Rural co-working

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Rural co-working: New network spaces and new opportunities for a smart countryside

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ABSTRACT

Coworking has been a largely urban phenomenon although new initiatives are emerging in rural areas. Rural coworking is partly a response to the growing need for ICT, which is unevenly provided across rural areas, and partly to the social needs of freelancers and home-workers. By combining technological and social functions, coworking spaces can play key roles in the progress of a Smart Countryside, supporting digital, knowledge-based and creative entrepreneurs *within* rural places, thus reducing the need for extensive commuting and out-migration, particularly among younger and higher-skilled workers.

As working practices evolve in the aftermath of Covid-19, these new physical spaces are expected to facilitate new network connections. Castells' Network Society provides a valuable lens through which to investigate how coworking founders and managers promote a mix of internal and external networks that might create new, and superior, entrepreneurial opportunities. The research highlights strategies to promote collaboration as well as methods of adapting to meet new demands from rural workers in a range of rural settings. As an array of different rural coworking models evolve, we also reflect on the importance of inclusivity and identity in determining their relationship with other actors in the local economy.

1. Introduction

The digitalisation of information and communications in the Global Network Society has facilitated working beyond traditional offices, so long as individuals have the requisite network connectivity (Castells, 2004) and the skills required for digital and remote working (Helsper and van Deursen, 2017; OECD, 2019). Remote working offers the potential to create a so-called "cyber-utopia" without traffic jams or urban overcrowding (Malecki and Moriset, 2008, p150), but this vision was only unexpectedly realised as a consequence of the lockdown measures adopted during the Covid-19 global pandemic, which were anything but utopian. Despite the earlier, relatively slow development of coworking, particularly in more rural settings, many commentators suggest that elements of these new ways of working will perpetuate in varying forms in a post-Covid economy (Clark, 2020; Kitagawa et al., 2021; Marcus,

2022; Tomaz et al., 2021; Reuschke et al., 2021).

In this article, we define coworking spaces as, "flexible, shared, rentable and community-oriented workspaces occupied by professionals from diverse sectors" that are "designed to encourage collaboration, creativity, idea sharing, networking, socializing, and generating new business opportunities for small firms, start-ups and freelancers" (Füzi, 2015, p462). Coworking offers the potential to reverse or slow down the relentless expansion of commuting and other business travel (Fior-entino, 2019; Ohnmacht et al., 2020), which can have major impacts for the environment as well as the economic and social geography of both cities and rural regions. Uncertainty about the future intensity of city-centre office working in the wake of Covid-19 (Glaeser, 2021; Florida et al., 2020; Marcus, 2022; Nathan and Overman, 2020) along with increased investment in rural digital connectivity to address the long-standing "digital divide" (Salemink et al., 2017) and increasing

demand for rural living (Property Wire, 2020) make this a critical time to investigate the new entrepreneurial dynamics that might be activated and sustained by rural coworking spaces.

We apply the lens of the Network Society (Castells, 2004), which emphasises both social and technological processes, to assess the role of coworking in so called "smart rural futures" that are themselves dependent upon knowledge and innovation supported by advances in communications technology (Naldi et al., 2015). Applying this lens, our analysis focuses on two objectives: Firstly, to examine the new networks that are emerging within rural coworking spaces and the strategies of coworking operators that nurture collaborative communities; and secondly, to examine linkages that are developing between coworking spaces and their wider rural and regional economies. As rural development is influenced by both internal and external drivers of growth, requiring a similar mix of network connections (Ray, 2006; Bock, 2016), we are fundamentally concerned with the roles that rural coworking spaces can play in integrating local and extra-local economies.

Our research examines whether coworking spaces build new connections within their local communities and economies (i.e., are highly embedded) to boost the local entrepreneurial ecosystem (Mason and Brown, 2014), or whether they exist more as urban exclaves serving the needs of urban-centric businesses and remote working practices among urban employees. Just as Castells observed the potential for unequal access to networks and resources in his Network Society, a study of a London coworking venue, identified that the value of openness could "constitute new geographies of exclusion, enclosure and exploitation" (Lorne, 2019, p761). The diversity that is championed as a driver of innovation reifies the entrepreneurial personality who is comfortable is that space, but potentially alienates other kinds of diversity. This dilemma helps us to frame the two objectives of this paper around the internal and external dynamics of coworking.

In line with these objectives, we developed a qualitative approach to engage with a range of coworking operators located in, and/or serving, rural areas. After an initial review of the literature on the emergence of coworking and the theoretical foundations of the Network Society and Smart Rural Development, we present the full methodology and then report on findings from interviews and focus groups. We finish by offering conclusions and recommendations.

1.1. Rural coworking: the story pre-covid

Telework centres (Oestmann and Dymond, 2001) or telecottages (Paavonen, 1999) developed through the 1990–2000s with early versions recognising the need of homeworkers to create physical and mental separation between home and work, to access superior technology and to replicate the "buzz" of a traditional office setting (Malecki and Moriset, 2008). Many early examples struggled to transition from public funding into sustainable business models (Mokhtarian and Bagley, 2000) but, moving into the 2010s, the number of coworking spaces grew globally (Clifton et al., 2019). Although the sector has evolved more slowly in rural areas, the impact of the Covid-19 pandemic has drawn attention to more peripheral and rural working environments (Akhavan et al., 2021).

Coworking spaces take a number of forms and operate with different ownership and management structures (Fiorentino, 2019). Private enterprises can be single facilities or global companies operating a network of venues. There are also a wide range of publicly-run and community-led initiatives, filling these gaps left by private enterprise or creating alternative spaces tailored to niche user-demands. Focusing on rural regions, venues vary from informal community spaces, often retro-fitted to take up otherwise redundant space, through to dedicated spaces co-located with enterprise hubs or business incubators offering users the option to rent fixed workspace as well as hot-desks (Merrell et al., 2022).

The spread of coworking spaces into more rural areas has been enabled by rapid advances in digital technologies and increased coverage of Wi-Fi enabled broadband (Houghton et al., 2018; Nambisan et al., 2019). The range of jobs that can be carried out beyond the traditional workplace is also increasing, so long as the requisite connectivity is available (Kane and Clark, 2019). In particular, the individualisation of work, combined with low-cost software and an explosion of cloud-based and mobile app-based digital services allow co-workers to operate relatively independently (Vallas and Schor, 2020). Sole-traders can streamline a range of administration activities, customer services and accounts (Atherton, 2016; Jordan, 2021), changing the traditional professional service function for both service user and service provider and creating new spaces for innovation. Digital technologies are also accelerating the inception, scaling and evolution of new ventures and leading to some radical re-thinking of creative endeavours that span traditional industry/sectoral boundaries (Nambisan et al., 2019).

Coworking was traditionally most attractive to smaller start-up businesses, creative industries, freelancers and solo consultancies (Füzi, 2015), with only a few examples identifying their appeal to homeworkers employed by larger institutions, including the public sector (Houghton et al., 2018). The essential values of coworking include work-life balance, reduced commuting and new network opportunities, whether for collaboration and knowledge-sharing or to help homeworkers to overcome isolation (Spinuzzi 2012; Füzi, 2015) and create important markers between work and home life (Russell and Grant, 2020; Merrell et al., 2022). While pre-pandemic research has shown that homeworking can enhance the well-being of many groups of workers, especially employees, isolation of self-employed workers was found to have impacts on the perceived financial situation of the household in addition to feeling of loneliness (Reuschke, 2019). The social value of coworking spaces extends to the provision of a stronger collective voice to their members in local development policy circles with the ability to lobby for better business support and infrastructure improvements (Kolehmainen et al., 2016).

