with a focus on governance. She previously worked as a networker for educational institutions. Within the VBI, she supervises and supports the founders in general matters but also in its networking activities.

#### **4.4.2 How Virtual Business Incubators Can Support Entrepreneurship in Rural Areas**

The empirical findings (translated for this volume by the authors) reveal that rural entrepreneurs in Lower Saxony face a variety of challenges when launching and operating their ventures. They also show how VBIs seek to lift barriers stemming from geographical isolation. Through comparing and synthesizing these two bodies of data, three distinct categories emerged that illuminate how VBIs specifically support entrepreneurs in rural areas: (1) balancing time shortages, (2) extending entrepreneurial networks, and (3) providing an entrepreneurial community and culture.

##### **4.4.2.1 Balancing time shortages**

Empirical data reveals how challenging the early business phase is. The entrepreneurs are all in the early stages of their business venturing and share the experience of time constraints.

The majority emphasize that they are on their own or have only a small team they can rely on, and are thus subject to a busy daily schedule, as Entrepreneur 5 describes: “There are only two of us trying to push this business idea and [his colleague] also has another job. My day is therefore filled with many tasks and appointments.” Entrepreneur 3 points to severe time constraints as she has to take care of her

family: “It is sometimes very challenging to juggle the kids, family and all the different tasks that come up every day. So, it’s not unusual for me to work at home in the evening as well.”

The entrepreneurs commonly agreed that they usually do not have enough time to participate in any entrepreneurship-related events in distant cities. Considering that VBIs provide their services virtually, travel time to incubator facilities is no longer required. However, as Entrepreneur 2 points out, participation in such virtual events is still not entirely possible due to scheduling problems: “We always had that in the evening, when you have actually already worked all day and your head is actually already empty. Actually, I think it’s exciting to have something like that in the morning, but of course, it’s super difficult to coordinate, because there are a lot of people who are working or doing whatever, going to university or something.” As Expert 2 describes: “[...] the fluctuation is greater and the expectation is also greater, because if [incubatees] say, ‘no, that doesn’t fit [my schedule], what kind of rubbish is that, not worth my time,’ then they just leave again.” In this regard, Entrepreneur 1 appreciates asynchronous elements during her participation in a VBI, as she explains: “[...] that means you could download [the recording] afterwards, if you don’t have time or couldn’t watch the call.” Expert 2 further stresses: “I think anything [virtually synchronous] over one to two hours should not be done [...] because there is also no longer virtual attention span [...] then it becomes critical.” The majority of the founders showed great interest in virtual events and saw the great advantage of being able to participate in them regardless of location. It also came through that they appreciate being able to try out new formats of events. Nevertheless, they are sometimes confronted with incompatible schedules due to other duties. Therefore, they praised the advantages of content being accessible independent of time.

Ongoing and steadily increasing digitalization has changed the context of entrepreneurship, which has become less bound and less predefined. In that regard, entrepreneurial processes and outcomes tend to be less timely and geographically restrained, while at the same time being more collective (Nambisan, 2017). The VBI literature reflects this development, documenting how VBIs offer location-independent support services to geographically dispersed entrepreneurs (Tsai et al., 2009). Scholars emphasize that entrepreneurs can utilize these services in a flexible and cost-efficient manner better suited to today’s entrepreneurial activities (Byarugaba, 2016). However, the VBI literature does not go much further than the geographical dimension and associated time savings when addressing increased flexibility. The empirical data shows that the interviewees have limited time capacity to engage in additional events due to the fact that they mostly act alone and have more pressing duties. They commonly see the value of taking part in VBI events remotely, but argue that it does not completely lift their time constraints. Rather, their observations indicate that the possibility of making use of time-independent content is promising in terms of improving the entrepreneurial circumstances in rural areas. Therefore, VBIs should provide suitable elements in asynchronous formats to provide access that is not only detached from the geographic location but also from time constraints. By doing so, VBIs can offer components of e-learning programs that are considered beneficial to entrepreneurial learning (Radović-Marković et al., 2017).

