# Co-working in Västerbotten

Exploring the potential of co-working places in sparsely populated areas in Northern Sweden

Karin Holmstrand

Master Thesis in Human Geography, 30 hp

Spring term 2021

UMEÅ UNIVERSITY

Acknowledgements

Abstract

Over the past decades, the concept of 'co-working' has spread rapidly across the globe – however, mainly in urban areas. By contrast, this study focusses on the potential of co-working places in sparsely populated inland municipalities in Västerbotten, a region in northern Sweden with uneven population patterns. Aiming to explore whether co-working places would have the potential to contribute to altering the negative population trends by increasingly attracting teleworkers and by decreasing the need for long-distance commuting, the study is based on three research questions, concerning: 1) the potential of co-working places as an alternative workplace from the perspective of large organisations; 2) the potential of co-working places as a strategy for local development from the perspective of sparse municipalities; and 3) the potential of co-working places to contribute to the various aspects of sustainability. Nine semi-structured interviews were carried out with respondents from municipalities, large organisations and existing co-working places. Although the literature supports the theoretical merits of co-working places in sparse areas, the interviews show that the potential of co-working places in practice heavily depends on the number of potential co-working users, local conditions and time-specific trends in the society, including the Covid-19 pandemic. Ultimately, this exploratory study demonstrates that co-working places in sparsely populated areas is an increasingly relevant research area that deserves further attention.

Sammanfattning

Under de senaste decennierna har begreppet "co-working" spridit sig snabbt över världen, vilket också avspeglas i den akademiska litteraturen. Arbetshubbar, eller *co-working places* som de i studien kallas, förekommer dock främst i urbana områden. Denna studie fokuserade i stället på potentialen hos arbetshubbar i glesbefolkade inlandskommuner i Västerbotten – en region som sedan länge upplevt ojämn befolkningsutveckling. Syftet med studien var att undersöka huruvida arbetshubbar dels har potential att bidra till att vända de negativa befolkningsmönstren genom att göra glesbygdskommunerna till ett mer attraktivt alternativ för den växande gruppen distansarbetare, dels har potential att bidra till ökad hållbarhet, exempelvis genom att minska pendlingsberoendet. De frågeställningar som studien utgick från var följande:

1) Kan arbetshubbar ses som ett alternativ till den ordinarie arbetsplatsen bland stora arbetsgivare i Västerbotten, och i så fall, under vilka förutsättningar?

2) Har arbetshubbar potential att bidra till lokal utveckling i glesbygdskommuner i Västerbotten, och i så fall, under vilka förutsättningar?

3) Har arbetshubbar potential att bidra till att de olika hållbarhetsmålen nås?

Eftersom det inte var de befintliga strukturerna som utvärderades, utan snarare potentialen hos en alternativ arbetsplatslösning, antog studien en utforskande form för vilken en kvalitativ metod bedömdes som den mest lämpliga. Nio semistrukturerade intervjuer genomfördes med företrädare för tre inlandskommuner, fyra större organisationer och två befintliga arbetshubbsprojekt utanför Västerbottens inland.

I likhet med tidigare studier pekar intervjuerna på att arbetshubbar på flertalet sätt kan bidra till ökad hållbarhet. I synnerhet finns fördelar ur ett hälsoperspektiv, där arbetshubbar å ena sidan motverkar pendlingens negativa

hälsoeffekter och å andra sidan minskar risken för social isolering kopplad till hemarbete, samt fördelar ur ett inkluderingsperspektiv, där arbetshubbar kan främja inkluderande tillväxt genom att göra det lättare att bo och verka i glesbygden. Dessutom har arbete från lokala hubbar troligen klimatfördelar tack vare minskat pendlingsberoende, även om denna aspekt endast berördes flyktigt i intervjuerna. Vidare kan arbetshubbar gynna företag genom att vara en plattform för kunskapsöverföring, men troligen främst om hubbens användare har liknande kompetens. Väl så viktigt ur ett företagsperspektiv är det förmodligen att vara lyhörd på vilka arbetssätt som medarbetarna efterfrågar, eftersom detta har påverkan på företagets roll som attraktiv arbetsgivare.