Whether just small-talk and companionship or more business focused benefits of knowledge exchange and collaboration, the social functions of coworking spaces have been linked to better time management, personal and psychological health benefits and serendipitous moments that trigger learning and innovations (Kovács and Zoltán 2017). In rural settings, this can extend to community well-being impacts too, particularly as coworking spaces have the potential to engage different community groups as well as businesses (Stojmenova Duh and Kos, 2016). Where coworking spaces develop to become embedded as part of the relational assets (Storper, 1997) of a local innovative milieu (Camagni, 1995) or entrepreneurial ecosystem (MasonandBrown, 2014), their influence can transcend the value to members by enhancing the image of a place, providing a hub of activity to sustain other nearby enterprise and providing support to a range of community initiatives (Hill, 2022). This embedding role of coworking spaces fits with narratives of the influence of social and community factors on rural entrepreneurship practices (Korsgaard et al., 2015; Bosworth and Turner, 2018).

The benefits of interacting and collaborating with people from different professions is frequently cited (Houghton et al., 2018; Šebestová et al., 2017), but research suggests that co-location alone is not sufficient to generate cross-fertilization and innovation outcomes (Füzi, 2015; Johns and Hall, 2020). Successful collaboration is dependent on internal facilitators and the wider entrepreneurial environments in which they are located (Kovács and Zoltán, 2017; Clifton et al., 2019). In particular, more facilitated models of coworking with skilled hosts/managers were found to be important to support younger entrepreneurs and start-ups, mirroring some of the more established learning from business incubators (Füzi, 2015). This highlights the need to better understand the nature of new network configurations that will form within and beyond coworking spaces and the outcomes that may follow. Predictions that rural coworking will advance through a combination of tailored policies coupled with bottom-up initiatives (Akhavan et al., 2021) lead us to examine these complex relationships through the lenses

of the Network Society and "smart" rural development.

2. Smart rural development and the Network Society

The likely impact of new connectivity and mobility technologies mean that smart rural futures need to be framed differently from smart cities (Cowie et al., 2020), and need to take account of different rural and remote working patterns and coworking spaces. From a sustainability perspective, new technologies within coworking hubs can reduce commuting and carbon footprints and shorten supply chains, offering the potential to revitalise rural economies (Zavratnik et al., 2019) and helping to address the smart vs sustainable growth conundrum (Naldi et al., 2015). To be effective, these technological developments depend on social factors too, which are central to understanding the Network Society.

The Network Society is defined as: *"The social structure that results from the interaction between social organisation, social change, and a technological paradigm constituted around digital information and communication technologies"* (Castells, 2004, *xvii*). Although most references to Castells' work focus on the global reach of digital networks and examine his "space of flows" concept (Simonsen, 2004; Zhen et al., 2020), Castells himself recognises the importance of different cultures, power and localised networks being integral to understanding and shaping the Network Society. While the Network Society connects many cultures on one level, people's local experiences can be "fragmented, customized [and] individualized" (Castells, 2004, p30).

The Network Society allows people to participate in multiple networked spaces of communication centred around mass media and the Internet, and not necessarily embedded in the local community. This spatial-social dichotomy is not unique to the online world, as shown by research into rural migration and commuting patterns (Champion et al., 2009; Bosworth and Venhorst, 2018), but the proliferation of digital communications exacerbates fragmentation. The irony of framing coworking spaces, which are themselves dependent on digital technology, as the antidote for rural society to reconnect around "place" is not lost on us, but we see their emergence as a key component of smart rural development (Naldi et al., 2015; Slee, 2019). Just as smart growth is founded on knowledge and innovation supported by advances in communications technology (Naldi et al., 2015), the Network Society also views economic growth as being dependent on global flows of information structured around socio-technological networks (Castells, 2004). Castells makes no particular reference to rural areas, suggesting that rural spaces sit rather low in the hierarchy of network nodes (Murdoch, 2000) and at the periphery of knowledge-based networks (Benneworth and Charles, 2005). However, a more positive outlook is that mechanisms to enhance access to these global flows of information could break down old spatial divisions such as the urban-rural divide (Murdoch, 2000). Coworking is one such mechanism, which brings the added advantage that it can help to address the digital divide (Salemink et al., 2017) by providing greater access to new technologies and supporting the digital skills and social networks needed to promote local entrepreneurship and innovation (Gerli and Whalley, 2022). This reinforces the importance of places as mediators of technological change (Cowie et al., 2020) as well as the environments in which meaningful cultural and social existence occurs (Fisker et al., 2021).

The global nature of the Network Society demands cultural distinctiveness as the cornerstone of communication and knowledge exchange. Castells argues that "cultural identities become the trenches of autonomy" (2004, p39) offering the potential for "complementarity and reciprocal learning" (2004, p42) between cultures. This requires local actors to have sufficient agency to balance top-down and bottom-up processes and develop a strong voice in dialogues with external organisations. In the language of the Network Society, actors need the means to communicate and understand different cultures with the necessary openness to allow the permeation of new ideas across diverse networks. To advance "smart" forms of place-based development, local actors need to draw upon the value and distinctiveness of local resources, knowledge and traditions when engaging in wider networks (Naldi et al., 2015; OECD, 2018).

Castells refers to cultures having their relevance as "nodes of a networked system of cultural dialogue" (2004, p42) and Murdoch describes "a constellation of networks that can be found in the contemporary countryside" (2006, p172). While this shows that rural areas have an important place in a global Network Society, we need to understand more about the different types of networks, their resources, their inter-connections and their reach. Where rural nodes become disconnected from dominant, resource-rich networks, their value is diminished and individuals become excluded (Hacker et al., 2009). Exclusion from networks relegates actors to the space of place alone, bypassed by the network flows that are essential facilitators of social mobility as well as entrepreneurship (Baker et al., 2017). Therefore, the spaces and processes that create and sustain networks within rural spaces are critical to explaining entrepreneurial and innovative potential. Returning to Castells, *"We must place at the centre of the analysis the networking capacity of institutions, organisations, and social actors, both locally and globally. Connectivity and access to networks become essential"* (2004, p42).

Local social and economic dynamics see rural entrepreneurs draw on a range of resources to create distinctive business opportunities that satisfy both economic and lifestyle goals (Korsgaard et al., 2015). Too much emphasis on high growth, high-tech and innovative entrepreneurship within the entrepreneurial ecosystem literature constrains our understanding of entrepreneurial enablers and dynamics in rural contexts (Muñoz and Kimmitt, 2019). Instead, capitalising on the value of multiple, heterogenous rural assets requires networks through which their distinctive values can be communicated effectively, thus strengthening the identity of network nodes themselves. As Horlings et al. observe, *"The nature of a place is not just a matter of its internal (perceived) features, but a product of its connectivity with other places. Places are nodes in networks, integrating the global and the local"* (2020. P.356).

The value of networks depends upon the utility of their nodes and the wider access that they provide (Anttiroiko, 2016; Varnelis, 2008). The sparser networks of firms in rural areas may diminish some network advantages, such as access to information, business support or training, but they still motivate innovation and entrepreneurship (Copus and Skuras 2006) and provide conduits through which firms can develop and communicate their distinctive values and capabilities (Malecki 1997). Indeed, the greater propensity for self-employment (Phillipson et al., 2019) and greater overlap of social and economic imperatives among many rural businesses (Steiner and Atterton, 2014) may see rural networks becoming more start-up oriented and mutually supportive, drawing on a collective identity outside of urban networks. Within this space, new combinations of local and extra-local knowledge and relationships can spark new entrepreneurial ideas and opportunities. In rural regions experiencing increased rates of counterurbanisation and return migration, these trends add further to the network diversity (Kalantaridis and Bika, 2011; Mitchell and Madden, 2014).

Until now, the economic potential of rural areas has been limited by slower and inferior provision of communications infrastructure compared to urban areas (Grubesic and Mack, 2017). The disadvantages that this created for rural areas are, however, narrowing through the collective impact of policy initiatives, government investment and entrepreneurial activity (Gerli et al., 2020; Sadowski, 2017). As a result, new opportunities are emerging for entrepreneurs to combine distinctive features of rurality with the benefits of digital technologies – reaching new markets, interacting more with customers and developing new products and services as well as new working practices and business models that reflect distinctive values attributed to rural places (Hill, 2022; Bosworth and Turner, 2018).

