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Can digitalization be a tool to overcome spatial injustice in sparsely populated regions? The cases of Digital Västerbotten (Sweden) and Smart Country Side (Germany)

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ABSTRACT

Many sparsely-populated regions in Europe are or perceive that they are left behind because of a reduced presence of public and private services in the area in comparison to more densely-populated urban areas. One solution that has been proposed to overcome issues of spatial injustice in these areas is the digitalization of public services. The use of new technologies can be a means to provide similar services in rural as in urban areas and to reduce costs. However, when services are becoming digitalized, in regions with ageing populations, spatial and social digital divides might increase. Could policies that deliberately involve local knowledge and stakeholders overcome such divides? This article analyses how far place-based strategies for the digitalization of services can overcome (perceptions of) spatial injustice in rural and sparsely-populated regions. It is based on findings from a Swedish and a German case study and raises the need to give more attention to social and organizational aspects in rural digitalization policies. We argue that place-based digitalization policies can make a difference if planned in a fair, transparent, and inclusive way and considering local communities' perceptions of justice.

KEYWORDS

Rural development; digitalization; place-based policy; spatial justice

1. Introduction: digital solutions to reduce rural disadvantage

Digitalization and technological change are considered important for development in regions across Europe (European Commission 2014). Many sparsely-populated and demographically declining regions in Europe are or perceive that they are left behind because of a decreased presence of public and private services in comparison to more densely-populated urban areas. One solution that has been proposed to overcome spatial injustices in these areas is the digitalization of public services to provide a similar level of services in rural as in urban areas (European Commission 2020a; European Union 2016). In a similar vein, the new EU Cohesion Policy for 2021–2027 proposes that digitalization can support demographically and economically struggling areas and reduce territorial differences within Europe. Enhanced digitalization thus plays a

prominent role for the next programming period of EU Cohesion Policy and for the EU rural development programmes to increase territorial cohesion and counter rural depopulation. However, the digitalization of public services such as e-government and e-health raises the problem that accessibility may be reduced because some parts of the population lack digital skills or the infrastructure needed to access digital services (Salemink, Strijker, and Bosworth 2017). The problem of a digital divide is highlighted in digital strategies from the European Commission which accentuates the importance of promoting internet access, digital skills, and digital inclusion (European Commission 2014, 2018, 2020a, 2020b).

While there has been an increased focus from national and European levels to promote territorial cohesion through digitalization, there is still modest empirical evidence on the impact of new technologies in achieving more spatial justice. Compared to the academic debate on smart cities, still relatively few contributions discuss the role of digitalization for socio-economic development in rural contexts (see Roberts et al. 2017a, 2017b; or Salemink, Strijker, and Bosworth 2017 for an overview). Those that have, emphasize the role of place-based or community-based approaches to ensure that rural digitalization policies do not reproduce existing socio-economic divides or intensify territorial inequalities (Salemink, Strijker, and Bosworth 2017; Park 2017; Wihlborg and Engström 2017; Wolski 2019).

In this study of two digitalization projects in the intermediate and rural regions Västerbotten in Sweden and Lippe/Höxter in Germany we contribute to this debate by analyzing place-based strategies for digitalization through a spatial justice lens. Furthermore, our study considers the perceptions of local actors in evaluating spatial (in)justice, a perspective (from 'within') that is often overlooked in research that operates with more normative understandings of spatial justice. Concretely, we ask: In how far can place-based strategies for the digitalization of services overcome (perceptions of) spatial injustice in rural and sparsely-populated regions? We argue that digitalization can be a driver for material and procedural aspects of spatial justice if it is implemented through place-based strategies and planned through an inclusive process adapted to local needs. Place-based digitalization provides autonomy and feelings of self-efficacy to local stakeholders and institutions. Our analysis thus contributes to ongoing debates on digitalization and regional policy by emphasizing the need for digital inclusion strategies. The subjective perspective helps to evaluate if place-based projects benefit local communities. By placing digitalization policies in this place-specific social and organizational context, this paper strongly suggests an expansion of the narrow focus on technological innovation in current national and European digitalization policies.

The paper is structured as follows. Firstly, we introduce the relevant key concepts and theoretical framework. In the next section, an overview of rural development policy in the two countries is given to situate the cases in their context. Both investigated cases are organized and managed on a regional scale and funded through the European Regional Development Fund (ERDF). However, the unit of analysis is different for the two projects. In the Swedish case, Digital Västerbotten, the project promotes inter-municipal cooperation of 15 local administrations around digitalization (particularly 8 inland municipalities) in a sparsely-populated region, while the German project Smart Country Side (SCS)¹ focuses on developing digitalization projects in 16 rural villages (below municipal level) through a joint project of two administrative districts. Sections

5 and 6 discuss and summarize the lessons learned from the two place-based projects in relation to local perceptions of spatial (in)justice and the impact of the two projects on achieving more spatial justice.

