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Corporate responsibility and place leadership in rural digitalization: the case of Hidden Champions

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ABSTRACT

We examine the role of Hidden Champions in rural areas in advancing regional digitalization through corporate local and regional responsibility and place leadership. Endowed with abundant internal resources and high innovative capacity, these global niche market leaders face regional resource constraints, concerning digital infrastructure and workforce with digital capabilities. 57 semi-structured interviews with firm representatives and regional actors in rural Germany are analyzed. We show that these enterprises strategically use measures of corporate local and regional responsibility and exert place leadership to develop digitalization-related assets in their rural regions. These initiatives are operated through modes of both inclusive and exclusive agency and benefit. We find that the motives for these actions are grounded in a perceived lack of swiftness and capacity of public actors, but also entail emotional attachment to the region, particularly for family businesses. Our findings have implications for regional policymakers, such as targeting greater alignment of regional and corporate development goals.

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1. Introduction

Rural regions are lagging behind in the digital revolution, highlighting the concept of a digital divide (Malecki 2003). In terms of digitalization, this geographic setting faces unique challenges and resource constraints (Eder and Trippl 2019). These include digital infrastructure, such as broadband internet, 5G access and digital capabilities of the regional workforce. In Germany, significant regional inequalities in digital infrastructure provision exist (Maretzke, Ragnitz, and Untiedt 2019).

These circumstances also affect Hidden Champions (HCs), which are small- and medium-sized businesses that possess market leadership in specialized products but are relatively unknown to the broader public. HCs have disproportionately high export shares and are supported by a worldwide network of sales offices (Rammer and Spielkamp 2015). To preserve their link to these international networks and to engage

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in digitalization-related innovation, digitalization is a crucial dimension (Wittenstein 2020). Digitalization is becoming increasingly relevant due to its potential to transform products, exports, business models, and processes (Geissdoerfer et al. 2018). Simultaneously, the conditions for firms in rural locations to engage in digitalization are far more difficult than in agglomerations (Salemink, Strijker, and Bosworth 2017). This is of great significance because two-thirds of German HCs are located in rural areas (Schenkenhofer 2020).

Regional resource endowment is no longer viewed as an external factor in the economic geography literature (Lengauer and Tödtling 2010). As a result, the relevance of private actors in endogenous regional development has been strengthened (Sotarauta, Horlings, and Liddle 2012). As the vast majority of corporate engagement is intra-regional, the connection of regional socio-economic growth and enterprises' engagement is particularly relevant (Labigne et al. 2018). Virtually no research on digitalization-specific corporate local and regional responsibility (CLRR) exists. Further, research on engagement in rural areas in general has received little attention (Müller 2016). Due to various characteristics, such as organizational and institutional thinness, limited capacity of smaller municipalities and communities, and a problematic outlook in terms of demographic, infrastructural and economic indicators (Tödtling and Trippel 2005), this appears particularly relevant for this geographic setting (Bürcher 2017).

In subnational development, leadership has been described as a critical but often overlooked driver (Sotarauta, Beer, and Gibney 2017). Several aspects renew the relevance of place leadership, including the partial withdrawal of the state from rural areas and forces of liberalization, deregulation, and privatization of formerly governmental duties. These have resulted in non-state actors exerting place-based leadership (Albers and Suwala 2020) and in new digital technologies that necessitate contributions to regional development by actors capacitated in these realms (David and Foray 2002). It was only recently that CLRR and place leadership have been put in relation (Voegtlin, Patzer, and Scherer 2012; Albers and Suwala 2020). Scholars have emphasized the ability of communities and businesses to exercise place leadership when faced with adversity in regional conditions, particularly in rural settings (Kroehn, Maude, and Beer 2010).

Correspondingly, we respond to a call (Sotarauta, Beer, and Gibney 2017) to better understand the relationship between place leadership, entrepreneurship, recession and crisis (Bailey and Berkeley 2014). Additionally, since two-thirds of HCs are family enterprises (Rammer and Spielkamp 2015), we contribute to studies on the interaction between family firms and regional engagement (Basco 2015). We aim at closing a twofold research gap. First, there is scant research on HCs' CLRR in general. In particular, CLRR and place leadership have never been jointly studied in the context of HCs and in rural areas. Secondly, we examine digitalization as a new facet of corporate engagement and place leadership.

In this article, we focus on business-led place leadership and analyze regional economic development from an actor-centric viewpoint of HCs. We apply a qualitative study design to analyze semi-structured expert interviews by employing qualitative content analysis (Mayring 2014). In total, we conducted 57 interviews with management representatives of HCs and other regional actors in four rural German regions.

The remainder of the study is organized as follows. Chapter 2 portrays a synthesis and conceptual model of the state of the literature, and, based on this, develops the research

question. The methodology is described in Chapter 3. Our findings are presented in Chapter 4. Afterwards, the results are being discussed in Chapter 5, followed by further suggestions for regional policymakers.

2. Literature review

Several streams of literature relate to this study. In the following four sections, we summarize relevant research on CLRR, place leadership, digitalization in rural areas, and Hidden Champions as a specific firm type. Subsequently, these are being connected in section *2.5 Synthesis of research and conceptual model*.

2.1. Corporate local and regional responsibility (CLRR)

The regional engagement of economic actors regarding socio-economic regional development in rural areas has until recently rarely been examined (Müller 2016). Concurrently, the economic geography literature has moved away from conceiving regional resource endowment as an external factor, solely influenced by local or regional administration or the natural environment (Lengauer and Tödting 2010). As a consequence, scholars have recognized the importance of private actors for regional development (Sotarauta, Horlings, and Liddle 2012). Here, the territorial and social embeddedness of companies in the firm-place nexus has received increased attention (Basco 2015).