Rural coworking spaces form part of this evolution, challenging conventional institutional and organisational cultures and affording greater importance to individuals' networks in their communities of

place (Mazur and Duchlinski, 2020). Recognising that rural coworking is opening up to employees as well as freelancers, the idea that one shares information with one's coworking neighbour, in another firm or another industry, before sharing it with one's work colleague may be unsettling for managers but transformative for innovation. With Covid-19 stimulating a rapid increase in remote working, the "buzz" of urban locations may be compromised, and the value of rural environments and their community connections are accentuated.

The weakening gravitational pull of clusters, especially in the technology sector (Feldman et al., 2020), challenges conventional regional economic theories and represents a major U-turn for firms who have spent years investing in attractive, comfortable and collaborative workplace environments (Dahl and Sorensen, 2020). Echoing calls from Gruber and Soci (2010) a decade ago, such transformation calls for greater attention to be afforded to the local dynamics of peripheral regions, not just to dominant (traditionally urban-centric) network nodes. While cities will recover, their functions may change and the new-found acceptance of nomadic forms of working will see different features of local environments attracting workers with the flexibility to work remotely. Just as Castells observed, though, this will have implications for those who are less able to engage in this new labour market and whose jobs require a physical presence in fixed premises (Florida et al., 2020; Marcus, 2022).

Reframing the Network Society to consider the uniqueness of rural economies identifies that networks are not just spaces of flows but they are fundamental to shaping and narrating rural places. However, the configuration of networks within a spatially defined node and the extent to which actors are embedded in more locally or externally-oriented networks are essential to understanding the implications for rural places. For example, more innovative services have been associated with the need for stronger external networks connecting into nodes higher up the urban hierarchy (Shearmur and Doloreux, 2015) yet other creative businesses thrive as a result of their rural locations (Townsend et al., 2017). The new spaces of rural coworking hubs and the increased variety of remote-working practices prompted by the Covid-19 pandemic, provide the context for rethinking the meaning and influence of rural places becoming more vibrant and active nodes within the Network Society.

The co-location of employees and entrepreneurs across a range of sectors forms part of the entrepreneurial potential of rural coworking, supporting an emerging literature on sector fluidity that views industries sectors being less fixed or bounded (De Massis et al., 2018) and collaborating in a quadruple helix relationship (Kolehmainen et al., 2016). Rather than a sector-focused set of relationships, rural coworking provides a greater emphasis on the social and cultural environment, from where entrepreneurs derive inspiration and opportunities (Anderson et al., 2010; Honig and Samuelsson, 2021). At this hyper-local scale, coworking spaces foster individual relationships and knowledge exchange that erode boundaries between firms and sectors. This is not technology breaking down barriers in the traditional language of the Network Society but a hybrid space where re-localisation presents a new nexus of opportunities and enterprising actors (Shane and Venkataraman, 2000) combined with networks connecting to external enablers (Davidsson, 2015).

To better understand these emerging entrepreneurial spaces, both the internal and external dynamics of rural coworking spaces are investigated. Recognising that digitization is offering the tools to support collective approaches to the pursuit of entrepreneurship (Nambisan, 2017), and combining this with analysis of the network structures that surround rural coworking spaces, the methodology reflects contemporary understanding of a smart countryside.

3. Methodology

Since the research took place during the Covid-19 pandemic, all data collection was conducted online. This included a series of 17 semi-structured video interviews with coworking operators/developers, supplemented by two policy-maker focus groups, an interview with the managing director of the Flexible Workspace Association and a larger online workshop. In total, the research engaged with around 80 discrete participants between September 2020 and June 2021. Additional data was collected from analysis of website content to explore the marketing messages used to describe the advantages of coworking, their key features and the rationales behind their establishment. This captured the perspectives of operators as well as the representation of rural coworking that they seek to communicate externally – mirroring the twin objectives of understanding both internal and external dynamics of rural coworking.

The inability to access users of coworking spaces was a limitation of the research project, something which is planned to be addressed in future research. However, the framing of this paper means that the founders and managers are best placed to explain their strategies and give an informed overview of the evolving nature of rural coworking based on their experiences. They were asked to comment on the reasons that their members and customers gave for using their venues as well as explaining their marketing strategies, business models, workspace and technology provision, and the ways that they adapted to stay in contact with their members through the various periods of Covid-19 lockdown.

The video interviews were audio-recorded and participants gave their consent to transcribe the conversations. The online workshop was staged on the Collab online conferencing platform (https://collabvirtual world.com) and attracted 60 delegates, mainly coworking operators along with a small number of researchers and policy-makers. This began with a presentation of emerging findings after which participants were asked to join one of a selection of "virtual tables" where members of the research team led structured break-out discussions as one might do in a global café style event. Focus group participants were recruited through an email to members of the Rural Services Network, a membership organisation for rural Local Authorities and associated rural development stakeholders. Each focus group was conducted on Microsoft Teams with three members of the research team joined by 11 participants split across two sessions.

Thematic analysis of the interview transcripts, focus groups and workshop notes focused on key themes of coworking practices, intra-group networks, wider connections within and beyond the rural economy, the impacts of Covid-19 and the role of technology. For this paper, we focused principally on the interview data and analyse the transcripts to draw out references to "internal collaboration and networks" and "external networks and spillover effects". Quotations were collected that picked up both positive and negative features relating to each broad theme and then arranged according to secondary themes of social or economic factors, formal or informal networks and the degree to which place was important in shaping the activities or networks being analysed.

4. Findings

The sample of coworking spaces identified a wide range of organisations with different business models, premises, clientele and future aspirations. These ranged from social enterprises focusing on the needs of small local communities through to wholly for-profit ventures with growth plans across multiple settlements. We also spoke to operators of coworking retreats that were more targeted towards digital nomads at the national and even international scale as well as some in larger towns and cities who served a heavily rural region and others in much smaller and more remote locations. A summary of the 16 interviewees is provided in Table 1.

Although it is possible to identify a number of different coworking models across the operators we interviewed (Author et al., 2022), this section focuses on common elements of coworking that nurture supportive networks and community identities internally, while building extensive connections that help to develop their external profiles. Before

Table 1
Interview sample characteristics.

Interviewee (pseudonym)	Location type	Type of Organisation	Opened/ registered
Annie	Small city	Non-profit	2020
Ben	Open countryside	Private limited company	2016
Connie	Village	Private limited company	2019
David	2 Market towns	Private limited company	2017
Ernie	Market town	Private limited company and social enterprise	2012
Freddy	Village	Family business	2020
Graham	Market town	Local Authority	2009/10
Harriet	Village	Family Business	2021
Ian	Small city	Community Interest Company	2017
Julia	Island town	Part of a private limited company	2018
Kenny	Market town	Private company	2016
Louise	Village	Private company	2017
Martin	Market town	Private company	2020
Neil	Market town	Private limited company	2021
Olive	Market town	Private company	2017
Peter	2 village locations	Private company	2013
Rachel	Village	Informal group	2020

exploring these networks, it is important to contextualise the research in relation to the importance of the rural location as portrayed among coworking operators. The interviewees identified both nature-based and community-based values for co-workers, for whom connections with the environment has been shown to benefit their wider well-being too (Merrell et al., 2022). Whether moving into rural areas or already embedded in the locality, many operators were very passionate about the location as highlighted in the selected quotations below:

"We set it up in the countryside because we had identified … that people actually wanted to not just go [to the countryside] for the weekend or for a holiday but actually spend a longer amount of time, and if they could they'd like to work on their projects outside of the city. So we developed it as a way to help people escape the city" (Louise)

"You don't just get a nice desk. You get an AONB landscape out your window and wetlands habitat and opportunity to plant trees or whatever it might be. I think being out in the countryside around green space can help with productivity [and] creative thinking" (Neil)

"One of the advantages that we really have here is that we're on the coast and that in your lunch hour you can walk down to the beach and have your picnic lunch there" (Harriet)

And operators were well aware of the marketing potential that rural locations offered too:

"We definitely play on our rustic feel, like we can't offer sleek city centre kind of facilities. This is very much a country house with views of the [mountains] and I guess it's the location that sells it but the house itself is rustic … so to be honest it kind of suits my style." (Connie)

Emphasising the distinctiveness of the location as a strong base from which to communicate with the wider world is a good example of how the Network Society can empower rural places to take advantage of their distinctive characteristics. While urban coworking spaces may be relatively homogenous, focusing on hi-spec and hi-tech office space that is familiar to mobile workers wherever they happen to be, rural spaces have the scope to position themselves differently. First impressions from our research sample indicated that creating the "buzz" of urban locations requires alternative approaches to community-building as well as

efforts to raise awareness about coworking. These differences give rise to a number of questions to explore, in terms of how these distinctive identities are formed and the extent to which they are inclusive and representative of their wider communities.