2. Spatial justice, peripheralization, and place-based policy

Spatial inequalities and the narrowing or widening of regional disparities between and within EU member states are key topics in the EU-wide academic and political debate on territorial cohesion and in the two countries in this study (Barca 2009; Camagni and Capello 2015; Madanipour et al. 2017, 27–38). Over the last years, there has been particular concern about a growing divide between central-urban and peripheral-rural localities (Waite and Morgan 2018; Görmar et al. 2019). This divide is mainly rooted in selective patterns of low population density, population decline and ageing as well as technological advances and economic development. Among others, it has become a major challenge across Europe to maintain services of general interest in non-metropolitan regions (Townsend et al. 2013; Meerstra-de Haan et al. 2020). The impact of such spatial disparities on the social well-being and social mobility of residents in rural areas has raised worries about issues of social justice and spatial justice.

The framework of spatial (in)justice emphasizes the important role of spatial arrangements for social well-being, as the ‘geographies in which we live can have negative as well as positive consequences on practically everything we do’ (Soja 2009, 2). For this paper, spatial (in)justice is defined as the interlinkage of distributive and procedural justice (Madanipour et al. 2017, 76). While distributive justice represents the fair provision of resources and services to a locality, procedural justice denotes the opportunity structures and institutional processes needed by a community to use and organize resources (Soja 2009). The interlinkage of the two dimensions defines the living conditions within a locality as well as in relation to other localities. In academic debate, spatial justice has been mostly discussed with respect to urban issues such as gentrification and urban segregation (Marcuse 2009; Fainstein 2001). Over the last years, however, writings started exploring the relationship between space and justice for rural regions (Görmar et al. 2019).

Considering growing regional disparities, spatial justice can be linked to a debate about the peripheralization of non-metropolitan areas over the last decades. This strand of literature argues that peripheries are made and reproduced by a multiplicity of economic and political decisions (Herrschel 2011; Görmar et al. 2019). These multifarious socio-economic or political processes include distributive aspects such as centralization policies in support of innovation and economic development in metropolitan areas and rural disconnect from innovation networks as well as procedural issues such as political or economic dependency of peripheralized places from centres and stigmatization. The making of centrality and peripherality goes hand in hand. Consequently, the local population might perceive the development of living conditions in peripheralized areas as unjust, not necessarily because access to services is more challenging in rural areas because of geographical distances. Instead, feelings of injustice arise among the rural population because of discontent with how social and economic needs are acknowledged or how political decisions about allocations are made in comparison to more central places (Israel and Frenkel 2017, 657).

In the academic discourse on spatial (in)justice and peripheralization, the subjective point of view of local communities plays a role. Space is not regarded as a fixed container, yet an evolving collection of objects and relations, in which spatial and social processes conceive and produce each other in a dialectic relationship (Massey 2005; Lefebvre 1991). This means that there can be no single or normative conception of spatial (in)justice. Rather, (in)justice is defined here as a relational and dynamic concept, which cannot be isolated from the context in which it exists. Perceptions and feelings of injustice by local stakeholders and communities form an essential part of the production of space. It is thus important to understand ‘what might be conceived as just or unjust arrangements’ (Israel and Frenkel 2017, 657) and to analyze how these local perceptions are rooted in different political, economic, or social arenas, or established in relation to other spatial arrangements. This analysis allows us to understand, how experienced or perceived processes of peripheralization can change, and potentially be reversed.

In reaction to (the fear of) unbalanced territorial patterns between metropolitan and non-metropolitan places, there has been more attention to rural development policies over the last years. Most notably, digitalizing rural areas is perceived to help bridging deficiencies in infrastructure and service provision, for instance regarding individual training opportunities, administrative services, or community participation. While there is quite a critical academic debate on smart cities, less insight is available for the contributions of digital technologies to social and economic development in the rural context (Roberts et al. 2017a; Salemink, Strijker, and Bosworth 2017; Wihlborg and Engström 2017). Research findings so far point to an overlay of traditional and digital exclusion mechanisms and thus a potential reproduction of existing socio-spatial divides (Wolski 2019; Park 2017; Salemink, Strijker, and Bosworth 2017). Consequently, researchers argue that the identification of locally anchored factors and leverage points that allow rural communities to benefit from digitalization policies and thus a place-based or community-based approach to rural digitalization would be needed to counter rather than reproduce social and spatial disparities.

Place-based policy was introduced as a more equitable alternative to space-blind redistribution policies most notably by Barca (2009). The report advocates targeted support to regions, based on their specific needs and potentials. Camagni and Capello (2015) expand this conception by defining place-based policies as being ‘designed in a transparent and inclusive way by local actors’ (26–27). By integrating both local knowledge and local stakeholders (and institutions) into decision-making processes concerning their locality, place-based policy aims to prevent social exclusion and enhance equity within and among regions. This approach fosters cooperative networks among different policy levels (vertical integration) and between localities, administrative sectors, and state and non-state actors (horizontal integration). Such multi-level governance has the potential to blur divides between centre and periphery as well as between state and society (Dabrowski, Bachtler, and Bafoil 2014). Yet, Dabrowski, Bachtler, and Bafoil (2014) point out that cooperative arrangements can create conflicts and reproduce existing inequalities if they are not tailored to their specific local context. Moreover, doubts have been raised whether place-based policies alone are able to respond to larger structural challenges (see the danger of parochialism or particularism (Madanipour et al. 2017, 72)). Our empirical findings contribute to understanding how place-based strategies can achieve more spatial justice in the context of rural digitalization.