The theoretical framework for socio-economic development by firms within their region is being provided by CLRR (Kiese and Schiek 2016) and the related concept of corporate spatial responsibility (Albers and Suwala 2021). Both emphasize the perceived responsibility of companies for their region and actions resulting from it. Associated with corporate social responsibility (CSR) and corporate citizenship, but also highlighting the spatial nature of responsibility, their rationale lies in firms' acknowledgment and pursuit of moral and ethical considerations in addition to core business operations (Carroll 1979).

Rural areas face particular socio-economic challenges like organizational and institutional thinness – of regional innovation systems and beyond – and infrastructural deficiencies (Tödting and Trippel 2005). Improving the specific regional conditions of current company locations is perceived as an alternative to relocation (Albers and Suwala 2018). Subsequently, this compensating strategy has been demonstrated as resulting in more intensive involvement of companies at stimulating rural development (Arato, Speelman, and Van Huylenbroeck 2016).

Various forms of agency are important in the context of this study (Isaksen et al. 2019). Specifically, research on CLRR distinguishes between inclusive and exclusive agency (Bürcher 2017). Social capital is an important dimension, differentiated by bonding (regional networks among firms) and bridging social capital (regional networks between firms and other actors) (Westlund and Gawell 2012). Additionally, research has made the agency-related distinction between personal engagement of firm decision-makers and corporate engagement in terms of corporate strategies, and has related this to place leadership as well (Sydow et al. 2011). Further, CLRR may be channelled into inclusive or exclusive benefit – positive effects for single companies, groups of firms and other actors, or the region at large (Kleine-König and Schmidpeter 2012).

When both agency and benefit of engagement are inclusive, the likelihood of positive regional economic development is highest (Kiese and Schiek 2016).

Motives for CLRR are associated with both business and ethical considerations (Lengauer and Tödting 2010). For business considerations, motives can be managerial (e.g. employee retention), strategic (e.g. enhancing innovative potential and competitiveness) or reputational (e.g. better relations with public bodies). For ethical considerations, philanthropy (e.g. believes) is at the core. Additionally, the withdrawal of the state has been identified as another motive for firms to engage in CLRR (Suwala and Albers 2020). This results in constellations where companies perform tasks and responsibilities that were formerly assigned to or connected with the respective governance structure (Suwala and Micek 2018). Moreover, motives for corporate engagement differ based on firm-internal influencing factors. For instance, CLRR between family and non-family firms is characterized by different types of engagement (Campopiano, De Massis, and Chirico 2014). While sponsoring and volunteering are prevalent in most firms, family firms have been linked to activities of a long-term nature with motives frequently founded in high degrees of place attachment (Graffenberger and Görmar 2021) and social capital (Westlund and Gawell 2012).

Digitalization has so far not been analyzed in relation with corporate regional responsibility. Research has identified different areas of corporate spatial responsibility without considering digitalization-related initiatives, such as social and cultural infrastructure, housing, town center development, regional networking, and strategic regional development such as master plan initiatives (Bürcher and Mayer 2018). Additionally, sustainability is an emerging new area of CLRR, which can be linked to digitalization through the consideration of the *Sustainable Development Goals* with its digitalization-related components (e.g. improving ICT skills) (Sotarauta, Horlings, and Liddle 2012; Albers and Suwala 2020).

2.2. Place leadership

The spatial dimension has been rediscovered and strengthened in leadership research (Albers and Suwala 2021). Leadership and the relevance of crucial actors in regional development is not an entirely new question and has long been portrayed as an important and often missing, neglected driver in subnational development – e.g. in studies on knowledge, proximity and innovation (Sotarauta, Beer, and Gibney 2017). In this article, we employ the term *place leadership* (Albers and Suwala 2021), which serves ‘to explore the relationship between structural determinants of economic development and the agency of actors whose room for maneuver is both constrained and enabled by a specific institutional context’ (Rossiter and Smith 2017, 376).

Several factors justify the renewed actuality of this topic: First, the partial withdrawal of the state from rural areas and forces of liberalization, deregulation and privatization of formerly governmental duties have induced place-based leadership of non-state actors (Albers and Suwala 2020). In addition, the lack of capabilities and agility of governments contribute to this change (Owen 2015). Second, regional conditions have changed, especially with regard to resource constraints and in terms of demographic, infrastructural, and economic indicators – leaving a bleak outlook, particularly in rural areas (Salemink, Strijker, and Bosworth 2017). Third, new technologies, such as digitalization, require contributions to regional development by actors that are capable and capacitated

in these realms (David and Foray 2002). Fourth, the emergence of the creative city and the knowledge-based region triggered the necessity for place leadership (Collinge and Gibney 2010). In a knowledge-based economy, 'new' styles of place leadership are collaborative, interdisciplinary, network-spanning, open, and inclusive – contrary to 'traditional' leadership (ibid.). These changes induce stronger dependence on actors, industries, and institutions that are focused on knowledge production (Albers and Suwala 2020). Fifth, reduced capacities of smaller municipalities and communities, a partial absence of consolidated government bodies and limited effectiveness of public authorities are further relevant (Albers and Suwala 2021). Because of these recent developments, new cross-boundary and inter-institutional forms of place leadership, such as public-private partnerships, have emerged (Koppenjan and Klijn 2004).

2.3. Digitalization in rural areas

For enterprises, digitalization has significant potential to transform products, business models, exports and processes, both internally and with external actors (Geissdoerfer et al. 2018). Simultaneously, a large share of current challenges for rural regions in Germany are of great importance for digitalization (Haefner and Sternberg 2020). Rural areas have not yet been able to fully reap the benefits of the digital revolution, underlining the notion of a digital divide (Malecki 2003). The reasons for this situation are numerous and involve complex interactions between infrastructure, and supply- and demand-related dimensions (Saleminck, Strijker, and Bosworth 2017). In rural areas with lower population and economic density, they include technological constraints in terms of reach and higher cost structures in the supply of digital infrastructures. Moreover, it is additionally related to characteristics of the rural population, including their digital capabilities.