4.1. Internal networking

The literature on networking among rural firms and co-workers indicates that simply being close together does not guarantee collaboration, but it provides a foundation for new connections to emerge. Therefore, in addition to functional responsibilities, a key role for coworking operators is to promote an entrepreneurial and supportive culture within their organisation. As David observed *"We always find that people think they need a desk and Wi-Fi and when people are in what keeps them in is the community."*

The consensus among interviewees was that collaboration cannot be forced upon people, only facilitated, but it was very rewarding for founders when this worked:

"One of the nicest parts of running a coworking space is seeing those connections being made and facilitating it, or it happening automatically. It's very enjoyable. I love that. I love when people interact and they find each other and it works out and it's very positive". (Ben)

The value of softer networks was illustrated by interviewees referring to "socializing" more than business networking. Examples included the value of being able to share the success of winning a new contract (online workshop conversation), sharing the frustration of IT problems (Rachel) or simply the need for companionship:

"[One member], he comes just for company really. But he needs complete silence to work so he has his own office then comes down for coffee and lunch to meet everyone. We have a couple of people that just like to come in and know that there's people to speak to if they need to, but they just find their own space. And then the rest of us come in and chat and then we work and then we chat a little bit more and then we work again." (Connie)

This culture was reinforced by another interview with a founder of a high street coworking venue who described one member being "a little bit too pushy" when it came to business networking:

"There's one member … he wants us to have lunches where we talk about what we do and maybe share some presentations, but [among the wider group] it's quite overwhelmingly an interest in socialising and not talking about your business … and that actually becomes a little bit of a thing because he's not interested in socialising, he wants to talk business and nobody else wants to." (Annie)

Later in the same interview Annie said: *"We always kind of look to who's in our building first when we look for collaborators. And I also think that very much draws people to us"*, highlighting that collaborative working for mutual gain is part of their aspiration – but there is a culturally acceptable way to facilitate it. A second example from Scotland identified similar collaborations that support members to bid for larger contracts: *"we've formed a consortium … together we are able to bid for contracts. A lot of these contracts come along and you need to have something like £5 million worth of public liability, or some kind of insurance that is vast sums. And none of these individuals will have it whereas we've got it"* (Ian). Stimulating this type of collaboration was also important for Local Authority focus group participants who are looking at how coworking might translate into rural economic growth.

Whether providing a supportive social environment or actively facilitating collaborative working, there is no prescription for what makes an entrepreneurial culture. It might be relaxed, professional, focused, sociable or collaborative, each requiring different combinations of events, branding and spaces to support their members. The selection of furniture, the layout of the venue and décor of rooms all contribute to

the identity of the coworking group, often reflecting the attitudes of the founders:

> "Everything is community for us. We use second-hand furniture as much as possible for environmental reasons [and] … so we don't spend millions of pounds on fitting out space. We'd much rather spend that money on activities that happen within the space." (David)

> "It was important for us to have a variety of workspace types … that's why we had this café type space. That's where people can be more social. They can have little meetings, little coffee meetings, either with their colleagues or for a break. The library is also more of a shared space, a little bit more casual. But then we have the really dedicated workspaces" (Louise)

> "We're professional but we're not formal" (Harriet)

This focus on "community", as something over and above the fundamental provision of ICT, is a clear example of Castells' argument that nodes within the Network Society are defined by their internal cultural identity. The functional or tangible elements of the service are largely homogenous so can be accessed anywhere, but social capital and community identity are seen by the coworking founders/managers as being unique. In the case of founders who work in the space, it is often a personal reflection of their own working culture too. Without this, the homogeneity of a single Global Network Society becomes the dominant trope of how new (digital) technologies influence working practices but the response among coworking operators appears to engender a clear desire for diversity.

Following this logic, spaces designed to facilitate different types of behaviour and interaction are paramount to the success of coworking spaces and consistently it was the kitchen area that was most discussed. This is where people are "off-duty" and relaxing as themselves, so the tone of the conversation is different and people become more open and more interested in each other since the pressure of the next task, the next phone call or next email is in another room:

> "[the kitchen] should be the heart of a coworking space because that's where everyone collaborates and talks, and that should be right in the middle of the building and it should be where everyone goes and you should base everything around that coffee pod. (Ernie)

> "In [the local region] you meet people in their kitchens so we designed the front of the office to be a kitchen. So we've got a new dishwasher, we've got the toaster, we've got everything else in there. People come in and have their breakfast … That's where you learn stuff" (Ian)

As well as internal network building, common spaces allow for non-members to see the coworking space and for new users or event attendees to interact with established members. Breakfast clubs, café's open to the public and rooms dedicated to community functions all provided opportunities for events to widen the reach of the venue. Where co-workers were able to host external guests, this also helped to build a sense of community ownership among members (David). So long as external events were not disruptive for co-workers, they become a key foundation for external network connections.

4.2. Building external networks

Coworking spaces represent new network nodes that can strengthen connections between rural and urban economies. A particular example was cited in Scotland where bringing together sole-traders or very small businesses allowed them to bid for larger projects outside of their locality (Ian). Not only did this help others realise that a geographically peripheral business location was not a barrier to working further afield, but it is also provides a practical demonstration of how internal networks can be leveraged externally. While the internal dynamics of the

coworking "node" are critical for generating the scale of activity and cultural distinctiveness to engage in complimentary and reciprocal learning within the Network Society (Castells, 2004), interviewees were equally aware of their wider responsibilities. These include business support programmes, networking events, boosting trade for other local businesses and engaging in wider outreach activities. A number of comments capture this mentality:

> "We actively try and do stuff outside of our four walls which is why we've recruited, two years ago we recruited an outreach manager. It was her job to go out and run courses for people, so it's a big part of what we do." (Ernie)

> "We have a lot of partnerships with local businesses … I don't think it's a nice thing to have a project in the community where you don't interact with the community" (Louise)

> "We don't just want our spaces being another coworking space, we're really set on a mission to make our spaces the hub of the ecosystem … we work really hard to try to get that set in people's minds that it becomes a functional hub for the stakeholders" (David)

In some cases, building external networks to support rural economic development was part of the founding principle of establishing a coworking space too:

> "The decision to start a rural hub really came from part of our purpose which is to improve the connections between rural and urban entrepreneurs, to see some of their learning spread a little bit further than just within the city, [and] to see the rural entrepreneurs benefiting from what's happening in the vibrant start-up scene, which is often city based" (Olive).

The bridging role of coworking spaces encompasses both the urban-rural scale and more local connections beyond the traditional digital or creative freelancer groups of co-workers. One opportunity at the local scale is presented by the anticipated growth of homeworking among salaried employees who are seeking to reduce their commuting frequency following the impacts of the Covid-19 pandemic. This potential new source of demand was a foundation of Neil's business model and a major topic of conversation in the research workshop sessions. From a Local Authority perspective, potential new demand stimulated enthusiasm to promote coworking as part of a regeneration strategy to raise the profile and appeal of small towns and failing High Streets. Although there were mixed opinions about the role of the public sector as risk-taking founder or arms' length facilitator, there was optimism that small town coworking could boost the footfall on the High Street and support other town centre businesses.