3. A bit more equal: rural development gaining more attention in Sweden and Germany

Sweden and Germany, though having similarities, are different countries regarding their constitutional structures, regional development, and welfare state traditions. The aim of this section is therefore not to compare the two countries, yet to explore similarities related to their regional policy development and to situate the case studies in this context.

3.1 Digital Västerbotten in the context of Swedish regional policy

In Sweden, strong regional policy together with strong local democracy has prevented significant disparities in living conditions despite extreme variations in population density (Knoblock and Ikonen 2007). Yet, as in many other countries in the late 1980s and early 1990s, Sweden introduced several neoliberal policies during and after the financial crisis. The wider policy changes including deregulation and privatization continued well into the 2000s. Authors argue that this is the main reason for a large increase in inequalities in Sweden over the last decades (Hedin et al. 2012; Larsson, Letell, and Thörn 2012). Within the rural policy, this shift was a step away from compensation and equalization towards competitiveness, innovation, regional enlargement, and cost savings in (municipal) service provision.

The consequences of this national policy are now surfacing and there is a growing pressure for change in rural policy (Knoblock and Ikonen 2007). To reduce the urban-rural divide and create long-term political steering, the government presented 'Coherent policies for Swedish rural areas – for a united Sweden' in 2014 (Ministry for Enterprise and Innovation 2017a). It aims to increase work opportunities and the number of local service centres outside urban areas. With regards to rural development, the government emphasizes the local characteristics of different rural areas and the need to include more place-based knowledge in policy implementation and a closer connection to Agenda 2030. In 2019, after the state investigation 'A bit more equal', the government suggested a change in the equalization system which redistributes money between wealthy and less wealthy municipalities (Ministry of Finance 2018). The new proposal, which came into force in January 2020, is said to better mirror regional differences and to provide rural areas with more financial support, thus enhancing redistribution and equalization.

Following the European Digital Agenda in 2010, Sweden developed the Digital Agenda for a Sustainable Digitalized Sweden in 2011. All regions in Sweden were at this time encouraged to develop their own agenda, which almost all did. The current national digital policy emphasizes five main goals: digital skills, digital security, digital innovation, digital management, and digital infrastructure (Ministry of Enterprise and Innovation 2017b). The Swedish goal is set high with the aim to be the best in the world utilizing the opportunities of digitalization. Additionally, there are several policies aimed at the digitalization of the public sector and of SMEs.

The project under study, Digital Västerbotten, is a regional top-down project installed in 2016 as part of Region Västerbotten's digital agenda. Västerbotten is a large county in the north of Sweden with large differences between the coast and the inland. On regional level (NUTS 3), Västerbotten is not disadvantaged in comparison to the Swedish average

since the socioeconomically well-off coastal area benefits from population growth and economic development. The rural inland municipalities are however experiencing increasing difficulties with service provision and demographic change (Löfving, Norlén, and Heleniak 2019). Moreover, the municipal tax system in Sweden is based on income tax, so that municipalities with few work opportunities and an aging population struggle with low financial resources and need compensation from the tax equalization scheme (Sveriges Television 2019).

To reduce disparities in Västerbotten and foster regional development, Digital Västerbotten, in its three years of existence, aimed to improve access to digital services for citizens, businesses, and visitors, especially in the inland municipalities. To achieve this goal, inter-municipal cooperation and digital competence of municipal leaders were in focus. The project delivered approximately 50 new e-services developed by the coastal municipality Skellefteå, of which the participating municipalities could select the digital service that they locally needed, for example, services that facilitate applying for building permits and garbage collection to communication tools with schools and childcare (Region Västerbotten 2019). Geared towards public actors in municipal administrations, the project was implemented from the regional level with low civic engagement. On a policy level, the action was well-integrated into higher-level strategies from the regional level up to the European Digital Agenda.

3.2 Smart Country Side in the context of German regional policy

Similar to Sweden, Germany saw a remarkable shift in policies towards strengthening growth regions in the frame of a globalized and knowledge-based economy in the 1980s and 1990s (Brenner 2004). New concepts for spatial planning, adopted in 2006, likewise emphasized the role and significance of metropolitan regions for economic development and innovation (BMVBS/BBR 2008). Thus, there has been a political focus upon the role of urban-metropolitan development for the last decades (Waite and Morgan 2018), while municipalities outside of metropolitan areas benefited less from social cohesion or distribution policies (Plöger and Weck 2012). In the federal state of our case study, a constant political struggle concerns the equalization payments between federal state and municipalities. Federal state tax incomes are redistributed on a per-capita basis to the municipalities and this figure is higher for larger cities as compared to rural areas. While the federal state justifies this policy with the central functions of cities, smaller municipalities tend to perceive it as unfair (Städte- und Gemeindebund NRW 2018).