Digitalization in this article's context is commonly being structured into digital infrastructure and digital capabilities (Saleminck, Strijker, and Bosworth 2017). For regional development, digitalization is frequently associated with the expansion of broadband (Grubestic and Mack 2015). As a result, political actors at all levels push for developing broadband internet in rural areas (Gillett, Lehr, and Osorio 2004). However, significant regional inequalities in broadband infrastructure provision exist in Germany. Concerning 100 Mbit/s bandwidth, the spectrum ranges from 11 percent to 90 percent, with a nationwide average of 67 percent (Maretzke, Ragnitz, and Untiedt 2019). Other information and communication technologies, such as mobile internet, are also relevant in the context of this study, in addition to the economic implications of broadband availability. Recently, the transition to 5G has been identified as being important in this regard. Similar inequalities in mobile communications and mobile internet coverage exist between urban and rural locations (Townsend et al. 2013).

The literature underrepresents the specific influence of businesses, particularly SMEs and therefore HCs, on digitalization of rural areas and on consequences of digitalization for rural businesses from both supply and demand perspectives (Saleminck, Strijker, and Bosworth 2017). This is especially noteworthy given the importance of these firm types in rural areas (Colombo, Croce, and Grilli 2013). Most research concentrates on regional administrations and their development initiatives, or adopts a meso-level view of regional development.

2.4. Hidden Champions: CLRR and place leadership

HCs are highly innovative but little-known small- and medium-sized businesses with worldwide or continental market leadership in specialized products. HCs have a global orientation because of deliberate globalization (Simon 2009). They maintain a global network of sales offices (Rammer and Spielkamp 2015) and feature a 64 percent export share (compared to 39 percent for all German enterprises, according to Statistisches Landesamt Baden-Württemberg 2020). As a result, the corporate network of HCs is composed of global actors. Furthermore, HCs possess abundant internal resources and high innovative capacity, distinguishing them from other SMEs (Witt and Carr 2013). To preserve their link to their international networks and to engage in digitalization-related innovation, digitalization is a crucial dimension for HCs (Wittenstein 2020). Since HCs are mostly located outside agglomeration centers, rural regions are an essential geographical category. Two-thirds of HCs in Germany have their headquarters in rural areas (Schenkenhofer 2020) – compared to 39% of all enterprises in Germany (Stiftung Familienunternehmen 2020). HCs further differ in their ownership structures, with two-thirds being family businesses and frequently being held in cross-generational family ownership (Rammer and Spielkamp 2015). As shown above, family firms differ in their corporate responsibility from other firm types.

HC-related research on CLRR and place leadership is scarce. For Germany, there are two exceptions: BBSR (2019) examines HCs' regional engagement in small towns in terms of urban development projects. Using the same data, Graffenberger and Görmar (2021) investigate motives and measures of CLRR for three HCs in small German towns. As previously stated, regarding the influence of firm-internal characteristics, their findings confirm that family enterprises – constituting the major share of HCs – are more committed to CLRR than non-family enterprises.

2.5. Synthesis of research and conceptual model

Putting CLRR and place leadership in conversation only occurred recently (Voegtlin, Patzer, and Scherer 2012; Albers and Suwala 2020). The link between both concepts begins to arise in a special configuration when engagement of individual firms or groups becomes very intensive and pervasive, and when responsibilities originally performed by government are expected to be taken over by these firms (Basco and Suwala 2020). Thereby, place leadership – expressed as the degree of commitment and agency (Albers and Suwala 2020) – is exerted. Examples for this intersection are strategic measures of corporate engagement such as instruments for urban development or regional master plans initiated by private companies (Albers and Suwala 2018). Scholars have emphasized the reflexive agency of place leadership in regional development and hence provided an agential (or agency) perspective to analyze this realm of spatial development (Sotarauta, Beer, and Gibney 2017).

However, characteristics of corporate place leadership and CLRR can be traced back at least to early industrialization, mostly related to one-company towns (Commander 2018). The location of these settlements was predominantly based on access to natural resources for extraction and processing, such as coal in the German Ruhr area or timber in

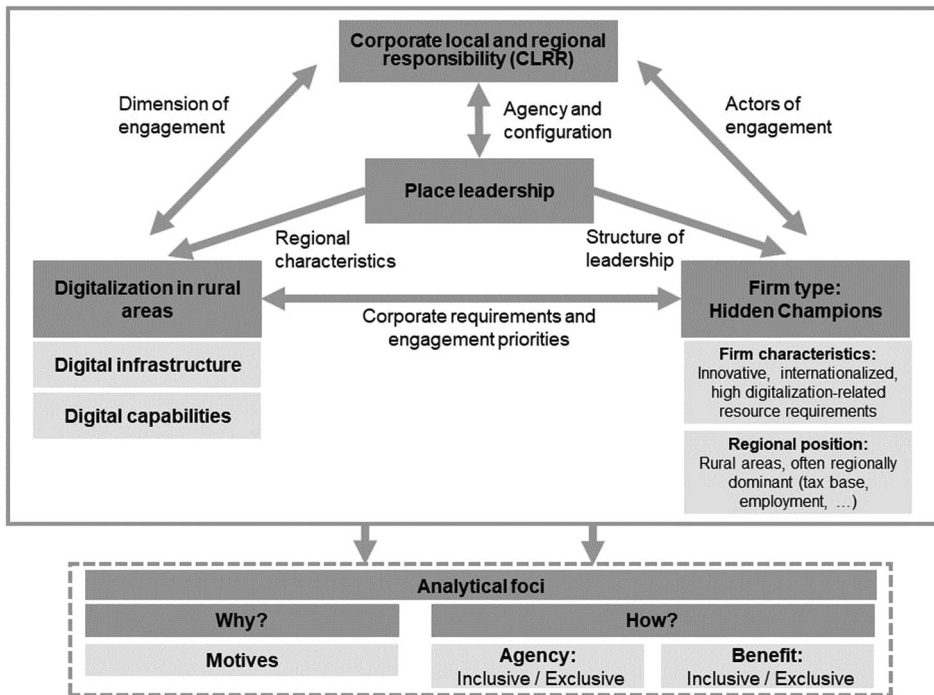


Figure 1. Conceptual model of CLRR and place leadership of HCs in rural areas. Source: Own elaboration, based on Sotarauta, Horlings, and Liddle (2012), Bürcher (2017) and Albers and Suwala (2020).