Despite positive ambitions and rhetoric around the wider value of coworking spaces, only one attempted to quantify their contribution:

> "It's bringing people here, has a pretty big impact so I estimate that for the local business every year we generate about €1.2 million for accommodation, for food, for transportation, for stuff that people buy here." (Kenny)

More typical, were comments such as:

> "These people come here, spend money, spend time, accommodation, other services … I think we are a very good addition to the landscape of [our] area" (Martin)

Beyond financial benefits, the research identified a variety of contributions yielding more social value. A good example is Peter, the founder of a rural coworking and co-living destination, who explained that they involve local retired people in events because *"they don't need the money … they need conversations."* Peter and his business partner have also set up an educational programme where they *"teach the skills of digital nomads to people who want to become digital nomads"* because *"we want to teach people who don't want to leave their villages to work, but to stay at home."* In a Network Society sense, the growth of digital

nomadism is an illustration that the urban-rural connectivity can be a two-way dynamic where people chose to visit rural locations for certain types of work. Thus, the rural coworking venue is not solely a mechanism to reduce out-commuting from rural places but also a location that attracts inward commuters that strengthens its role as a node linking (rural and urban) places together.

The chance to support young people was echoed by Neil who felt that they struggle to access to the same training and career development opportunities as people in the big cities and recognised coworking as part of a solution that offers *"a stepping-stone to seeing new career opportunities [and] … a real opportunity for rural areas."* The sense that coworking is a point of connection between places reflects the Network Society but it also extends to a psychological connection where rural places can be perceived as being less isolated and offering greater equality in terms of access to skills and skilled employment.

Once the purpose and identity of a rural coworking space is understood as something distinctive and place-based, the opportunity for a range of community-focused activities emerge – both promoting the space to other potential users and helping to develop a unique identity. For example, another recent start-up explained her social values in relation to future development plans:

> "There's another building that I want to refurbish … we were kind of thinking like a gallery or an exhibition space or something for artists or creatives … they could run workshops there because we've already got a link with a local artist and she's keen to set up children's activities and then also do a programme for 16-24 year-olds that aren't engaging that well with school. So that kind of thing … as well as the desks I'd like to be doing some projects that actually help people as well" (Harriet)

While Harriet and her family are firmly embedded in the local area, and approach the community function from that perspective, an incomer in a similarly remote location gave an interesting perspective on the integrative function that coworking can play.

> "90 per cent, maybe even 95 per cent of the people who use the Business Hub are incomers. I don't know whether locals just feel like they don't need it because they've got enough contacts and they know enough places where they can find space to work themselves, so it's the people who don't have those connections in the community who are coming to me. And I'm an incomer myself." (Julia)

These examples highlight the potential for coworking spaces to provide the connectivity and access to networks that are essential to the Network Society. The combined social and technological functions also highlight how this application of Network Society thinking is commensurate with "Smart" rural development.

As well as highlighting the local/extra-local connections promoted by coworking, the final quotation also opens up a new set of questions about the inclusiveness of rural coworking. In the early phases of development, and with the need to build communities of users, it appears inevitable that some cliques will emerge and not all people will feel able to participate. This is where the variety of rural coworking models can broaden3 accessibility far more than the corporate structures that have predominated in big cities. Introducing a range of social and community activities that welcome different people into coworking venues offers the potential to build new connections among increasingly mobile, but less cohesive, rural populations. The inclusiveness of individual coworking spaces is a question for future research with coworkers but the variety of local spaces as interconnected and heterogenous nodes aligns with Castells' conceptualization of cultural nodes in the Network Society.

5. Discussion: conceiving diverse impacts for rural places

The two areas of findings have highlighted that network relationships are critical to the development of rural coworking. In each case,

facilitation of soft, informal networks is a key role for coworking operators that was supported by a range of strategies from the design of the space, particularly communal spaces like kitchens, the staging of events (including some that were online during the pandemic) and the creation of a collective identity that engages co-workers. As in urban coworking spaces, collaboration and innovation occur through serendipitous meetings of like-minded people, not through formal networking meetings or hard-sell approaches. The difference in rural coworking spaces arises when communities of users develop particular identities, often based around place and nourished by the efforts of managers to create distinctive community identities. As a result, rural coworking venues become more heterogenous, shaped by combinations of social, cultural and environmental factors, and represented through the interactions of co-workers in different settings. The local environment, the characteristics of the building itself, the range of non-business activities, the personal characteristics of the owner and their ambitions to grow or diversify the membership all contribute to a particular feel for each venue. This was evident in the marketing messages of coworking websites too, where quotations frequently drew on their location to communicate opportunities to interact with nature, to socialise and to enhance well-being:

> "Pack your swimming trunks, take your to-do list and then nothing like going out to the country"

> "There is nowhere else can you surf in the morning and be in central London by lunch time. This is a pure manifestation of the perfect work/ life balance we all strive for"

> "We want the freelancers that ultimately form the creative group at NAME to feel like family"

> "With its own garden, high ceilings, lots of light, natural finishes and loads of plants, NAME is an energising, enjoyable place to work"

> "You will gain inspiration while you work, and exchange experiences, tips, ideas and contacts"

Through the examples here, aspects of creativity, inspiration and collaboration are evident, but all were presented as part of something more holistic in terms of the work/life experience that coworking can provide. To realise this, coworking operators have to provide the right working spaces, complete with both social and technological infrastructures – the twin pillars of smart rural development in microcosm. Each pillar has implications for the internal and external network structures, and the communications that evolve within and beyond coworking spaces. In other words, the social and technological context of rural coworking shapes the ways in which co-workers engage in the Network Society and influences the balance of local and external factors that shape business opportunities and identities.

The economic spillovers, although hard to quantify, appeared to stem from building a community of co-workers with a sense of connection to their locality. Through this, businesses are able to collaborate with another and recognise opportunities to work with other local firms. Business events and training, as well as more community-focused events in some venues, all expanded the social networks around coworking spaces, increasing their external visibility and often building a sense of identity within the group – the local culture that emerges provides a sense of autonomy and empowerment aligned with that of the Network Society. The importance of the collective, can also be explained in game-theory terms since if all members sought to exploit the group for business growth, the working environment would become a deterrent. In reality, the only way to foster collaboration over time is to prioritise and develop the collective well-being of the group.

Shifting the locus of networking from corporate to community spaces raises a number of questions about the agency of individuals within social networks (Taselli and Kilduff, 2021); particularly the extent to which they actively build new connections that spark the potential for innovation and new network configurations. Where home-workers and

entrepreneurs interact in rural coworking spaces, the locality affords a common frame of reference and shared identity out of which new ideas can emerge. If these ideas are place-dependent, bringing characteristics of a rural location to the fore, the cultural identities that evolve might become new "trenches of autonomy" (Castells, 2004) that can sustain rural social innovation as well as profit-motivated entrepreneurship. In essence, where agency shifts to the local level, yet the actor remains influentially connected into wider networks, this reflects the philosophy of neo-endogenous development too (Ray, 2006).

Re-engaging with Network Society theory is especially timely because of the new connections to 'place' deriving from the Covid-19 pandemic (Newman, 2020). In some interpretations, the Network Society emphasises networks to the detriment of places (Zhen et al., 2020) where, rather than being in the right place, being in the right network counts (Anttiroiko, 2016). Here, we argue that such a dichotomy between place and networks can be bridged by new remote-working and coworking practices that build and sustain new network connections *within* rural places while strengthening and extending connections beyond. Furthermore, creating these new nodes offers significant potential for rural communities to replicate the innovation, opportunity-creating and professional support networks associated with agglomeration (relatively homogenous) while simultaneously strengthening heterogeneous, place-based identities and social networks that capture distinctive qualities of their rural context.