In the face of demographic change and voices from rural communities about insufficient access to public services and infrastructure, there has been a shift in political attention towards rural development over the last years. From 2018 to 2019, a 'Federal Commission for the Equivalence of Living Conditions' developed concrete policy recommendations, including targeted economic support to rural regions, infrastructure improvements, the aim to foster social cohesion. In this context, political actors put emphasis on improving the image of rural areas (BMI 2019). This symbolic and emotional dimension is also visible in the renaming of the Ministry of the Interior to include the term 'Heimat', which evokes notions of 'community', 'regional identity', and a sense of place and homeliness.

In striving for equivalent living conditions, digitalization is perceived as an important chance for reviving rural areas. Following the European Digital Agenda, Germany presented its first Digital Agenda in 2014, which is being regularly renewed (BMW_i et al. 2014). In 2015, the federal government started a funding scheme to support broadband provision in municipalities that do not profit from a market-driven build-up. In the same year, a national programme for rural development (BULE) was established, which includes many digitalization projects (BMEL 2019). So far, however, most of them are project-based and experimental. While the ambitions are set high, Germany still struggles with basic aspects of its digital transformation such as the nationwide provision of broadband (BMVI 2019).

In this context, the case study Smart Country Side was one of 10 EU-funded projects of the digital programme of the region Ostwestfalen-Lippe in the ERDF funding period 2014–2020. In contrast to the other, more industry-centred sub-projects of the programme, SCS was citizen-oriented, bottom-up, and targeted two rural districts of the region, Lippe and Höxter, and with this focus represented a quite novel approach in the German context. Similar to Västerbotten region, the districts are not overall disadvantaged, as they contain a strong basis of SME, household incomes are around German average, and unemployment rates are low (Matzke, Kamuf, and Weck 2019, 5). Yet, particularly rural communities far from urban hubs increasingly struggle with demographic change, ageing, and service provision.

To develop alternative solutions for the districts in a place-based approach, SCS involved 16 villages in the creation of their own digital components from 2016 to 2019. A village app was implemented, villagers could participate in digital training courses, and village centres were equipped with digital media corners. In addition to EU funding, project coordinators were able to acquire national and federal state support. The project can hence be regarded as part of national strategies to establish equivalent living conditions in Germany (Table 1).

In Sweden and Germany, fundamental questions about spatial justice are important in current policy debates, such as: To what extent should governments keep investing into shrinking rural areas? In this discourse, it is not possible to separate the debate around rural development from political trends and subjective perceptions of fairness and belonging. In response to rising pressure from rural and sparsely-populated communities, both countries have decided to increase support for non-metropolitan areas. Aspirations are high to effectively overcome the peripheralization of regions through digitalization. The two investigated cases are differently designed, yet complementary

Table 1. Regional data (own elaboration based on data from Eurostat; *own calculation).

NUTS3 region	Lippe	Höxter	Västerbotten County
Case	Smart Country Side		Digital Västerbotten
Case study focus	16 rural villages in 2 administrative districts		15 municipalities (particularly 8 inland municipalities)
Total population (2019)	348.933	141.855	270.154
Population density (2019) [inhabitants per km ² *]	280.0	118.1	4.6
Total area (2016) [km ²]	1.246	1.201	58.875
EU typology	Intermediate	Rural	Intermediate

examples of place-based strategies with their focus on including village-level civic actors (SCS) or public actors in municipal administrations (Digital Västerbotten). In the following sections we evaluate in how far this approach responds to perceptions of spatial (in)justice.

4. Implementing digital tools in practice: insights from empirical research

The two case studies followed the same methodology and structure, based on common guidelines for case study research. In both cases, the analysis mainly draws upon expert interviews with civil society and citizens as well as local and regional public actors (19 in the Swedish, 24 in the German case study) and focus group discussions (one in each case; for more information see Löfving, Norlén, and Heleniak 2019; and Matzke et al. 2019). Additionally, information has been gathered from strategic and policy documents, media reports, participation in internal meetings, public seminars, and informal talks. In accordance with the specific characteristics of the investigated actions introduced in the previous section, more village-level civic actors were interviewed in the Smart Country Side project compared to Digital Västerbotten. The Swedish case study additionally draws upon a local workshop with a group of municipal employees and a pensioners group.

For this paper, the authors revisited the findings from field research conducted in 2018 and 2019 and discussed empirical evidence in relation to the research question: In how far can place-based strategies for the digitalization of services overcome (perceptions of) spatial injustice in rural and sparsely-populated regions? To answer this question, the discussion first explores manifestations and perceptions of spatial (in)justice – in distributive and procedural terms – in the two case study localities. Afterwards, the two digitalization projects are analyzed to understand the factors that influence the set-up of the actions in their local context and their outcomes in relation to spatial (in)justice.

4.1. Improvement of public services through inter-municipal cooperation

4.1.1 Perceptions of spatial (in)justice in Västerbotten

The concept spatial injustice is not used by civil servants in Västerbotten, instead they use the terms interregional differences or inequalities (Regional public actors, 4 & 6–8). The fact that the region aims to reduce regional inequalities is however a sign of awareness of spatial injustices in the region (Region Västerbotten 2014).