Scandinavia. Here, the dominating firms would develop urban infrastructure and provide social services, housing, and education for the workers and their families (Green 2011).

Figure 1 presents the conceptual model, which connects the research streams summarized above, and is being employed in the empirical chapter below. We draw on the concepts of CLRR and place leadership to examine the modes (inclusive/exclusive agency and benefit) and motives of digitalization-related corporate engagement of HCs in rural areas. The combination of these two concepts is helpful in investigating a spatial context disproportionately challenged in digitalization (rural areas). These areas host a type of innovative and internationalized firms (HCs), which is characterized by specific locational requirements, a frequently dominant regional position, and corresponding priorities of engagement. To better understand the actual dimension of engagement and its specifics, we link these concepts to the state of research on digitalization in rural areas. As a consequence, this dimension is structured into digital infrastructure and digital capabilities (Salemink, Strijker, and Bosworth 2017). HCs function as actors of CLRR and place leadership. To deepen our comprehension of the acting organization involved in CLRR and place leadership, this firm type with its particulars is portrayed in greater detail. Hence, both regional characteristics and the structure of leadership are considered through connecting these concepts and areas of research.

Addressing the context and research gap outlined above, the following research question is approached in this paper: *How and why do HCs engage in digitalization-related corporate local and regional responsibility and place leadership?*

3. Methods: sampling, data collection, and analysis

To examine how HCs utilize digitalization-related CLRR and place leadership we employed a qualitative research approach, applying qualitative content analysis of expert interviews (Mayring 2014). This method has been chosen deliberately to cater to the explorative nature of this study. The interviews were framed as expert interviews, aiming at two key purposes of this format: First, to source information on CLRR activities and, second, to reconstruct subjective interpretations and contextual knowledge, e.g. on motives for CLRR (Bogner, Littig, and Menz 2009). Regarding limitations of the chosen methodology, we need to be aware of the risk of generalizations regarding both modes and motives of CLRR (Bathelt and Li 2020) and of a potential bias towards firms that engage in CLRR and are affirmative of digitalization, and for that reason (confirmation bias) could have been participating in the interviews.

HCs were identified using Müller's (2018) Global Market Leader Index, which was manually expanded with additional firms identified by Chambers of Industry and Commerce representatives. All these firms were evaluated concerning their fit with Simon's (2009) definition of HCs¹ and whether they are located in rural areas, according to the Eurostat (2020) NUTS3-based definition of regions with a density of fewer than 300 inhabitants per km². An interview guide was constructed based on the conceptual model presented above. It contained questions about the dimensions (digital infrastructure, digital capabilities), modes, and motives of CLRR and place leadership.

We conducted 57 semi-structured interviews between September 2020 and March 2021. We interviewed two types of actors: Representatives of HC and regional actors. Table 1 provides an overview of the sample, with additional details available in the Appendix in Tables A1 and A2. HC representatives exclusively were members of the management as they are familiar with the firm's regional context and activities in terms of corporate engagement. We spoke with one representative per firm. Among the interviewed 28 HCs, 89% are active in manufacturing, while the remaining HCs exclusively produce software – comparable to the general population of German HCs. The average revenue of 195 mn. € per year is lower than the average of all HCs (325 mn. €, Simon 2018). Then, 29 regional actors in the vicinity of HCs were interviewed to enrich perspectives on CLRR of HCs. All interviews were conducted remotely because of the continuing COVID-19 pandemic.

Table 1. Overview of semi-structured interviews.

Type of organization	Number of interviews
Hidden Champions	28
Industrial design	11
Automotive and ship suppliers	5
Chemistry	3
Software and IT services	3
Other	6
Regional actors	29
Regional development agencies	12
Chambers of Commerce and Industry	8
Mayors	2
Other	7
Total	57

Source: Own elaboration.

Overall, we recorded 54 h of interview material with an average interview duration of 57 min and subsequently transcribed the records. Interviewees' statements were anonymized and translated into English for this article. The interviews were coded and analyzed using qualitative content analysis methodology (Mayring 2014). Coding into categories and re-coding was guided by the dimensions, modes, and motives of CLRR and place leadership described above. This process was performed using the *f4* (*f4transkript/f4analyse*) software. Additionally, secondary data sources such as regional newspapers, annual reports, and corporate websites were used to triangulate the interview material (Graebner, Martin, and Roundy 2012).

4. Results

Presenting the results, we focus on two dimensions of CLRR and place leadership that have emerged from the interviews: (a) digital infrastructure and (b) digital capabilities. The following two sub-sections portray both dimensions in terms of their modes (how?) and motives (why?).

4.1. CLRR and place leadership for digital infrastructure

4.1.1. Modes (how?) of engagement: digital infrastructure

Regarding digital infrastructure, CLRR of HCs in their rural areas encompasses several technologies. According to the interviewed actors, HCs in rural areas are mainly involved in developing digital infrastructure that is already broadly available in agglomerations such as broadband or fiber. As multiple HCs report having refrained from relocating IT infrastructure or R&D functions to areas with better digital infrastructure, they have upgraded their local digital infrastructure, driven by self-initiative (HC18/27).