Trots att såväl dessa intervjuer som tidigare studier pekar ut många teoretiska möjligheter med arbetshubbar i glesbygden, blir den sammanvägda bilden från intervjuerna att arbetshubbarnas potential i hög grad beror på det potentiella användarunderlaget lokalt, kommunernas specifika förutsättningar och pågående samtidstrender. Flera kommuner var intresserade av att satsa på en lokal arbetshubb, men menade samtidigt att osäkerheten kring hur stort intresset bland lokalbefolkningen var fick dem att tveka. Att en arbetshubb bör anpassas till de lokala förutsättningarna var de tillfrågade överens om. Enligt tidigare studier kan arbetshubbar förekomma i många olika former, vilket dels bekräftades av kommunernas olika bild av hur en eventuell arbetshubb skulle se ut i deras kommun, dels exemplifierades av företrädarna från de två arbetshubbsprojekten. Arbetshubbarnas potential påverkas också av andra trender och händelser i samhället, exempelvis digitalisering, distansarbete till följd av en pandemi och ruraliseringstrender.

Bland länets stora arbetsgivare diskuterades främst frågan om distansarbetets vara eller icke-vara vid en återgång till "det normala" efter Covid-19-pandemin. Ingen av de tillfrågade organisationerna hade gjort något offentligt ställningstagande angående arbetshubbar: flera menade att frågan om huruvida

de anställda distansarbetade hemifrån eller från en arbetshubb hade mindre betydelse, så länge arbetsmiljön var tillfredsställande och de anställda var nöjda. Däremot vittnade organisationerna om att pandemin för dem inneburit en testperiod för distansarbete, som på det stora hela hade fallit väl ut.

I studien diskuterades också om arbetshubbar i glesbygden behövs eller om ökningen av distansarbete är tillräcklig för att fler ska överväga att bo kvar i, eller flytta till, glesbygden. För att svara på den frågan krävs vidare undersökningar av hur medborgarna ställer sig till distansarbete, samt om deras inställning påverkas av om distansarbetet bedrivs hemifrån eller från en delad arbetsplats. Vidare konstateras att även om tillgången till arbetshubbar och distansarbete generellt skulle göra glesbygden till ett möjligt boendealternativ för fler, är det inte givet att den negativa befolkningsutvecklingen vänder – detta är till syvende och sist en fråga om ifall människor föredrar att bo i täta eller glesa miljöer. Slutligen visar denna studie att arbetshubbar i glesbygden är ett forskningsområde som blir alltmer relevant och förtjänar uppmärksamhet därefter.

Contents

1. Introduction

As in many parts of Sweden, Västerbotten county experience uneven population patterns. In 2020, Umeå and Skellefteå hosted 74 percent of the regional population, and Umeå, in particular, has had a positive population trend for decades (Statistics Sweden, 2021). Simultaneously, clear trends of depopulation are prevalent among the more sparsely populated inland municipalities (*ibid*.). While the smaller municipalities neighbouring Umeå and Skellefteå, which profit from a well-developed public transport network, have evolved to distinctive commuter municipalities, commuting becomes more challenging for the peripheral inland municipalities due to the large distances and the low population density. For many inhabitants, car-commuting is the only viable option since the access to public transport is limited or unsatisfactory. In the regional development strategy *RUS 2020-2030*, a well-functioning digital infrastructure, transition to a sustainable transport system and changed mobility habits are pointed out as key concerns for reducing greenhouse gas (GHG) emissions from transports (Region Västerbotten, 2020).

As digitalisation proceeds and the internet infrastructure develops across the Swedish regions, teleworking – i.e. working from a remote location using information and communication technologies (Belzunegui-Eraso & Erro-Garcés, 2020) – has increasingly become an attractive alternative to commuting to the fixed workplace. This development accelerated during the Covid-19 pandemic, as all Swedish organisations with the option to change to teleworking were encouraged to do so. It has been a challenge for many organisations to rearrange their work modes, but it has also generated a widespread optimism about future opportunities to a more flexible working day with less work-related travels. A recent survey among employees in Västerbotten revealed that many of those who had shifted to the home office wished to partly continue with teleworking

after the pandemic, since this allowed them to travel less and to form their working hours (Bottke & Bieblad, 2020) more flexibly. Not only does changed mobility patterns have the chance to release time for the individual, but it is also expected to reduce GHG emissions from transports, which is a crucial part of the societal transition in accordance with global climate agreements. In order to reduce the GHG emissions with 70 percent until 2030, studies indicate that not only new fossil free fuels are required but also a 30 percent reduction of the number of car travels (Persson, Hult & Larsson, 2019), since car transports represent more than half of the GHG emissions from domestic transports (Naturvårdsverket, 2020).