The growing diversity of rural businesses in the UK context has been linked with professional incomers and rural returnees (Kalantaridis and Bika, 2011; Stockdale, 2015). These mobile professionals (Keeble and Nachum, 2002) and members of the rural creative class (Herslund, 2012) are better equipped to draw on valuable experience and connections beyond the constraints of the local rural context (Bosworth and Bat Finke, 2020); a feature aided by advances in communications technology across rural areas. However, not all forms of employment can benefit from digitalisation and the new ways of working that this enables, with a notable divide between knowledge intensive and manual occupations for example (Dingel and Neiman, 2020).

Throughout the Covid pandemic, the housing market has seen increased demand for rural living, indicating that remote working practices are likely to increase in popularity. Combined with the continuing spread of online working and education, this likely to result in further decentralisation of skilled work, with migration more aligned to lifestyle choices and natural amenity values associated with the rural creative class (McGranahan and Wojan, 2007) rather than proximity to workplaces. On one hand, this offers opportunities for coworking, as identified by several research participants, but it also reinforces the perception that coworking is exclusively for mobile professionals and skilled workers. In the Network Society, Castells framed this in terms of differences in education and a person's ability to work in the information economy, not as class conflict (Ampuja and Koivsito, 2014). This is reinforced by findings from research into homeworking during the Covid-19 pandemic too, where personal and household factors were key factors determining changes in worker productivity (Felstead and Reuschke, 2021; Hackney et al., 2022; Kitagawa et al., 2021). Given that there are multiple factors that influence workers' productivity and their ability to participate equally in new ways of working, there is a risk that localised professional networks lead to a two-tier rural society with increased social and economic inequalities.

Rural coworking is a possible cause and a possible solution to this problem. The research has identified that many coworking spaces provide opportunities for community activities, training and inclusion. This is essential to avoid the perils of "network immiscibility" (Bosworth and Venhorst, 2018) where, just like the chemical properties of oil and water, networks may co-exist in a place but they require catalysts to stimulate new interactions to bridge between different sub-groups. Where coworking spaces adopt an integrating role, they can facilitate the human, social and financial capital in their networks to contribute to local development. By contrast, if they become exclusive professional spaces more integrated into urban economies, they will exacerbate the marginalisation of other sections of rural society less equipped to participate in the Network Society, perhaps lacking (access to) digital, social or professional skills. As rural coworking evolves, the challenge for operators and policymakers will be to ensure that other parts of the rural economy can benefit, even if they are not active in coworking themselves.

6. Conclusions

As creative industries and knowledge-intensive business services continue to grow in rural areas (Townsend et al., 2017; Johnston and Huggins, 2016), facilitated by improved digital connectivity (European Commission, 2020; Ofcom, 2020) and the opportunity to work outside of congested, costly city locations, they are likely to shape the next phase of rural coworking development. In a post-Covid economy, there is every likelihood that rural residential preferences and digitally-enabled homeworking will fuel further demand for coworking too (McKinsey, 2021). Such a shift could challenge certain urban-centric assumptions of the Network Society based on the greater density of flows of people, knowledge and ideas that can fuel urban economic growth. Instead, rural regions can be supported in catching up with their urban counterparts if these flows of resources become increasingly accessible to rural entrepreneurs. As evidenced by those participating in our research, this can be facilitated through enhanced communications technologies, personal mobility and extensive networks.

Rural coworking spaces can play important roles in elevating their localities to become more significant network nodes, combining local and extra-local networks around a space that depends upon both social and digital infrastructures. Conceptually, this emphasis on social and technological processes confirms that coworking can be an integral component of smart rural development too (Naldi et al., 2015). The potential for innovative mixing between sectors and professions adds a further dimension to rural coworking as a driver of new economic opportunities. By fulfilling a combination of functions, they can be simultaneously remote network bridges connecting urban centres and urban firms and they can integrate rural economy actors into new networks.

If, as a consequence of Covid-19, increased remote working becomes the norm to the extent that we conceive of 'remote employers' rather than 'remote workers', it is likely that the co-worker with rural business connections will be strongly positioned. Conversely, if the growth of remote working wanes, the potential functions of rural coworking nodes become less clear. We argue that a critical mass of human and social capital operating in rural places is integral to the development of coworking spaces as hubs for enterprising businesses. Through improved connectivity, which may take the form of better physical infrastructure or digital networks, rural areas are then better able to draw on a wider array of resources, which, in turn, can be leveraged to enhance the attractiveness of rural places and generate new economic activities. If resulting forms of entrepreneurship are socially embedded and digitally enabled, they can contribute to new dynamics of smart rural development that valorise spatial diversity (Naldi et al., 2015).

Our paper has sought to re-invigorate the Network Society by applying its core ideas in the context of dominant place-based and "smart" rural development paradigms. This has revealed significant opportunities to promote new networks built around the social and technological needs of contemporary ways of working. Moreover, the strategies of rural coworking operators highlight the importance of identity, or "cultural distinctiveness" (Castells, 2004), in addition to the connectivity and openness to engage in heterogenous networks that characterise the Network Society. The research has also identified a challenge for rural policymakers and coworking operators to facilitate networks that bridge spatial, social and skills divides while supporting local cohesion and integration. We suggest that the most promising avenues to achieve this require rural coworking spaces to enhance their

place-based distinctiveness by providing services to more isolated and marginalised groups, as well as the essential facilities and network brokerage demanded by rural co-workers.

Author statement

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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References

Akhavan, M., Mariotti, I., Rossi, F., 2021. The rise of coworking spaces in peripheral and rural areas in Italy. Territorio - Sezione Open Access (97-Supplemento). https://doi.org/10.3280/tr2021-097-Supplementooa12925.

Ampuja, M., Koivisto, J., 2014. From "post-industrial" to "network society" and beyond: the political conjunctures and current crisis of information society theory. TripleC 12 (2), 447–463.

Anderson, A., Dodd, S., Jack, S., 2010. Network practices and entrepreneurial growth. Scand. J. Manag. 26, 121–133.

Anttiroiko, A.-V., 2016. Castells' network concept and its connections to social, economic and political network analyses. J. Soc. Struct. 16, 1–18.

Atherton, B., 2016. The rise and rise of the tech-savvy sole trader, Xero blog. Accessed 23rd February 2022 at: https://www.xero.com/blog/2016/01/the-rise-and-rise-of-the-tech-savvy-sole-trader/.

Baker, S., Warburton, J., Hodgkin, S., Pascal, J., 2017. The supportive network: rural disadvantaged older people and ICT. Ageing Soc. 37, 1291–1309.

Benneworth, P., Charles, D., 2005. University spin-off policies and economic development in less successful regions: learning from two decades of policy practice. Eur. Plann. Stud. 13 (4), 537–557.

Bock, B., 2016. Rural marginalisation and the role of social innovation; a turn towards nexogenous development and rural reconnection. Sociol. Rural. 56 (4), 552–573, 2016.

Bosworth, G., Bat Finke, H., 2020. Commercial counterurbanisation and the changing roles of rural businesses. Environ. Plann. 52 (3), 654–674.

Bosworth, G., Turner, R., 2018. Interrogating the meaning of a rural business through a rural capitals framework. J. Rural Stud. 60 (1), 1–10.

Bosworth, G., Venhorst, V., 2018. Economic linkages between urban and rural regions what's in it for the Rural? Reg. Stud. 52 (8), 1075–1085.

Camagni, R., 1995. The concept of *innovative milieu* and its relevance for public policies in European lagging regions. Pap. Reg. Sci. 74 (4), 317–340.

Castells, M., 2004. The Network Society: A Cross-Cultural Perspective. Edward Elgar, Cheltenham.

Champion, T., Coombes, M., Brown, D., 2009. Migration and longer-distance commuting in rural england. Reg. Stud. 43 (10), 1245–1259.

Clark, P., 2020. Here's what the Office of 2021 Should Look like, 6 December. Financial Times available at: www.ft.com.