We have our main data center and our central R&D departments located here. That is why we laid down a very thick cable early on – or rather got involved so that it would be laid down here. (HC27)

Public-private partnerships are common platforms for HCs to develop digital infrastructure. In these, management representatives of HCs are portrayed as driving forces, supported by regional public actors (RA25). In particular, regional development agencies are involved as public actors in ensuring sufficient digital infrastructure. However, HCs frequently criticize the limited capacity, as these actors are more knowledgeable in other realms of economic development.

In terms of political backing for expedited provision of high-speed internet connections, firm size appears to be a differentiating factor: HCs with more than a few hundred employees have praised the rapid governmental reaction to their connectivity needs (HC22/27, RA1).

Particularly remote firm locations pose additional challenges for connectivity. Here, questions of cost allocation and whether connectivity-related expenses of individual HCs are to be covered by fiscal budgets are contested (HC24). Frequently, the last mile to the grid is portrayed as a major undertaking in rural locations of HCs. Through modes of exclusive agency and benefit (Bürcher 2017), some companies have independently drilled the last segment to ensure connectivity (HC18, RA8). As these

cases are isolated and remote locations of single firms, limited positive externalities exist for neighbouring firms in terms of benefitting from newly developed digital infrastructure.

In some cases, they are located so far in the periphery that a connection is sometimes very difficult. The service providers of such technologies are simply not willing to lay the last 300 meters of fiber, because only one company is involved. [...] They had to finance it themselves. (RA8)

HCs in rural areas also take on leading positions in endowing their regions with novel technologies such as 5G, albeit to a lesser extent than broadband and fiber internet (HC27). Those novel technologies are mainly limited to HCs that take an affirmative stance towards the potential of digitalization, and have advanced their digitalization strategies and digitalization-related innovation, for example with 5G campus and factory networks as applications for manufacturing-oriented HCs. Again, inclusive agency of groups of HCs is mentioned as a common mode of engagement.

We are very strongly involved [in developing new regional digital infrastructure]. Together with the state of Lower Saxony, we would like to create an enclave here: We are involved in the state government's 5G project. In these realms, we frequently also join forces with [other regional HCs]. (HC27)

Digital infrastructure for remote work is another component of HC-led CLRR. The COVID-19 pandemic was mentioned by all interviewed firms as an accelerator for work from home. This in particular has implications for fast internet connections of remotely working employees (HC22). To compensate for weak internet and other challenging conditions in working from home, many HCs are considering co-working spaces for their commuting employees (HC14/27). These facilities are another important element of digital infrastructure that HCs are involved in developing, funding, and operating on a regional level. Again, this measure is mainly portrayed as a joint and inclusive effort with other local companies, regional development agencies, and a local university of applied sciences.

The new co-working space 'ZediTA'! There is also funding, which helps some partners to come together there. Hameln is also a medium-sized center and has the Weserbergland University of Applied Sciences, and this underused space in the central train station, which is perfect in terms of centrality. (RA19)

4.1.2. Motives (why?) for engagement: digital infrastructure

HCs describe their motivation for taking a leading position in the development of new digital infrastructure in their rural regions as driven by both necessity and anticipated potential. A lack of swiftness by municipal and regional administrations in developing required digital infrastructure is stated as a motive by HCs to engage in place leadership (HC9/18).

According to the interviewed actors, several examples detail pro-active corporate engagement by HCs to develop broadband access due to absent public actors in providing this (RA3). The situation is portrayed as exacerbated by increased urgency – due to accelerating technological developments or unexpected crises such as the COVID-19 pandemic that necessitate more digital ways of working (HC8). The following quote

also emphasizes that such expansions of digital infrastructure are not a singular event, but are anticipated to occur repeatedly in the future.

I started the process five years ago. Out of necessity, because we have many remote workers. Something must be done here. The mills grind so slowly. We needed a dedicated line dug here – virtually at our own expense. We are now paying it off very expensively. [...] Now the cables have been laid, but it's too late. After all, it's a sore subject we are dealing with here. The coverage is no longer up to date. It no longer keeps pace with the development of the world. (HC9)

Although plans for public broadband coverage of these remote locations are reported as existing in most interviewed cases, urgency is stated as an additional motive by HCs to develop these infrastructures independently (RA3).

It took seven years to apply for it, and then we finally got it. However, we drilled the last two km to the distributor ourselves with a drilling machine. Otherwise, it would have taken another two years. We said: Enough is enough. (HC18)

4.2. CLRR and place leadership for digital capabilities

4.2.1. Modes (how?) of engagement: digital capabilities

Analyzing the interview records reveals how and why HCs are engaged in developing digital capabilities in the population of their rural locations. In the context of this paper, CLRR in this realm excludes knowledge spillovers by internally-trained HC employees switching to other regional firms as this regional diffusion of digital skills is not intended. Hence, this section focuses on forms of corporate giving, volunteering, and support to foster regional digital capabilities (Hohn, Kleine-König, and Schiek 2014).

An area of corporate engagement related to digital capabilities are endowed professorships with local universities (RA8). Here, forms of HC-specific inclusive place leadership become visible. In localities with high densities of HCs, such as Haiger in Central Hesse, pooling of interests and joint engagement by groups of HCs is taking place – for instance, for funding endowed professorships. Frequently, the engagement of HCs for digital capabilities already commences at an early age, including programming workshops and other forms of technical education, as well as support for supra-regional initiatives such as the 'Little Scientists' House' [*Haus der kleinen Forscher*] (RA28/29).