Changing working habits – and thus commuting habits – may also positively affect the attractiveness of small communities in sparsely populated areas. Home-work commuting represents the lion part of the individual's fixed travel patterns (Budnitz, Tranos & Chapman, 2021), and the distance to work has proved to be influential when people choose where to settle (Clark, Huang, & Withers, 2003). Yet, if the work can be done anywhere, the commuting distance is no longer a limiting factor for where to live. Thus, there are several indications that peripheral regions can increase their attractiveness, as the opportunities for teleworking are improving. Since more jobs are independent from a fixed location, the local labour markets expand and this would allow more inhabitants to stay in, or move to, a peripheral area.

Working from home is however not a good alternative for everybody for different reasons, including physical, material, and psychosocial aspects. In the Västerbotten survey on distance work during the Covid-19 pandemic, many respondents answered that they felt more isolated and that they missed their colleagues when working from home. Other interviewees pointed out the lack of ergonomic chairs and tables that they were used to at the office. The balance between work and private life is also easily blurred when working from home

(Bottke & Bieblad, 2020). The social isolation and the vague boundaries between work and leisure are equally the main drivers of the rapid proliferation of co-working spaces across the globe over the last 15 years (Fuzi, 2015). Co-working spaces have primarily targeted the group of self-employed and freelancers that do not have a fixed office (Moriset, 2013). The concept has exploded in urban areas worldwide, and the list of Swedish cities which provide co-working spaces steadily grows. Umeå and Skellefteå are the representatives of Västerbotten on this list. Co-working spaces appear to be an urban phenomenon, but the related concept of 'telecottages' was tested in more sparsely populated Swedish regions already in the 80s (Qvortrup, 1989; Crellin, 1994) – before the concept of 'co-working space' was born in the United States in 2005 (Kojo & Nenonen, 2017). Apart from co-working spaces and telecottages, there is a great diversity of similar concepts, including telecentres, serviced offices, collaboration hubs, incubators and third places. In this study, the term 'co-working place' will function as an umbrella for these concepts. The long list of (perhaps imperfect) synonyms can symbolise the many forms that such a place could take and the many motivations to why it is needed. As a remedy to isolation and unstructured working hours, the need for co-working places may increase – also in sparsely populated areas – as a parallel to the development of teleworking.

2. Aim and research questions

This explorative study aims to investigate the potential of co-working, in its different forms, in sparsely populated areas in Västerbotten, as a strategy for increasing the attractiveness of shrinking municipalities and for decreasing the need for work-related travels. The potential is identified both as attitudes to co-working places among municipal officials and employers in organisations, and

as practical and financial prerequisites for municipalities and organisations to support such workplace solutions.

The research questions are:

A. Do firms and organisations see co-working places as a potential alternative to office-based work for their employees? If so, under which circumstances?

B. Do municipal officials see co-working places as a potential strategy for local development in sparsely populated municipalities? If so, under which circumstances?

C. Do co-working places have the potential to contribute to the various aspects of sustainable development, including more inclusive economic growth, improved health and reduced carbon footprint?

The study is structured in the following way. The next chapter sketches out the theoretical framework, followed by a chapter which presents previous studies on the topic. Here, the definition of 'co-working place' is also further discussed. This is followed by a methodology chapter where methodological considerations, method design, and data collection are described. Thereafter, chapter 6 presents the geographical and time-specific setting of the study. In the succeeding chapter, the qualitative findings are presented and analysed, and then further discussed in the chapter 8. The final chapter provides some concluding remarks.

3. Theory

3.1 Agglomeration and spillovers

The advantages of agglomeration are well-documented throughout the literature of economic geography. Proximity to others favours idea sharing and collective learning, as if it were something "in the air", as Alfred Marshall classically put it in *The Principles of Economics* (1920). In a knowledge-intensive atmosphere, individuals learn from each other more or less unconsciously – usually referred to as "knowledge spillovers". Businesses are attracted to such environments since they offer a good supply of skilled labour, and employees are equally attracted due to the rich labour market of the place. In agglomerations which are specialised in a certain field, the productivity will increase – both in terms of labour input since knowledge spillovers lead to increased skill levels, and in terms of energy input since dense areas allow for a more efficient use of resources. This phenomenon, referred to as Marshall-Arrow-Romer (MAR) externalities, ties specialisation to productivity (Marshall, 1920).