Clifton, N., Füzi, A., Loudon, G., 2019. Coworking in the Digital Economy: Context, Motivations, and Outcomes *Futures*, 102439. https://doi.org/10.1016/j.futures.2019.102439.

Copus, A., Skuras, D., 2006. Business networks and innovation in selected lagging areas of the European union: a spatial perspective. Eur. Plann. Stud. 14 (1), pp79–93.

Cowie, P., Townsend, L., Salemink, K., 2020. Smart rural futures: will rural areas be left behind in the 4th industrial revolution? J. Rural Stud. 79, 169–176.

Dahl, M., Sorenson, O., 2020. Will Covid-19 Take the Air Out of Silicon Valley? Entrepreneur & Innovation Exchange, 2020. https://doi.org/10.32617/586-5fdfae3ca0cbf. Published online at EIX.org on December 20th.

Davidsson, P., 2015. Entrepreneurial opportunities and the entrepreneurship nexus: a re-conceptualization. J. Bus. Ventur. 30, 674–695.

De Massis, A., Kotlar, J., Wright, M., Kellermanns, E.W., 2018. Sector-based entrepreneurial capabilities and the promise of sector studies in entrepreneurship. Enterpren. Theor. Pract. 42 (1), 47–69.

Dingel, J., Neiman, B., 2020. *How many jobs can be done at home?* National Bureau of Economic Research. Accessed 14th February 2022 at: https://www.nber.org/papers/w26948.

European Commission, 2020. Digital Economy and Society Index accessed 26th February 2022 at: https://digital-strategy.ec.europa.eu/en/policies/desi.

Feldman, M., Guy, F., Iammarino, S., 2020. Regional income disparities, monopoly and finance. Camb. J. Reg. Econ. Soc. 14 (1), 25–49.

Felstead, A., Reuschke, D., 2021. A flash in the pan or a permanent change?. In: The Growth of Homeworking during the Pandemic and its Effect on Employee Productivity in the UK. Information Technology and People, pp. 1–22. https://doi.org/10.1108/ITP-11-2020-0758.

Fiorentino, S., 2019. Different typologies of 'coworking spaces' and the contemporary dynamics of local economic development in Rome. Eur. Plann. Stud. 27 (9), 1768–1790.

Fisker, J.K., Kwiatkowski, G., Hjalager, A.M., 2021. The translocal fluidity of rural grassroots festivals in the network society. Soc. Cult. Geogr. 22 (2), 250–272.

Florida, R., Rodríguez-Pose, A., Storper, M., 2020. Cities in a post-COVID world, papers in evolutionary economic geography (PEEG). Accessed 5th December 2022 at: http://econ.geo.uu.nl/peeg/peeg2041.pdf.

Füzi, A., 2015. Coworking spaces for promoting entrepreneurship in sparse regions: the case of South Wales. Regional Studies, Regional Science 2 (1), 462–469.

Gerli, P., Whalley, J., 2022. Digital entrepreneurship in a rural context: the implications of the rural-urban digital divide. In: Keyhani, M., Kollmann, T., Ashjari, A., Sorgner, A., Hull, C.E. (Eds.), Handbook of Digital Entrepreneurship. Edward Elgar, Cheltenham, UK.

Gerli, P., Matteuci, N., Whalley, J., 2020. Infrastructure provision on the margins: an assessment of Broadband Delivery UK. Int. J. Publ. Adm. 43 (6), 540–551.

Glaeser, E., 2021. Urban Resilience. National Bureau of Economic Research, p. WP29261. Accessed 23rd February 2022 at: www.nber.org/papers/w29261.

Gruber, S., Soci, A., 2010. Agglomeration, agriculture and the perspective of the periphery. Spatial Econ. Anal. 5 (1), 43–72.

Grubesic, T.H., Mack, E.A., 2017. Broadband Telecommunications and Regional Development. Routledge, London, UK.

Hacker, K., Mason, S., Morgan, E., 2009. Digital disempowerment in a network society. Int. J. Electron. Govern. Res. 5 (2), 57–71.

Hackney, A., Yung, M., Somasundram, K.G., Nowrouzi-Kia, B., Oakman, J., Yazdani, A., 2022. Working in the digital economy: a systematic review of the impact of work from home arrangements on personal and organisational performance and productivity. PLoS One 17 (10), e0274728.

Helsper, E.J., van Deursen, A.J.A.M., 2017. Do the rich get digitally richer? Quantity and quality of support for digital engagement. Inf. Commun. Soc. 20 (5), 700–714.

Herslund, L., 2012. The rural creative class: counterurbanisation and entrepreneurship in the Danish countryside. Sociol. Rural. 52 (2), 235–255.

Hill, I., 2022. Rural Arts Entrepreneurs' Placemaking – How 'entrepreneurial Placemaking' Explains Rural Creative Hub Evolution during COVID-19 Lockdowns. In: Local Economy (in press).

Honig, B., Samuelsson, M., 2021. Business planning by intrapreneurs and entrepreneurs under environmental uncertainty and institutional pressure. Technovation 2021, 102124.

Horlings, L., Roep, D., Mathijs, E., Marsden, T., 2020. Exploring the transformative capacity of place-shaping practices. Sustain. Sci. 15, 353–362.

Houghton, K., Foth, M., Hearn, G., 2018. Working from the other office: trialling coworking spaces for public servants. Aust. J. Publ. Adm. 77 (4), 757–778.

Johns, J., Hall, S., 2020. I have so little time [. . .] I got shit I need to do': critical perspectives on making and sharing in Manchester's FabLab. Environ. Plann. 52 (7), 1292–1312.

Johnshton, Huggins, 2016. Drivers of university-industry links: the case of knowledge-intensive business service firms in rural locations. Reg. Stud. 50 (8), 1330–1345.

Jordan, A., 2021. Best Payment Processors for UK Small Businesses – 11 of the Best, *Small Business*, 18 October available at: https://smallbusiness.co.uk.

Kalantaridis, C., Bika, Z., 2011. Entrepreneurial origin and the configuration of innovation in rural areas: the case of Cumbria. In: Environment and Planning A, vol. 43. North West England, 886-884.

Kane, K., Clark, 2019. Mapping the landscape of urban work: home-based businesses and the built environment. Environ. Plann. 51 (2), 323–350.

Keeble, D., Nachum, L., 2002. Why do business service firms cluster? Small consultancies, clustering and decentralization in London and southern England. Trans. Inst. Br. Geogr. 27 (1), 67–90.

Kitagawa, R., Kuroad, S., Okudaira, H., Owan, H., 2021. Working from home and productivity under the COVID-19 pandemic: using survey data of four manufacturing firms. PLoS One 16 (12), e0261761.

Kolehmainen, J., Irvine, J., Stewart, L., Karacsonyi, Z., Szabó, T., Alarinta, J., Norberg, A., 2016. Quadruple Helix, innovation and the knowledge-based development: lessons from remote, rural and less-favoured regions. Journal of the Knowledge Economy 7 (1), 23–42.

Korsgaard, S., Muller, S., Tanvig, H., 2015. Rural entrepreneurship or entrepreneurship in the rural – between place and space. Int. J. Entrepreneurial Behavior and Research 21 (1), 5–26.

Kovács, J., Zoltán, E., 2017. Rural enterprise hub supporting rural entrepreneurship and innovation – case studies from Hungary. Eur. Countrys. 9 (3), 473-385.

Lorne, C., 2019. The limits to openness: coworking, design and social innovation in the neoliberal city. Environ. Plann. 52 (4), 747–765.

Malecki, E.J., 1997. Technology and Economic Development: the Dynamics of Local, Regional and National Competitiveness. Longman, Harlow.

Malecki, E., Moriset, B., 2008. The Digital Economy; Business Organization, Production Processes and Regional Developments. Routledge, Abingdon, UK.

Marcus, S., 2022. COVID-19 and the Shift to Remote Working. Policy Contribution 09/22, June, Accessed 15 December at. https://www.bruegel.org.