[HC] has been very active in promoting technical education in kindergartens. They have developed a technology kit to develop children's affinity for digital technology. [Another HC] is involved in this area, too. (RA3)

Occasionally, regional business clubs develop solutions for schools to improve digital capabilities and then approach HCs to fund them. The individual agency of management members plays an important role.

These learning robots can cost anywhere from 2-3,000 €. The HCs are then approached: 'Do you want to support this? It is the school in your town, your logo will be on it and you will have access to the school and its students. They will learn about technology and potentially be your trainees in five years.' [...] The individual companies do not initiate it, but a regional association of young entrepreneurs does. (RA6)

Another instrument of HC-led CLRR that aims at both digital infrastructure and capabilities are digital hubs. As an example, one HC in rural Leine-Weser in Lower Saxony has developed and operates it through individual agency (RA9/16).

This ‘digital hub’ is run only by [HC CEO] as a private investor. He does it, because he is currently only a manufacturer of special machinery. He foresees that his business model is massively threatened by digitalization. Ultimately, he needs to have digital competencies. One of the driving forces behind this digital hub is to establish it as a service provider with corresponding competences. I think it’s always legitimate for companies to engage themselves regionally. It’s not because they’re good people, but because certain needs need to be met. He really is very strongly committed to this. [...] The district and the university will set up digital labs, for students to experience things outside their curriculum. (RA9)

4.2.2. *Motives (why?) for engagement: digital capabilities*

Motives for CLRR in this realm are portrayed as being strongly founded in regional recruiting of skilled workers, especially with digital capabilities. Additionally, HCs are portrayed as being particularly active in this regard compared with other firm types.

It is especially the HCs. If they originate from here, it is a mixture of marketing and sales strategy. Not so much in the sense of selling their own products, but with the motivation ‘I have to be seen to be attractive for potential employees.’ As these firms have a high export share, it makes no sense to market your products here. However, for skilled worker recruiting, it is important that they are seen. (RA7)

The strategic long-term nature of CLRR of HCs is emphasized, being coupled with the motivation to make these rural places attractive for current and potential employees (RA12/25/28/29).

It is a long-term strategy. They can’t get a serious advantage directly from each of these activities. [The CEO of a HC] states very openly in the regional media that it is extremely important for him to establish the region as an attractive location. [...] They have a sports program, a cultural program, and simply appear on the map in various ways. (RA10)

In particular, regional retention of young people is stated as a major strategic component for such engagement of HCs. Not solely bounded to limited capabilities, HCs are further reported as contributing to regional employment platforms, such as career fairs (RA27).

Of course, it is also in their own interest, because in a region like ours, we simply live off the young local people. We are not yet succeeding in getting even more people from other regions of Germany to move to the region. [...] Hence, the self-interest of the HCs to get involved there: On the one hand, to promote STEM education, on the other hand, to also be visible as early as possible. (RA12)

Other stated motives for CLRR also entail identity-related emotional attachment to the region, particularly for family businesses (Banalieva and Eddleston 2011). Additionally, *regional loyalty* has been attributed to corporate behaviour in certain regions in particular (e.g. Silicon Valley; Saxenian 1996).

4.3. *Summary of results*

We examined modes and motives of digitalization-related CLRR and place leadership of HCs in German rural areas in Germany in this study. In particular, we approached the

following research question: *How and why do HCs engage in digitalization-related corporate local and regional responsibility and place leadership?* Our results indicate that HCs are involved in CLRR activities regarding both digital infrastructure and capabilities.

For digital infrastructure, measures include the regional extension of broadband, fiber, and 5G technologies. Additionally, HCs are reported being active in the development of co-working spaces and the distribution of remote working equipment. Regarding the first analytical focus of modes of CLRR and place leadership, the majority of initiatives can be characterized by exclusive benefit, particularly for remote firm locations. Agency of place leadership has been portrayed as existing both exclusively and inclusively – for the latter through public-private partnerships or alliances among HCs or with other firms. Many HCs report having made major efforts to secure adequate connectivity, including (i) engaging local politicians, (ii) pressuring regional grid operators to speed up construction of infrastructure, (iii) dedicated lines with expensive contracts with telecom carriers, or even (iv) building their own lines. Regarding the second analytical focus of motives, lacking swiftness by public actors in ensuring digital connectivity has been emphasized. This can be interpreted as an additional dimension of the withdrawal of the state having been identified in the literature (Suwala and Albers 2020).

Regarding digital capabilities, HCs are involved in several areas of CLRR at most levels of education, such as workshops at schools and endowed professorships. Additional engagement is aimed at improving regional living conditions to attract and retain highly qualified workforce with digital skills. Modes of place leadership are predominantly driven by the individual agency of members of the management. Regional hiring of skilled workers, especially with digital capabilities, is depicted as a key motive for regional engagement in this field. Figure 2 and Table 2 depict the identified measures of digital infrastructure and capabilities regarding their modes of CLRR and place leadership in terms of agency and benefit (Bürcher 2017).

5. Discussion

In this article, we focused on private enterprise-led regional development through means of CLRR and modes of place leadership. With this study, we react to the scarcity of research regarding CLRR of HCs in general, and in particular for its relation to place leadership. Additionally, we aimed at incorporating digitalization as a novel dimension thus far not associated with CLRR and place leadership.