The chief administrative officers in the inland municipalities also do not use the concept spatial justice (Local public actors, 10). However, when discussing regional differences many aspects are mentioned to exemplify inequalities between the inland and the coast, including high municipal taxes, centralization of services, relocation of state companies, lack of resources, lack of skilled work force, and limited work opportunities (Local public actors, 14–16; Local civic actors, 20 & 21). A group of pensioners from the rural inland add challenges of distance to care centres, medicines at pharmacies being out of stock, poor public transport, and telephone reception and that the distances are challenging, especially if they can't drive themselves (Local workshop). The municipal authorities in Sweden have high autonomy and are responsible for schools, social services, and elderly care. Due to low population density and large distances in the

region, it is resource-demanding for the municipalities to uphold public services and time-consuming for individual citizens to get around, which contributes to inequality (Local public actors, 14–16). However, broadband access is not perceived as a barrier, as 84% of households in the region have access to 100 Mbit/s (Löfving, Norlén, and Hele- niak 2019).

An interesting aspect not mentioned by the regional project leaders but brought forward in interviews are the many benefits of living in the rural inland, such as closeness to nature, cheaper living and the relationships and trust between people (Local workshop – pensioners). It raises the question of who defines the concept of inequality in the region. One chief administrative officer says: ‘Now you’re talking to somebody who lives outside a small municipality, and I have chosen to live here and move from Stockholm because I see the benefits’ (Local public actor, 15).

In contrast, the perception of Västerbotten being a region which is ‘left behind’ is common in policy discussions (OECD 2017). These issues are not new, and people have been actively working on various solutions to overcome distances and provide quality of life for people in Swedish rural areas for a long time. In general, people living in the inland municipalities recognize the difficulties of maintaining the same level of services in rural areas as in urban areas (Local civic actor, 20 & 21). But when public services are downsizing and the last offices relocate, there is a feeling of being treated unjustly and of it having ‘gone too far’. A digital supervisor explains: ‘It is a nice idea that all should have the same preconditions, but I think people that live here, including me, understand that it cannot be the case. I think people have accepted that. However, when the last public offices or stores move, people fight to keep them. People get especially frustrated when they don’t know how to use the only remaining solution, the digital services’ (Local public actor, 18).

Even though new rural policies have been implemented with the aim of reducing regional differences there still is a general feeling among local interviewees that the national government is not doing enough (Local public actors, 14–16; Local civic actor, 21). Municipal representatives argue that the municipalities need resources and support regarding the digital transformation and local development in general. A chief administrative officer in a municipality in Västerbotten says that: ‘The decline in population is because of a global trend that is accelerated by Swedish policies. It regards centralization, which means that people are moving. From surveys in our municipality “work opportunity” or “studies” are by far the biggest reasons for leaving the municipality. There are existing policies that encourage and reward life in cities, one example is the access to public transport’ (Local public actor, 15). In this context, the project Digital Västerbotten aims at increasing digital competence of public actors and access to digital services for citizens to support a more just development of the inland municipalities.

4.1.2 Digital Västerbotten as a tool to overcome spatial injustice?

The project Digital Västerbotten delivered approximately 50 new e-services. The e-services were placed on a common platform where all participating municipalities could collect the ones they locally needed, which fostered local ownership and autonomy. For citizens in the inland, the project meant that they now have access to more e-services, which results in better communication with public agencies and actors, reduced travel

time and a general facilitation of everyday life (although still on a small scale). For the leadership in the municipality, digital competence and knowledge increased through meetings and workshops. During the project, it became clear that leaders must be comfortable and knowledgeable about digitalization to have the courage and willingness to lead a transformation. Since limited resources are a big part of why the inland municipalities are struggling with the maintenance of public services, the sharing of resources and increased cooperation between municipalities had an impact on the distributive aspects of spatial justice as well. A regional project leader says: “The small municipalities had a self-image of not being able to change anything themselves because they had no resources. They felt that they are dependent on the big municipalities. But now they say “now we understand it, now we can own it, now we can lead it”” (Regional public actor, 6). A municipal administrative officer also describes the project ‘It has given us the possibility to progress hand in hand in Västerbotten, no municipality has been left behind [...] We definitely had not been where we are today without the project, and I think that is the same for all the municipalities.’ (Local public actor, 14). Some municipalities have after the project hired a digital supervisor and introduced issues of digitalization to the agenda.

Nevertheless, the fear of widening the digital divide when expanding digital solutions is a concern put forward by local politicians, regional authorities, municipal leaders, and civil society, especially since Västerbotten has a large population of older citizens. Even though there are digital projects and digital service centres, many actors argue that the solutions are insufficient and that there is a risk of democratic deficiency when the digital transformation advances (Local public actor, 18; Regional public actor, 8; Local civic actor, 1). Yet, interviewed actors differ in opinion on how much emphasis should be placed on the problem of a digital divide. Some argue that it is important to make the digital transition gradually and not replace all analogue services with digital services right away (Local public actor, 18; Regional public actor, 8; Local civic actor, 1). If people want to use the analogue services, they argue, they should still be able to do so. For a small administration, however, it can be both time and resources consuming to provide both digital and analogue solutions.