The economic benefits of agglomerations are however not limited to highly specialised environments. In her urban studies, Jane Jacobs (1961;1969) pointed out the diversity as the main strength of cities. In dense environments, as cities are, citizens will encounter different knowledges, and this multi-skilled atmosphere shapes innovativeness and growth. The benefits of diversity are referred to as Jacobian externalities. Glaeser (2000) draws on these ideas when he argues that diverse knowledges strengthen human capital, which is key to growth generation. Bringing humans together enhances transport efficiency and skill transfers. Consequently, when American cities were compared, workers in large metropolitan areas were 50 percent more productive than their counterparts in smaller metropolitan areas (Glaeser, 2011). Frenken, Van Oort & Verburg (2007) choose to differentiate between variety of related skills and variety of unrelated skills. The former leads to complementarity, which fuels the economic

development of a region, whereas the latter contributes to making the labour market more resilient to shocks.

3.2 Collaboration and community

Dense communities favour collaboration, but not only 'density' in a physical sense. 'Community' as a concept may refer to a geographical location, a shared place, but it can also define a group of individuals with shared values or shared interests. Communities can in this sense overbridge spatial distance (Latham, 2009). Boschma (2005) analyses five types of proximities: cognitive, organisational, social, institutional, and geographical proximity. These proximities can facilitate coordination of collaborations to a certain level, but too much proximity can lead to lack of novelty, or so-called lock-in effects. To enhance interactive learning, geographical and cognitive proximity are the most influential, but the other proximities can compensate for geographical proximity when this is lacking (Boschma, 2005). Similarly, dense social networks, both to other intraregional industries and to related industries in other regions, can compensate for insufficient industry specialisation at local level (Eriksson & Lengyel, 2019). Therefore, advice networks play a crucial role for providing diverse knowledge to a firm or a region. Studying ICT firms at a business incubator in Umeå, Lőrincz et al. (2020) show that advice networks are primarily formed between co-workers with similar or related skills. Furthermore, workers with many global contacts are likely to have more diverse skills than workers with a predominately local network. Consequently, more globally oriented workers can function as a bridge for the local community to access complementary knowledges (Lőrincz et al., 2020).

3.3 Creativity, skills, and attractiveness

The presence of talent, skills and creativity is another factor which is often highlighted as particularly important for regional development and economic growth. Glaeser (1994) argues that "highly skilled individuals" produce innovative ideas which enhance the productivity and attractiveness of their region. The prosperity of a place depends on the presence of many skilled individuals and small firms (Glaeser, 2011). In a similar vein, Florida (2003; 2004) identifies creative individuals as the main contributors to a well-performing region, driving innovation and regional growth. His well-cited, and widely debated, theory of "the creative class" concerns the growing group of professionals within high-tech, design, engineering, cultural branches, think-tanks, and other creative industries. Despite the wide variety of businesses, the creative class is characterised by some shared values, including individuality, openness, diversity, and meritocracy (Florida, 2004).

This entrepreneurial focus has however been criticised. Harvey (1989) argues that urban governance has shifted from managerialism, with focus on local provision of services, to entrepreneurialism, with inter-urban competition and business attractiveness as the main concerns. One strategy to lure capital to the region is to focus on attracting actors within the knowledge economy, but since capital and firms are increasingly mobile, the successfulness of the strategy is uncertain. Instead of being occupied by polishing the surface, Harvey argues that the governance should focus on improving the conditions for the existing inhabitants (Harvey, 1989).

4. Previous studies

Co-working as a concept is subject for a rising interest in the academic literature, but still, the picture of the nature, drivers and effects of different co-working places are far from complete. This section will go through some aspects of co-working places which have been addressed in previous studies, including the three legs of sustainable development: the economic, the social, and the environmental dimensions. To begin with, however, I will go through the many definitions of co-working, its related concepts and explain how I will use the terminology hereafter.