We showed that HCs as highly internationalized and innovative firms play an active role in advancing the digitalization of their rural home regions, both concerning digital infrastructure and capabilities. When compared to other business types, HCs are described as being particularly active in developing digital skills and securing relevant workforce regionally. Regarding these two dimensions, it needs to be discussed whether differences exist between infrastructure- and capabilities-related engagement in terms of spillovers and externalities to other regional actors – in other words, whether there is rather an exclusive or inclusive benefit. Further, it needs to be discussed whether the analysis reveals a pattern of historical revival of CLRR and corporate place leadership in rural areas, which was initiated by one-company settlements close to natural resources. Moreover, it should be reflected upon whether the regional loyalty of HCs is similar to firms in large and iconic regional clusters, such as Silicon Valley

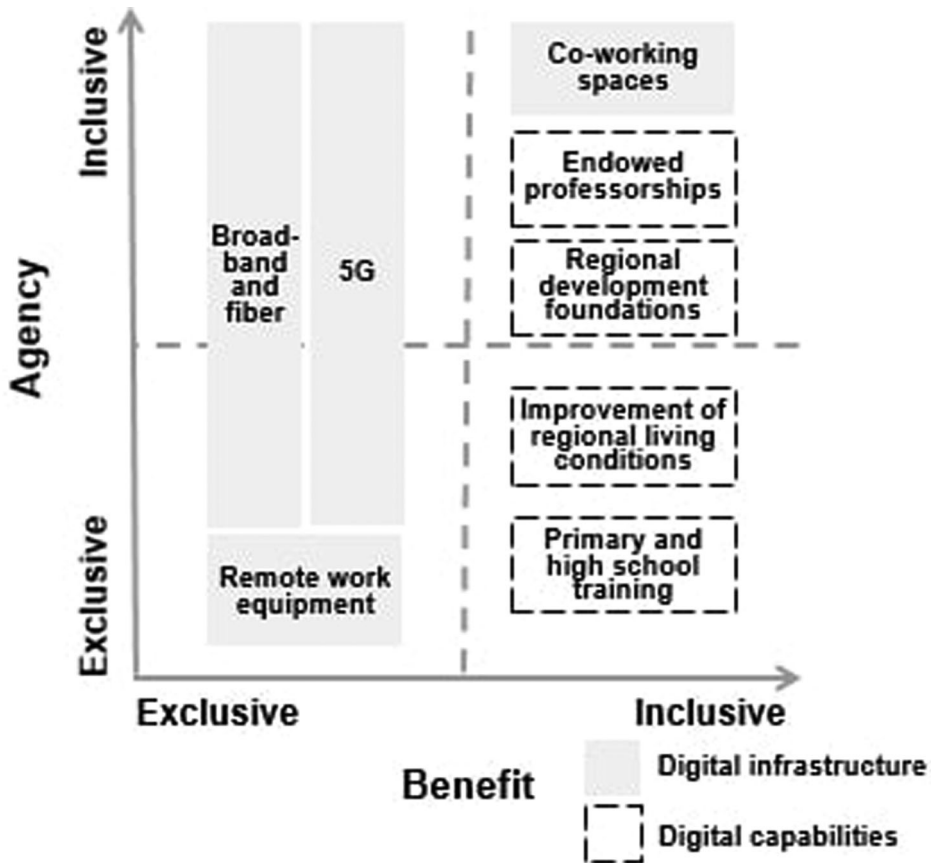


Figure 2. Agency and benefit of HC's CLRR and place leadership. Source: Own elaboration; axis dimensions based on Bürcher (2017).

(Saxenian 1996). Here, it should be taken into consideration that the collective nature of clusters is often absent for HCs, which are mostly located independently and in a more isolated pattern in rural areas.

Our findings contribute to filling the research gap of CLRR and place leadership thus far not jointly studied for HCs and in rural areas. We also contribute to the application of digitalization as a novel facet of corporate engagement. First, we show that HCs are a relevant firm type to intertwine CLRR and place leadership. They are innovative firms with significant resource requirements in often resource-scarce rural areas, and frequently possess a regionally dominant position through their tax base or employment. Second, digitalization expands existing knowledge of CLRR in other domains, such as housing or social services. The findings on motives of CLRR echo previous findings for other firm types and contexts, such as emotional attachment to the region, but emphasize the relevance of lacking swiftness and capacity of governmental actors, resulting in place leadership. Both agency and benefit of digitalization-related CLRR resemble findings in the aforementioned other domains. However, they deviate in the tendency towards inclusive agency when developing digital infrastructure, which has been identified as more exclusive in other fields by Bürcher (2017).

Table 2. Overview of areas, agency, benefit, and motives of CLRR and place leadership.

Dimension	Sub-dimensions	Agency	Benefit	Motives
Digital infrastructure	Broadband and fiber	Predominantly exclusive	Mainly exclusive in the short-term	<ul style="list-style-type: none"> • Driven by both necessity and perceived potential • Lack of swiftness of regional administrations • Increased urgency • Expansions of digital infrastructure anticipated as periodic events
	5G	Inclusive, mainly public-private partnerships	Depending on scope and scale of measure	
	Remote work equipment	Predominantly exclusive	Inclusive mainly on a household level	
	Co-working spaces	Inclusive	Inclusive	
Digital capabilities	Endowed professorships	Inclusive, mainly groups of HCs	Inclusive	<ul style="list-style-type: none"> • Regional recruiting of skilled workers, especially with digital capabilities • Strategic long-term nature • Regional retention of young people • Improve local living conditions for current and potential employees • Identity-related emotional attachment to the region
	Primary and high school training, including digital hubs	Identified both in- and exclusively	Inclusive	
	Regional development foundations	Inclusive, with individual HCs often in leadership positions	Inclusive	
	Improvement of regional living conditions	Identified both in- and exclusively	Inclusive	

Source: Own elaboration.

The findings of this article offer several implications for regional policymakers. As some HCs pursue regional engagement through exclusive agency and additionally frequently remain hidden in their initiatives, greater alignment of regional and corporate development goals and measures regarding digitalization may help create improved regional conditions. This is particularly relevant for HCs that are regionally dominant in terms of place leadership or economic dimensions such as tax base or employment, or both. As these larger firms are vital for the economic health of rural regions (Meili and Shearmur 2019), their digitalization-related requirements should receive attention by municipal and regional policies. Other regional private-sector actors should be integrated to aim at more inclusive agency and benefit of digitalization-related corporate engagement. Further, regional administrations in certain rural areas are portrayed as lacking swiftness in digitalization-related development, especially concerning digital infrastructure. This provides an impetus for improved efficiency. Regarding ownership structures of HCs, regional actors should target family firms concerning digitalization-focused initiatives, as this firm type has been shown as particularly strongly committed to regional stewardship (Banalieva and Eddleston 2011).