Mason, C., Brown, R., 2014. Entrepreneurial ecosystems and growth oriented entrepreneurship. Final Report to OECD, Paris 30 (1), 77–102.

Mazur, P., Duchlinski, P., 2020. Credibility and creativity in network society. Creativity Studies 13 (1), 53–63. https://journals.vgtu.lt/index.php/CS/article/view/6585/9626.

McGranahan, D., Wojan, T., 2007. Recasting the creative class to examine growth processes in rural and urban counties. Reg. Stud. 41 (2), 197–216.

McKinsey, 2021. The future of work after COVID-19. Accessed 2nd February 2022 at: www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19.

Merrell, I., Fuzi, A., Russell, E., Bosworth, G., 2022. How rural coworking hubs can facilitate well-being through the satisfaction of key psychological needs. Local Econ 36 (7–8), 606–626.

Mitchell, C., Madden, M., 2014. Re-Thinking commercial counterurbanisation: evidence from rural nova scotia, Canada. J. Rural Stud. 36, 137–148.

Mokhtarian, P., Bagley, M., 2000. Modeling employees' perceptions and proportional preferences of work locations: the regular workplace and telecommuting alternatives. Transport. Res. Pol. Pract. 34, 643–675.

Muñoz, P., Kimmitt, J., 2019. Rural entrepreneurship in place: an integrated framework. Enterpren. Reg. Dev. 31 (9–10), 842–873.

Murdoch, J., 2000. Networks – a new paradigm of rural development? J. Rural Stud. 16, 407–419.

Murdoch, J., 2006. Networking rurality: emergent complexity in the countryside. In: Cloke, P., Marsden, T., Mooney, P.H. (Eds.), Handbook of Rural Studies. Sage, London, pp. 171–184.

Naldi, L., Nilsson, P., Westlund, H., Wixe, S., 2015. What is smart rural development? J. Rural Stud. (40) 190-101.

Nambisan, S., 2017. Digital entrepreneurship: toward a digital technology perspective of entrepreneurship. Enterpren. Theor. Pract. 41 (6), 1029–1055.

Nambisan, S., Wright, M., Feldman, M., 2019. The digital transformation of innovation and entrepreneurship: progress, challenges and key themes. Res. Pol. 48 (8), 103773.

Nathan, M., Overman, H., 2020. Will coronavirus cause a big city exodus? Environment and Planning B: Urban Analytics and City Science 47 (9), 1537–1542.

Newman, P., 2020. Covid, cities and climate: historical precedents and potential transitions for the new economy. Urban Science 4 (3), 32.

OECD, 2018. Rural 3.0: a framework for rural development. Accessed 23rd at: https://www.oecd.org/rural/rural-development-conference/documents/.

OECD, 2019. Skills outlook – thriving in a digital world. Accessed 23rd December at: https://www.oecd-ilibrary.org/education/oecd-skills-outlook-2019_df80bc12-en.

Oestmann, S., Dymond, A.C., 2001. Telecentres—experiences, lessons and trends. Telecentres: Case studies and key issues 1, 1–15.

Ofcom, 2020. *Connected Nations 2020 - UK report,* 17 December, available at: www.ofcom.gov.uk.

Ohnmacht, T., Z'Rotz, J., Dang, L., 2020. Relationships between Coworking Spaces and CO2 emissions in work-related commuting: first empirical insights for the case of Switzerland with regard to urban-rural differences. Environmental Research Communications 2 (12), 125004.

Paavonen, W., 1999. Telecottages and other work centre experiments. Telektronikk 95 (4), 64–68.

Phillipson, J., Tiwasing, P., Gorton, M., Maioli, S., Newbery, R., Turner, R., 2019. Shining a spotlight on small rural businesses: how does their performance compare with urban? J. Rural Stud. 68, 230–239.

Ray, C., 2006. Neo-endogenous rural development in the EU. In: Cloke, P., Marsden, T., Mooney, P. (Eds.), The Handbook of Rural Studies. SAGE Publications Ltd), London, pp. 278–291.

Reuschke, D., 2019. The subjective well-being of homeworkers across life domains. Environ. Plann. 51 (6), 1326–1349.

Reuschke, D., Clifton, N., Long, J., 2021. Remote Working - Spatial Implications in Wales. In: A Report Commissioned by the Welsh Parliament. Accessed 5th December 2022 at: https://research.senedd.wales/research-articles/new-publication-remote-working-spatial-implications-in-wales/.

Russell, E., Grant, C., 2020. Agile Working and Well-Being in the Digital Age. Palgrave MacMillan, Cham, Switzerland.

Sadowski, B.M., 2017. Advanced users and the adoption of high-speed broadband: results of a living lab in The Netherlands. Technol. Forecast. Soc. Change 1155, 1–14.

Salemink, K., Strijker, D., Bosworth, G., 2017. Rural Development in the Digital Age: a systematic literature review on unequal ICT availability, adoption, and use in rural areas. J. Rural Stud. 54, 360–371.

Šebestová, J., Šperka, R., Małecka, J., Łuczka, T., 2017. Coworking centres as a potential supportive network for cross-border business co-operation. Forum Scientiae Oeconomia 5 (4), 23–34.

Shane, S.A., Venkataraman, S., 2000. The promise of entrepreneurship as a field of research. Acad. Manag. Rev. 25 (1), 217–226.

Shearmur, R., Doloreux, D., 2015. Central places or networks? Paradigms, metaphors, and spatial configurations of innovation-related service use. Environ. Plann. 47 (7), 1521–1539.

Simonsen, K., 2004. Networks, flows, and fluids – reimagining spatial analysis? Environ. Plann. 36 (8), 1333–1337.

Slee, B., 2019. Delivering on the concept of smart villages – in search of an enabling theory. Eur. Countrys. 11 (4), 634–650.

Spinuzzi, C., 2012. Working alone together: coworking as emergent collaborative activity. J. Bus. Tech. Commun. 26 (4), 399–441.

Steiner, A., Atterton, J., 2014. The contribution of rural businesses to community resilience. Local Econ. 29 (3), 228–244.

Stockdale, A., 2015. Contemporary and 'messy' rural in-migration processes: comparing counterurban and lateral rural migration. Popul. Space Place 22 (6), 599–616.

Stojmenova Duh, E., Kos, A., 2016. Fablabs as drivers for open innovation and co-creation to foster rural development. In: International Conference on Identification, Information and Knowledge in the Internet of Things. https://doi.org/10.1109/IIKI2016.70.

Storper, M., 1997. Regional economies as relational assets. In: Lee, R., Wills, J. (Eds.), Geographies of Economics. Arnold, London, pp. 248–258.

Tasselli, S., Kilduff, M., 2021. Network agency. Acad. Manag. Ann. 15 (1) https://doi.org/10.5465/annals.2019.0037.

Tomaz, E., Moriset, B., Teller, J., 2021. Rural coworking spaces in the Covid-19 era. A window of opportunity? Accessed 16th December 2021 at: https://halshs.archives-ouvertes.fr.

Townsend, L., Wallace, C., Fairhurst, G., Anderson, A., 2017. Broadband and the creative industries in rural Scotland. J. Rural Stud. 54, 451–458.

Vallas, S., Schor, J.B., 2020. What do platforms do? Understanding the gig economy. Annu. Rev. Sociol. 46, 273–294.

Varnelis, K., 2008. Networked Publics. MIT Press, Cambridge, MA.

Wire, Property, 2020. Demand for homes in rural areas rises due to the pandemic. available at: www.propertywire.com.

Zavratnik, V., Superina, A., Stojmenova Duh, E., 2019. Living labs for rural areas: contextualization of living lab frameworks, concepts and practices. Sustainability 11 (14), 3797.

Zhen, F., Jia, T., Wang, X., 2020. How does castells's the rise of the network society contribute to research in human geography? A citation content and context analysis. Prof. Geogr. 72 (1), 96–108.