4.1 Terminology and characteristics of co-working places

The way in which the term 'co-working space' is used in the literature differs substantially from one text to another, which could easily become a source of confusion. In some cases, the term refers to all sites where individuals are co-located and work alongside without necessarily working together (Assenza, 2015; Richardson, 2017). In other cases, the term is used for a specific type of arrangement with certain characteristics and separate from other similar initiatives. Since the term "co-working space" is used both as a more general concept, embracing various sorts of sites, and as a specific concept (see Table 1), Kojo and Nenonen (2017) choose to use the term 'co-working *place*' as the umbrella concept. To avoid the potential risk for misinterpretations linked to the term 'co-working space', I will follow their example and let 'co-working place' denote all types of external workplaces where individuals are co-located and let 'co-working space' represent a specific type of co-working place (see Figure 1).
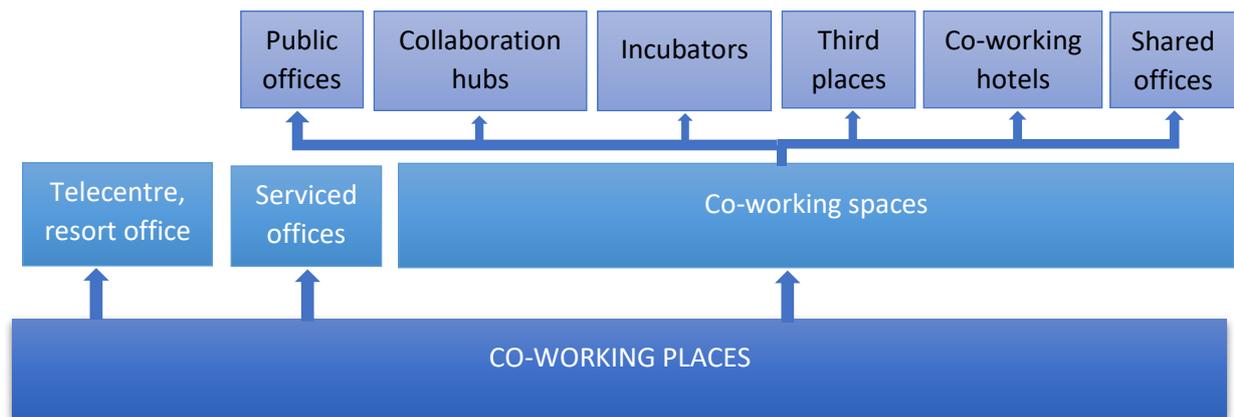
Figure 1: Definitions of co-working places (Kojo & Nenonen, 2016; Kojo & Nenonen, 2017)

Table 1: Studies referring to "co-working spaces" as a general term, or a specific term. Definitions

Reference	General	Specific	Definition
Assenza (2015)	X		Space for co-located individuals, sometimes combined with incubator facilities.
Fuzi (2015)		X	As separate from serviced offices and incubators/accelerators.
Kojo & Nenonen (2016); Weijs-Perree et al. (2019)	X		Umbrella for public offices, third places, collaboration hubs, incubators, co-working hotels and shared studios
Kojo & Nenonen (2017)		X	As separate from telecentres and serviced offices.
Lorne (2020)		X	"Co-working spaces are hyper-flexible, pay-by-the-hour open plan workplaces associated with communities of creative, self-employed and digital start-ups"
Mariotti et al. (2017)		X	"Real" co-working spaces should not just provide the opportunity to co-work, but should be fully dedicated to "openness, collaboration, and community"
Moriset (2013)		X	As separate from incubators, telecentres and business centres. Co-working spaces as an "atmosphere, a spirit and a lifestyle"
Richardson (2017)	X		As umbrella for models like incubators, accelerators, etc.
Tadashi (2013)	X		As separate from incubators

Table 2 exemplifies different concepts that are linked to the concept of co-working. They differ from each other in terms of business model (profit or non-profit), level of access, leasing contract, presence of staff, provided services, and

location. The various characteristics reflect the diversity of drivers and targeted users of each co-working place.

Table 2: List of vocabulary to co-working related concepts and their definitions.