There are limitations of this article's analysis that need to be discussed. First, additional research is required to understand how other firm types such as SMEs or MNEs differ from HCs in terms of digitalization-related corporate responsibility and CLRR leadership. While HCs possess market leadership and high innovative capacity, this does not necessarily translate into advanced requirements for digital infrastructure and capabilities. Second, additional consideration of regional specificity in terms of

digitalization-related resources may contribute to a better understanding of HCs and their regional context. Third, the example of investment for digital infrastructure such as broadband – particularly for individual firms with remote sites – underline the ongoing discussion whether these expenses should be socialized or rather considered private corporate investment. As a consequence, it can be deliberated whether CLRR is an appropriate concept for cases of exclusive agency and benefit.

The results provide a foundation for future research. Additional analysis on other regional contributions of HCs and the companies' importance for their rural home regions in terms of economic and intangible effects can deepen the understanding of the firm type's relevance. Moreover, digitalization-related corporate engagement and place leadership of HCs should be contrasted and compared with other firm types. Further research should investigate influencing factors of digitalization-related engagement, such as firm-internal factors like ownership structure. As advancing digitalization is also linked to lessened regional embeddedness and to the relocation of firms (Asheim and Isaksen 2002), examining changes in overall CLRR in these circumstances may be additionally relevant.

Note

1. (1) Part of the top three companies in their market segment globally or are number 1 on their continent, (2) annual turnover below 5 bn. €, (3) low level of firm familiarity among the general public or outside their industry.

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Appendix

Table A1. Detailed overview of interviewed Hidden Champions.

ID	Industry	Position of interviewed representative	Firm foundation	Firm revenue (mn. €)	Employees (#)	Interview duration (min.)
HC1	Extension spindles	CEO	1990s	~5	~50	85
HC2	Wireless controls	Co-CEO	1990s	~50	~180	64
HC3	Lithium-ion batteries	CIO	2000s	~90	~1600	51
HC4	Water ultrafiltration	CEO	2000s	n/a	~140	59
HC5	Ladder systems	BU CEO	1940s	~150	~500	59
HC6	Slicing systems	CTO	1980s	~250	~1400	56
HC7	Bowden cables	CEO	2000s	n/a	n/a	30
HC8	Steel construction	CEO	1990s	~30	~200	35
HC9	Extraction and filtration	CEO	1990s	~30	~130	55
HC10	Electrical safety	CIO	1940s	~150	~900	50
HC11	Buffet solutions	CSO	1980s	~5	~20	51
HC12	Festive decoration	CEO	1890s	~10	~150	45
HC13	Fine chemistry	CEO	1990s	~15	~50	44
HC14	Marine gearboxes	CEO	1870s	~80	~500	63
HC15	Digital radio systems	CMO	1980s	~90	~50	92
HC16	Specialized textiles	CIO	1990s	~40	~150	40
HC17	Confectionery lines	CEO	1920s	~50	~250	49
HC18	Foundry technology	CEO	1990s	n/a	~30	54
HC19	Welding machines	CEO	1910s	~120	~500	57
HC20	Office furniture	CIO	1900s	~80	~600	57
HC21	Spark extinguishers	CIO	1910s	~90	~650	74

(Continued)

Table A1. Continued.

ID	Industry	Position of interviewed representative	Firm foundation	Firm revenue (mn. €)	Employees (#)	Interview duration (min.)
HC22	Central heating	CEO	1920s	~600	~3700	60
HC23	Welding torches	CEO	1940s	~300	~2200	62
HC24	Powertrain technology	CTO	1940s	~800	~4000	63
HC25	Software engineering	CEO	1990s	~10	~80	69
HC26	Switchgear	CEO	1990s	~60	~200	46
HC27	Seed production	CFO	1850s	~1700	~5700	50
HC28	Float glass	CEO	2000s	~300	~250	65
Average:				195	890	57

Source for firm data: Bureau van Dijk and desk research; latest data available for revenue and employees. Abbreviations: CEO = Chief Executive Officer, CIO = Chief Information Office, BU = Business Unit, CTO = Chief Technology Officer, CSO = Chief Sales Officers, CMO = Chief Marketing Officer, CFO = Chief Financial Officer

Table A2. Description of interview sample of regional actors.

ID	Type of regional actor	Interview duration (min.)
RA1	Regional economic development agency	56
RA2	Regional economic development agency	40
RA3	Chamber of Commerce and Industry (CCI)	60
RA4	CCI	60
RA5	Regional economic development agency	63
RA6	CCI	60
RA7	Regional economic development agency	60
RA8	CCI	63
RA9	Regional economic development agency	50
RA10	Regional innovation agency	65
RA11	Regional economic development agency	45
RA12	Employers association	75
RA13	Technology transfer agency	60
RA14	Regional economic development agency	60
RA15	CCI	60
RA16	Regional innovation agency	64
RA17	Employers association	65
RA18	Mayor	50
RA19	Mayor	48
RA20	Regional economic development agency	30
RA21	State economic development agency	75
RA22	Regional economic development agency	60
RA23	Regional economic development agency	50
RA24	Regional economic development agency	70
RA25	Regional economic development agency	60
RA26	CCI	50
RA27	Regional location marketing agency	25
RA28	CCI	60
RA29	CCI	60
Average:		57

Source: Own elaboration.