Another reflection is that the project and the digital transformation in general are missing a discussion with civil society. A few civic organizations were peripherally involved in the process but since the project mostly is internally organized between authorities, there is limited transparency. Moreover, there is still an issue of continued funding and continuity since most work is project-based. On the other hand, the project is integrated in the administrative infrastructure of the region and the connection to the digital agenda has created a longer and more coherent perspective of regional digital development.

In sum, through the redistribution of resources and skills in the region, the project can be said to have increased distributive justice to some extent. Even though the digital changes in some municipalities are small, the project provided the inland with the tools to start their own digital transformation. Moreover, while the project did not have any involvement of citizens or civil society, it increased self-efficacy and opportunities to act for the administrations of the inland municipalities. Thereby, it increased procedural justice as well.

4.2. Village digitalization through bottom-up action

4.2.1 Perceptions of spatial (in)justice in the administrative districts Lippe and Höxter

In the investigated localities in Germany, the perception of spatial (in)justice is strongly interlinked with concerns over demographic change and the future development of the locality in comparison to metropolitan areas. Although the term spatial justice itself is not commonly used, perceptions of inequality and unfair top-down decisions are expressed by interviewees. According to many of our interview partners, unequal provision of services of general interest led to a lower attractiveness of the districts' rural areas and aggravated the outmigration of young people to larger towns and cities (Local public actors, 2 & 4; Regional public actors, 7 & 11; Local civic actors, 21 & 23). In contrast to the Swedish case, the provision of a broadband connection of 50mbit/s is significantly lower in the districts Lippe (84% of households) and Höxter (75%) than on the national level (94%; BMVI 2019).

In procedural terms, local actors feel economically and politically disconnected from higher-level policy decisions and the way resource allocations among urban and rural areas are made. One district-level public actor (6) specifically criticized the allocation key of the federal state to its municipalities, which benefits large urban areas with specialized cultural and free-time institutions: 'This is something that is in fact a disadvantage [...], I just have to say that every person is equal and consequently everyone counts equally' (see also Section 3). Local actors feel that state and national politicians are often not aware of many local issues (Local civic actors, 24–28). Hence, they demand more attention for the specific situation of rural areas. This includes recognizing already existing efforts of the local population to develop creative solutions to their challenges (Local public actor, 6).

Civil society in the investigated localities is very active and plays an important role in providing services such as carpooling and free-time activities to the rural population. Locals value this self-efficacy and mutual support (Local civic actor, 16). Generally, there exists a very positive local discourse around aspects of rural life such as strong social communities, safety, and closeness to nature (Local civic actors, 16, 18, 34). These interviewees emphasize that they would like to maintain this lifestyle and feel no desire to move to the city. Improvements in living conditions should happen 'on site' (Local civic actor, 33). A regional public actor (11) reinforces the local demands: 'social justice, so to say, must not be dependent on the place of residence'. This argument points to the value of place-based policies that acknowledge the specific needs and demands of a locality.

There are several policies on various levels that are perceived to (re-)produce or counter spatial injustices in the districts Lippe and Höxter. For instance, interviewees view the establishment of a federal commission for the equality of living conditions as a positive start, as it symbolizes a shift in regional development policy (Local public actors, 6 & 36; Regional public actor, 35). However, this new focus on rural areas can only make a difference if existing material inequalities such as the abovementioned allocation key are abolished as well (Local public actor, 6). With regards to higher-level funding programmes, local actors value financial support for rural areas and voluntary

engagement. One village representative explains: ‘It’s a fact that we would never be able to do without EU funding’ (Local civic actor, 32).

Yet, local representatives perceive it as unfair that the provision of (formerly public) services is being transferred onto the shoulders of civic organizations without adequate support from full-time staff (Local public actor, 4; Local civic actor, 16). Moreover, the large number and complexity of the programmes often overburden and discourage civic engagement (Local civic actor, 18; Meerstra-de Haan et al. 2020). Similarly, many participatory processes are perceived as frustrating by the population, as they seldom produce tangible and sustainable results (Local civic actor, 26). Smart Country Side, in contrast, is pointed out as a positive example (Local civic actor, 28).

4.2.2 Smart Country Side as a tool to overcome spatial injustice?

The project Smart Country Side relied on a participatory approach to create digital solutions for rural challenges. The project coordinators have taken deliberate efforts to involve local inhabitants throughout all stages of the three-year project life span and provided quick and tangible outputs (Local civic actors, 18, 19, 21 & 33). Moreover, by combining digitalization with questions of civic engagement, the project intended to foster social cohesion in the localities without replacing analogue social ties. One district-level public actor (13) explains: ‘digitalization is important and it’s good that it proceeds in the district, but it does by no means replace local communications. Because that’s what villages consist of. If we will be anonymized like in the cities, eventually we lost more than we gained.’ Hence, existing local initiatives were deliberately integrated into project development.