Concept	Definition	Reference
Collaboration hubs	Non-profit and semi-public. Pre-registration. Mixed access depending on group (e.g. free access for students)	Kojo & Nenonen (2016)
Co-working hotels	Profit and semi-public. Pre-registration. Short-term lease	Kojo & Nenonen (2016)
Co-working place	Umbrella for all sites offering co-working opportunities	Kojo & Nenonen (2017)
Co-working space	Definitions vary, see Table 1.	Assenza (2015); Fuzi (2015); Kojo & Nenonen (2016); Kojo & Nenonen (2017); Lorne (2020); Mariotti et al. (2017); Moriset (2013); Richardson (2017); Tadashi (2013); Weijs-Perree et al. (2019)
Incubators, accelerators	Non-profit/profit and private. Pre-registration. Long-term lease. Aim to commercialise innovative business ideas and models.	Fuzi (2015); Kojo & Nenonen (2016)
Public office	Non-profit and public. No pre-registration	Kojo & Nenonen (2016)
Resort offices	Telecentre located in a recreational area. Aiming to attract temporal visitor for a period of concentration and creativity.	Kojo & Nenonen (2017)
Serviced offices	Contain one firm or many. From basic to highly personalised service.	Fuzi (2015); Kojo & Nenonen (2017)
Shared studios	Profit and private. Pre-registration. Long-term lease	Kojo & Nenonen (2016)
Telecentres	Neighbourhood centres or telecottages. Proximity to home and regional development important drivers. Provide new technology to businesses, and students.	Crellin (1994); Kojo & Nenonen (2017)
Telecottages	Providing ICT equipment to local population in rural and sparsely populated regions, or in poor suburbs. Public access.	Holloway (1994)
Third places	Profit (for the price of a coffee) and public. No pre-registration	Kojo & Nenonen (2016)

4.1.1 The emergence of co-working places

Telecentres and telecottages are the oldest versions of co-working places. They first appeared in Scandinavia in the 1980s, aiming to make the new technologies more accessible to inhabitants in remote regions (Holloway, 1994). The telecottage in Vemdalen was one of the earliest examples. The telecentres and telecottages had their goldens years in the early 1990s. At this point, Sweden had 25 active telecottages (Wenström, 2014), and the concept had spread to many other countries including the Nordic countries, England, Ireland, Germany, Austria, Australia, Brazil, and Canada (Holloway, 1994). In 1993, an international conference about telecentres and telecottages, called *International Symposium 93*, was held in Australia. Documentations from this conference testify to a widespread optimism regarding the potentials of telecentres to strengthen rural communities in an ever more globalised world (Holloway, 1994; Crellin, 1994). The targeted group of users were existing local businesses, e.g. farmers and cultural workers who could use the new technology to expand their business networks, and students who could get access to distance studies via the telecottage (Crellin, 1994). The services provided varied but always included basic information and communications technology (ICT) equipment. The telecottages were serviced and available for everyone in the area (Holloway, 1994). Despite the optimism of the early 1990s, the telecottages gradually lose their relevance in Sweden as computers were popularised in the households (Wenström, 2014). A similar concept to the telecentres was the resort office, which is a Japanese variant. The resort offices are typically located in recreational areas and aim to attract temporal visitors, who stay at the hub during a limited period of time in order to get good opportunities for creativity and concentration (Kojo & Nenonen, 2017).

In 2005, the first so-called co-working space started in San Francisco, California (Mariotti, Pacchi & Di Vita, 2017). As the telecottage, the co-working space provided an external workplace for teleworking individuals from different

businesses. The purpose with the site was however different. While the telecottage aimed to provide access to ICT equipment for populations in remote areas, the co-working space specifically targeted the group of small-scale entrepreneurs and freelancers in urban areas who searched for an alternative to the isolation of the home office (Fuzi, 2015). The co-workers were not so much motivated by the equipment and the services provided, as by the proximity to other co-workers, a more inspiring work environment and better chances to new collaborations (Kojo & Nenonen, 2017). The concept spread rapidly across the globe, and co-working spaces are currently established in a growing number of Swedish cities.

As the concept of co-working spaces grew in popularity, a diversity of different co-working models emerged, and consequently, the definition of co-working spaces became fuzzy. It is in light of this that Kojo & Nenonen (2017) suggested the term 'co-working place' to represent a more general concept which includes telecentres, serviced offices and co-working spaces. A more detailed description of the different forms of co-working places are presented in Table 2.

4.1.2 The characteristics of co-working places: drivers, and preferences
As Table 1 indicates, there is no consensus in the literature regarding the characteristics of co-working spaces. Nevertheless, most studies point out collaboration, community, and openness as central themes. The main groups of users are self-employed, freelancers and small-scale entrepreneurs, primarily from creative industries, IT, and high-tech start-ups (Weijs-Perrée, van de Koevering, Appel-Meulenbroek & Arentze, 2019; Assenza, 2015; Tadashi, 2013). Co-workers can enjoy the work-life balance and community of an office, while having the flexibility of freelancing (Kojo & Nenonen, 2016). They can reduce loneliness and enhance inspiration to innovation (Tadashi, 2013).