#### 4.4.2.2 Extending entrepreneurial networks

Scholars examining entrepreneurship in rural areas commonly identify a lack of the resources necessary to enable productive entrepreneurship. During the analysis of the collected data, a similar pattern became evident, leading to the emergence of the second category. The interviewees in this sample express a lack of resources in their surroundings. Interestingly, resources were not addressed on an individual basis but related to the absence of entrepreneurial networks.

As Entrepreneur 5 describes: “What happens during the founding process is that you are faced with problems that you have to solve somehow and you look for people around you who have that kind of knowledge in this field, but these are rare here.” He stresses that you “have to have people who already have the experience to just be in exchange, to avoid making every possible mistake that there is. And that saves time, money and a lot of nerves, of course.” Entrepreneur 5 describes how he had “put a lot of time and effort into the business plan and all that and then it was just rejected [...] it would have been nice to have somebody experienced in submitting funding proposals.” This highlights that the interviewees have experienced difficulties due to knowledge and relational constraints within their local communities. They especially acknowledge that other entrepreneurs could have eased the process of launching their businesses but were not present or available in their community.

Having faced similar challenges, Entrepreneur 4 explains how moving back to the city is not an option: “[This is] my hometown. I grew up here [...] and of course, I also have a network because I lived here until I graduated [...] so the networks are actually my friends, [...] that’s how it is in the country [...] You know each other, you appreciate each other. And in the city ... it’s exactly the opposite.” In contrast, Entrepreneur 5 explains why he left the rural area after launching his business: “I moved here because I wanted a bit to live in a larger city, no longer in such a small village. Why we located our business here in the region is simply because here we can talk with the craftsmen more easily and are simply on the spot and we just wanted to test it out here.” Here, we observed that these entrepreneurs give a different value to their personal and business networks. Nevertheless, VBIs support entrepreneurs in building a business network by connecting them with coaches, mentors, investors and, more importantly in these cases, fellow entrepreneurs (Carayannis & Zedtwitz, 2005). This is illustrated by Entrepreneur 1, who takes part in a virtual business incubation program: “Can you actually see and implement the business model in a different way? I have to say that I now understand companies much better. I now understand, [fellow entrepreneurs] have this business model and have launched this business this certain way and [...] so it’s really helpful.” Aligning with Entrepreneur 4 and 5, she highlights that being part of this incubation model is very beneficial in terms of peer learning within the incubation program, emphasizing that “[...] you can do that online, too. I don’t see any limits there.” Expert 1 described this process from the VBI’s perspective: “When we talk to the founders, I try to recommend people from my network – experts or other entrepreneurs – and say, ‘talk to him, talk to

him.’ If I had met them live on-site, then I could have just taken them by the hand and just gone over there. Now I email or call the person beforehand and tell him or her what it is all about [...] so it still works nearly the same way.” VBIs connect their incubatees with people and organizations that can support their venturing processes. The virtual setting was not perceived as a constraint for this purpose.

Given the absence of entrepreneurial networks witnessed by the interviewees, it was observed that VBIs can compensate for these deficiencies. Considering the motive of Entrepreneur 5 to leave the countryside given the inability to access crucial resources (i.e., craftsmen) that his business model depends on, it is questionable whether VBIs would have been able to prevent him from relocating his business due to its large geographic scope. Expert 2 describes applying a narrower geographic scope and focusing on connecting people mostly at the state level: “[...] together with a [state-wide] partner [...] – and that’s our big benefit here – we offer a very strong network of regional business representatives and also the universities.” Expert 1 adds: “We have a number of founders who said that, thanks to the support they have received from us and the fact that we have helped them to build up their network, they have said that they will stay here. [...] they say, ‘oh yes, we have built up our network here and we have made a name for ourselves here and now we can also earn money here. If we now pack our bags and go to Hamburg, no one will know us.’ And for some, that’s really the reason to stay here, and then to launch their business here, in the more rural area.” Considering the statements of Expert 1 and Expert 2, it can be concluded that VBIs are able not only to bridge entrepreneurial resources at the individual level by connecting distant actors to facilitate virtual resource mobilization, but also to foster the development of entrepreneurial networks at the regional level by connecting local actors with each other to facilitate regional resource mobilization.