Additionally, the project was able to help bridging the digital divide that appears if people, particularly the elderly, lack necessary digital skills. SCS established low-threshold, safe and welcoming events to educate digitally untrained citizens to new technologies and communication formats (Local civic actor, 31). Among others, digital training courses and self-organized e-learning cafés were installed to foster capacity-building among the population. Moreover, the education of ‘digital village experts’ implemented a ‘train the trainer’ approach that allows for sustainable skill sharing even after the project has ended.

However, SCS was not able to respond to structural issues such as the lack of sufficient broadband supply in some villages. One project coordinator remembered: ‘The first question of course was: “What do they want here when we do not even have broadband?”’ (Local public actor, 2). Coordinators aimed to transfer these local demands to decision-makers by inviting the districts’ person in charge of broadband construction to village meetings. Consequently, although the project could not solve structural issues, it offered new opportunities for place-based knowledge transfers from the most local to higher policy levels.

All in all, Smart Country Side provided a chance for the villages to enhance procedural (in terms of better integrated social networks and knowledge transfer) and distributive justice (in terms of improved access to transport, health and educational services). Being implemented as an experimental project, it has been successful in its small scale and short life span. The challenge is to mainstream the approach to establish long-term solutions for the whole region. Thereby, it must be considered that the participatory approach of SCS depended on active civil societies in the localities. Yet, to achieve more

procedural justice and overcome the political disconnection between central and peripheral areas, local solutions should be accompanied by higher-level institutional changes. In this context, local actors from Lippe and Höxter demand more autonomy with simultaneous provision of adequate personnel and financial support from higher policy levels, based on the argument that they know their needs and challenges best (Local public actor, 6). The example of Smart Country Side thus shows that digitalization alone does not solve rural challenges. Instead, it must be accompanied by fair and integrated processes in the frame of multi-level governance and, certainly, broadband supply.

5. Lessons learned from the investigated case studies

In the eight inland municipalities of Västerbotten and in the villages in the districts Lippe and Höxter, spatial injustice is interlinked with local perceptions of having been marginalized over time. The feelings of local actors reflect processes of peripheralization, meaning that peripheral areas are made from socio-economic or political processes in addition to geographical features (Görmar et al. 2019). The focus on strengthening growth regions through knowledge-based economy, competitiveness, innovation, and centralization together with the introduction of neoliberal policies of deregulation and privatization have favoured metropolitan areas in both countries (see Section 3). In the case study areas, though both are not particularly disadvantaged on NUTS 3 level, there have been processes of selective depopulation and the loss of economic centres, public institutions, transport routes, companies, and job opportunities, which raise worries among the local population about a sustainable future of their regions.

In parallel with this distributive dimension of spatial (in)justice, we find a lack of procedural justice. In both localities, people emphasize that they have chosen to live in rural areas, as they see many benefits such as closeness to nature, safety, community, and social trust. They understand that services and opportunities cannot be the same in rural as in urban areas. Nevertheless, there is a general feeling that the neglect 'has gone too far'. This does not only concern public services or economic resources, but also the procedural aspects of feeling economically and politically disconnected and excluded from higher-level policy decisions (Israel and Frenkel 2017). In both cases, municipal actors and representatives express the need to obtain or maintain power over what and how to implement locally. Based on these perceptions, spatial justice in this case does not imply an equalization of living conditions in rural and urban areas, yet an increase in local opportunities and place-based investments.

The discourse on peripheralization points out that the making of peripheries is a dynamic process that can be slowed or even reversed (Görmar et al. 2019, 6). Both Sweden and Germany have recently increased their attention to rural challenges and recent policy decisions have shown that digitalization is an important tool to reduce the urban-rural divide. The two projects aimed to contribute to this goal by providing new digital solutions to rural areas. Both projects emphasize the importance of adaptive governance arrangements and multi-level governance that use vertical and horizontal integration to achieve greater spatial justice for peripheralized areas (Dabrowski, Bachler, and Bafoil 2014). However, their strengths reveal flaws in other aspects. Smart Country Side established close relationships between civil society and administrative representatives (horizontal integration). Yet, it can be argued to be too independent

from mainstream regional authorities with implications of lost vertical integration into higher-level policy structures. The more administratively integrated project Digital Västerbotten, on the other hand, lacked a strong connection to civil society. All though it was deliberate to obtain necessary information and infrastructure before including citizens, inviting citizens too late into the process resulted in a lack of anchoring within the community and stronger resistance towards digital solutions in the future. At the same time, the bottom-up approach in Lippe and Höxter depended on the engagement of civic organizations. This may reproduce existing inequalities within and between rural communities, if inactive citizens or communities are not deliberately targeted (Roberts et al. 2017a).