Economic action is embedded in social structures (Granovetter, 1985). Networks thus play a crucial role in the emergence and persistence of entrepreneurial behavior (Lafuente et al., 2007). The presence of dynamic entrepreneurial networks enables information flows and provides access to knowledge, capital and labor (Malecki, 2018). In the rural context, however, the number of actors and consequently the size of one’s potential network are a lot smaller. As a result, entrepreneurs in rural areas accumulate and make use of much less social capital than urban entrepreneurs (Bauernschuster et al., 2010). This is supported by the empirical data of this study – the entrepreneurs all expressed difficulties in launching their businesses due to the rural social structures. Notably, they did not relate this to financial capital or human capital, but rather their access to regional businesses and other entrepreneurs for knowledge-sharing purposes. The VBIs in the present study thus represent a promising intermediary organization. Not only do they match entrepreneurs with coaches, mentors, and other resource providers to support their business ventures, but interviewees also emphasized the value of connecting incubatees with one another to mutually learn from experience. The VBI literature has demonstrated how these organizations provide entrepreneurs with access to business and knowledge networks. In the present study, the VBIs also develop their own virtual entrepreneurial networks that help incubatees to succeed with their ventures. These entrepreneurs tend to stay in the region because they are able to become more regionally



embedded. In this sense, it seems that geographical scope does matter in the virtual setting, a finding that has not been discussed in VBI scholarship.

#### **4.4.2.3 Providing an entrepreneurial community and culture**

Closely related to the entrepreneurial networks described in the previous section, the empirical data reveals that the interviewees were not just challenged by the low levels of resource endowment in the rural setting but also by the lack of a supportive entrepreneurial community and culture.

The entrepreneurs lament that the local community has no entrepreneurial mindset. Entrepreneur 5, for example, describes the community's lack of "ability to look beyond the end of their nose, out of the village, out of the country [...] My friends and family are generally so focused on such things [...] such a limited way of thinking. That's even more common in the countryside." Accordingly, Entrepreneur 4 states that "It's very unusual to do something new here," adding that "Everywhere it's already being destroyed at the core. So, that is somehow the mindset. I think it's due to the ... yes, I think it's just a country thing. It's always been that way and it always will be that way and change is always something that is critically eyed, unfortunately." Starting a business in the countryside is perceived as strange by the local culture, with entrepreneurial behavior being viewed critically not only during the founding process, but even earlier at the idea phase. Reflecting on her experience working in an urban business incubator program, Entrepreneur 3 explains: "Of course [people in the countryside] are clearly more risk-averse than in the city," indicating rural skepticism about founding a business and the risks it entails. The interviewees engaged in entrepreneurial activities *despite* the absence of an entrepreneurial mindset and the associated support and encouragement. This can be especially challenging in terms of initiating the founding process, as Entrepreneur 5 explains: "[...] basically you have to google it all, find necessary information and then just look if it is also applicable to your situation. [When it works out,] it gives an insane motivational boost that you do not get in this wasteland." Entrepreneur 4 adds: "it's good that the internet exists; it gives you cool examples of other founders that made it through very similar difficulties, but it definitely takes a lot of [one's own] initiative and action." Entrepreneur 4 describes that it would have been easier if "it was simply a 'hey, someone wants to start a business, let's support him' mindset in the community – that would certainly be an incredibly important factor for me, if I could utilize their knowledge and experience. Above all I would not have felt so foreign and alone sometimes and doubted so much myself and my project." Both founders stressed that they had to rely on the internet not only to access crucial information but, more importantly, for emotional support. In line with the problems perceived due to the lack of a local entrepreneurial spirit, Entrepreneur 2 shares that the program of the VBI is important to them since it made them realize that they "[...] are not so exotic, there are people who think like us. It is really, really great that [the VBI] bundles these people, that you don't think that you're alone and that you're fighting alone. That really pushed us." In this sense, the VBI's program is not just important in terms of transferring resources but also as a source of motivation (Zedtwitz &