Due to their place-based focus, both projects gave locals – local citizens and local political leaders respectively – the feeling of self-efficacy and the opportunity to address rural challenges locally. In Lippe and Höxter, locals explained that their active involvement in the creation of digital solutions produced a sense of self-determination and mutual support. Digital Västerbotten provided local leaders in the inland municipalities with the skills and resources to start and lead their own digital transformation. In both cases, increased vertical and horizontal cooperation provided more resources and made the localities more self-determined in terms of digitalization. As emphasized by Görmar et al. (2019) ‘more spatial justice would be achieved if the people affected by peripheralization processes gained greater control over the development of their region(s) and were capable of building multiscale institutional and informal networks of solidarity’ (6). The place-based approach to digitalization thus played an essential role in increasing procedural (in form of self-efficacy and knowledge transfer) and distributive justice (by creating a more equal distribution of digital skill and improving access to (digital) services) in the two localities. Place-based digitalization policies can thus make a difference if planned in a fair, transparent, and inclusive way.

Both digital projects and their implementation were tailored and fitted to the locality (Dabrowski, Bachtler, and Bafoil 2014). However, even if implemented in a place-based approach, digital policies alone cannot solve issues of spatial injustice (Madanipour et al. 2017). In both localities, there is a necessity to maintain material infrastructure such as schools, shops, and transport through structural policies. As Salemin, Strijker, and Bosworth (2017) argue, ‘digital connectivity and digital inclusion are becoming increasingly important in the digital age, but “offline” social and economic developments will continue to resonate in the field of rural development’ (369). Consequently, place-based digital solutions and digitalization in general should be regarded as complementary to physical infrastructure, economic redistribution, and analogue social ties. Especially with regards to the digital divide, digitalization needs to be rolled out in a way not to create new spatial injustices (urban-rural, intraregional, between generations). The findings thus show that place-based solutions do not allow for less involvement from public authorities. Instead, multi-level governance and knowledge transfers require higher-level authorities to become more invested into supporting and including local needs and demands. Such investment might be first step in a process which ultimately leads to changing routines, power relations and resource distributions in multi-level governance and a fairer representation of local interests, or local communities which feel peripheralized (Roberts et al. 2017a, 2017b; Meerstra-de Haan et al. 2020; Castro-Arce and Vanclay 2020). In perspective, this creates a setting that allows tackling the factors

underlying spatial arrangements which are perceived as unfair or unjust by local institutions and stakeholders.

In the current EU debate about digitalization, bottom-up approaches and place-based knowledge are accentuated, especially in the European Network for Rural Development (European Commission 2020b). Both projects are funded by the ERDF and EU funding is emphasized as highly essential in both cases. However, there is criticism of the short-term impact and funding of these programmes and local actors demand more long-term EU (or national) funding. Moreover, it is pointed out that EU policy debates on digitalization still tend to simplify and marginalize the role of place and people in the process and that the geographic and the social factor have not been fully developed in the EU debate (Wolski 2019). EU, national and regional strategies will have to stronger integrate knowledge on procedural experiences of place-based digital projects and support their mainstreaming to provide a long-term perspective to rural areas and reduce inequalities across regions. In that respect, both projects offer interesting insights.

In sum, Digital Västerbotten was more successful in bridging the centre-periphery divide between inland and coastal municipalities and well-integrated vertically (Dabrowski, Bachtler, and Bafoil 2014). Smart Country Side, on the other hand, was able to horizontally connect non-state actors with political authorities and thus reduce the perceived disconnect between state and society. There are benefits to both approaches and the aim is to find a balance within the locality. For example, for rural villages with a less active civil society, the administration-centred focus of Digital Västerbotten might be an attractive solution to start off a process of digitalization. However, to anchor digital solutions within the local community, especially when they are considered distancing, horizontal cooperation between different local stakeholders is important. These findings show that there is no dichotomy between vertical and horizontal cooperation, as a combination of both supports an inclusive and transparent process towards spatial justice.

6. Conclusions

The analysis of two place-based digitalization projects contributes to the debate on the role of digitalization for achieving greater spatial justice in rural areas. This article cannot claim to provide general answers. Yet, two important aspects related to an inclusive process and the value of a place-based approach stand out.

The two projects complement each other in showing the path towards a more integrated and inclusive approach for rural digitalization policies. While both successfully helped to overcome digital divides in different ways, aspects of both projects would need to be integrated for achieving greater impact: the mainstreaming of digital solutions into administrative routines (the strength of Digital Västerbotten) and the involvement of civic actors in the development of digital services according to local needs (the strength of the Smart Country Side project). This is not to criticize the projects for not achieving it all. Rather, it shows the complexity of digital inclusion challenges, the still fragmentary approaches, and the need for more inclusive, long-term, and integrated policies in order to improve living conditions in rural areas by digitalization. We have seen during the past year how digital solutions have become even more essential due to the lock-downs and working from home because of the Covid-19 virus. The question of inclusive approaches for digitalization policies is therefore more central than ever.

Both projects, despite their limitations based on time and scale, raised feelings of self-efficacy and self-agency in the respective localities. In that respect, we can confirm the literature on digitalization in rural areas in arguing that a place-based approach, providing resources and opportunities to the very local level, can help to overcome feelings of being peripheralized or left behind. Resource distribution and political attention to the local level need to follow these insights, along with continued structural support for demographically declining or sparsely-populated areas, so that localized, place-based initiatives can contribute to fairer spatial arrangements.

Note

1. Smart Country Side is the proper name for the German project under study in this paper and not a scribal error.

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