Grimaldi, 2006). Additionally, they describe that they grew closer together with participants from other enterprises and take care of them, as Entrepreneur 1 stated: “Because he says he can’t cope with [all the tasks] otherwise. He just does everything, but forgets about himself. That’s why we said ... I ask him every two weeks, ‘how is your well-being?’” This illustrates that the VBI’s program can also nurture the development of a caring community. Not only do the interactions between incubatees contribute to this supporting community, but also the VBI’s team plays an important role. As Expert 2 describes her position: “it’s not just a consulting job; somehow it’s really rather an accompanying job [...] like a kind of [incubator-]mom. You’re there, you’re just always there, you listen, you have your ears open, and you always have to be on the lookout for the incubatees.” It is clear that interactions in a VBI’s program are based not only on professional but also interpersonal relationships.

In entrepreneurship studies, culture has been identified as an important determinant for entrepreneurial activities (Saxenian, 1994). It represents the extent to which entrepreneurial behavior is valued at the regional or community level (Fritsch & Wyrwich, 2014), and reflects the local norms and beliefs that make entrepreneurial action acceptable or even desirable (Kibler et al., 2015). This is closely connected to the cognitive dimension of social networks (Inkpen & Tsang, 2005; Kibler et al., 2014). In rural settings, resource sharing is mostly based on shared values (Rooks et al., 2016); therefore, regional culture exerts even greater influence than in other contexts. This also relates to the emotional support that entrepreneurs receive from their local community. Such support is crucial because emotional state impacts an entrepreneur’s ability to engage in nascent entrepreneurial activities, as well as the ability to absorb information effectively and efficiently (Baron et al., 2012; Domurath & Patzelt, 2016; Patzelt & Shepherd, 2011). The entrepreneurs in the present study perceive their region and community as closed-minded concerning creating something new, constantly questioning perceptions of their entrepreneurial actions by the local community. As a result, they have faced difficulties in keeping up their motivation and have even felt isolated as a result. By connecting entrepreneurs virtually, VBIs can create a space for these like-minded individuals to meet and relieve them of the feeling of being on the outside. In this sense, VBIs can provide a substitute community that is based on the same shared values and, by doing so, render emotional support to entrepreneurs in rural regions. This could not only positively affect established entrepreneurial ventures, but could also improve the likelihood of others engaging in entrepreneurial activities in regions without a supportive culture.

## **4.5 Discussion**

The aim of this study is to clarify how VBIs can support entrepreneurial activities in rural regions. The answer to this research question is manifold, but begins with the pivotal role of context (Welter et al., 2019; Zahra et al., 2014). Given the distinctive nature of starting a business in rural settings (Freire-Gibb & Nielsen, 2014; Kalantaridis & Bika, 2006; Korsgaard et al., 2021; Müller, 2016; Pallares-Barbera et al., 2004), tailoring VBI program content to the context of rural venturing may bring VBIs

into a favorable position compared to similar virtual or physical institutions. Certain challenges rural entrepreneurs are confronted with could be a focal point of program deployment. Avoiding wasting the precious time of rural entrepreneurs appears to be a feature these entrepreneurs particularly appreciate. VBIs are in an outstanding position to shorten certain processes, to offer them flexibly, or even to make them obsolete. The associated savings of such scarce resources may contribute considerably to supporting entrepreneurial activities in rural regions.

A second strong support function of VBIs relates to the core resources of venturing. While past scholarship provides extensive catalogs of valuable resources for venture development (Freiling & Baron, 2017), the present study emphasizes the crucial role of social capital and helps specify what kinds of social capital rural entrepreneurs appreciate. Rural entrepreneurs express a strong relationship and commitment to their home region, as familiarity with the situation where they have lived leads to a certain socialization that makes them feel comfortable. Rural entrepreneurs are thus dependent to a large extent on their strong and long-lasting relationships. Nevertheless, they need help from outside their rural home, which is often physically hard to achieve. By virtue of their location independence, VBIs are uniquely positioned to overcome this obstacle. Networks can be made broader and richer by bridging physical distances to resources outside the rural area.

This second supportive function is in many ways interconnected with a third function relating to entrepreneurial spirit and culture. While it may be impossible to characterize the countryside in a uniform manner, there are certain aspects that make a difference between urban and rural areas (Rooks et al., 2016). Rural areas tend to be much more conservative in terms of behavior and thinking. This is reinforced by the simple fact that new developments, particularly of the disruptive kind, reach urban areas earlier and with greater magnitude. In rural regions, however, belief in the value of the established context is quite strong, and while this does not prevent entrepreneurial activities, it does make them harder to set in motion. The absence of entrepreneurial support infrastructure reinforces this situation and the related rigidities. VBIs connect different communities and facilitate a certain entrepreneurial communion among the incubatees. This study also reveals that other entrepreneurs and their behavior have a strong influence on rural entrepreneurs in softening the rigidities that inhibit their development.

## **4.6 Conclusion**

VBIs provide entrepreneurs support for their business development. Their particular benefits lie in their lack of location-dependency and their large pool of resources consisting of experts, mentors and entrepreneurs. These characteristics meet rural entrepreneurs' challenges of remoteness and lack of access to entrepreneurial resources. However, rural entrepreneurs can be faced with specific conditions that have to be considered in tailoring a VBI program to the needs of rural entrepreneurs. In this section, these conditions will be discussed in the context of this research's implications, together with its limitations, and prospects for future research.

#### **4.6.1 Limitations**

Efforts, such as the measures taken for qualitative rigor, have been made to present this research as objectively and precisely as possible. However, as a qualitative study, it is still exposed to some limitations.

Although triangulation methods have been applied, there is still the possibility that the researchers influenced the results through their subjective perceptions, interpretations, and biases. This might have happened partially due to the fact that the rural entrepreneurial environment in its empirical context was relatively new to the researchers. Past scholarship has suggested spending an extended period of time (approximately four months to one year) in the research field while collecting data in order to gain the participants' trust, make oneself familiar with the situation, and thus achieve more trustworthy results (Barrett et al., 2002). Due to Covid-19, the different geographical contexts of the interviewees, and restricted time capacities, we did not spend the suggested time in the interviewees' environment. This exposes this research to the risk that interviewees might have said what they thought the researchers wanted to hear due to the lack of familiarity (Brink, 1993).

Additionally, the data rests more or less on snapshots taken from the informants. To fulfill the aims of the research with greater depth and breadth, a more evolutionary lens would be useful.

#### **4.6.2 Implications**

The present study shows that there is a particular need for the development of VBIs for rural entrepreneurs to overcome the challenges which hinder entrepreneurial development in rural areas. However, these VBIs should be tailored to rural founders' specific entrepreneurial needs in order to exploit their full potential.

Given that rural founders are often early-stage entrepreneurs with existing full-time jobs, the rural VBI should pay attention to offering enough digitally asynchronous content and make synchronous content available to its incubatees later in their engagement. In this context, the synchronous services of the VBI should be planned in a flexible way, giving the incubatees the opportunity to arrange extracurricular appointments individually or in small groups.

Furthermore, supportive rural entrepreneurial communities are a much needed but lacking resource in the countryside. Therefore, the rural VBI should make sure not to focus only on providing international networks, but to also create and offer a regional community of rural entrepreneurs for mutual emotional support.

### **4.6.3 Future Research**

This research provides novel insights by embedding VBIs in the rural entrepreneurial context. In order to extend these outcomes, future research should focus on revealing further specific needs of rural entrepreneurs and how the VBI program can be continuously adapted to make it as effective as possible.

The results further show that regional communities are essential for rural entrepreneurs. In this context, future studies should investigate whether for regional purposes it would be more effective for VBIs to develop local communities and their interaction physically on-site and thus become hybrid business incubators.

The specialization of VBIs on local circumstances proved to be relevant for the incubators' and the entrepreneurs' success. It would be interesting to see if – and, if so, how – this context applies to other geographical, cultural, and educational environments. Future research might thus consider VBI support in economically underdeveloped regions, to migrant and refugee entrepreneurs, or in university and school contexts.

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