Some studies have examined the main motivations to become a co-worker. When comparing different co-working places in rural Wales, Fuzi (2015) found out that the main reason that users gave for joining differed from place to place – at one place, meeting new investors was the most important factor, while being a part of a vibrant social community was the main reason at another (Fuzi, 2015). Weijs-Perree et al. (2019), who examined drivers and preferences among co-workers in the Netherlands, pointed out that "finding a place outside home" and being in a "creative and inspiring environment" were the most frequent causes for joining, although "social interaction with others" and "affordability" were also important (Weijs-Perree et al., 2019). Richardson (2017) listed the socialising aspect as the prime reason, and the potential work-benefits as number two.

Since the main driver for becoming a co-worker varies, the idea of what is a good co-working place differs too. Weijs-Perree et al. (2019) found that a majority preferred places that offered accessibility for both car and public transport, a homelike interior, and a moderate diversity among the tenants, but they also observed that these preferences varied between sectors. Assenza (2015) suggested that the design of the physical space should facilitate spontaneous personal interaction, but she also noted that although individuals have different preferences, everybody needs a good working environment with few distractions. Richardson (2017) argued that co-working places should have different characters: some of them having a social profile, while others focusing on a 'calm work atmosphere'. Kojo & Nenonen (2016) stress the importance of designing a co-working place in accordance with the local demand. Similarly, Tadashi (2013) argues that geographical differences matter and should be considered to suit the local community.

4.1.3 Importance of location

Location is an important determinant of the chances for a co-working place to survive. Moriset (2013) observes that co-working places can be established anywhere but tend to appear in urban "creative class-friendly" areas, since professionals from the creative industries are the most frequent users of co-working places. In a similar vein, Mariotti et al. (2017) mention high density business clusters as the most attractive location for a co-working place, with good accessibility to public transports and proximity to universities. Large and central buildings are more visible, which could increase the attractiveness (Mariotti et al., 2017). On the other hand, buildings in the inner cities are often associated with high rents, reason why smaller premises in less central areas could be preferable (Manika, 2020). These examples concern urban co-working places, but location is equally important in sparsely populated areas. Holloway (1994) highlights the importance of telecottages to be located where people pass by. Fuzi (2015) suggests that co-working places in sparse regions preferably could be combined with existing structures of third places.

This section has shown that there is a great variety of co-working places with different characteristics. Depending on the main driver of the group of users, different co-working places are the most suitable. Nevertheless, all co-working places are similar phenomena that could be seen as responses to the demand of the rising knowledge economy (Kojo & Nenonen, 2017). In the following sections, co-working places are discussed in relation to economic, social, and environmental development.

4.2 Co-working and sustainability

4.2.1 Economic benefits

From an economic point of view, teleworking from a co-working place has potential at various scales. Kanellopoulos (2011) points out that teleworking does not only benefit the individual, in terms of freeing time for private life and helping dual-career families, but it has also led to higher productivity at the firm. Moreover, teleworking can make a better use of public resources and trigger economic development, which favours the local community (Kanellopoulos, 2011).

The positive effects of co-working places on firm productivity are primarily linked to the collaborative environment of idea-sharing that these places offer. Fuzi (2015) observed that 80 percent of the participants in her case study in rural Wales had seen an increase in income after joining their co-working place, and 60 percent responded that they had become more productive. Assenza (2015) investigated how these knowledge spillovers among co-workers could be supported by the design of the co-working place. She highlights the importance of a social space which is encouraging participation and interaction. However, not only physical proximity is important for knowledge spillovers, but so is social proximity. In other words, co-working communities which are aiming to maximise social interaction should not be too heterogenous but consist of individuals who share some common characteristics (Assenza, 2015). On the other hand, co-working places are by definition more open and diverse than e.g. corporate offices, and this is what creates the innovative environment (Tadashi, 2013). This act of balancing is reflected in the Dutch study where the participants responded that they preferred "moderate diversity among tenants" (Weijs-Perree et al., 2019).

The fact that physical proximity is not enough for fostering collaboration and innovation is also discussed in the Welsh case study. Fuzi (2015) concludes that services and events that facilitate interaction among the co-workers might be necessary – especially at places that host many young entrepreneurs and start-ups. She suggests that co-working places in sparse regions preferably could be combined with incubator or accelerator facilities, but it is important to match the place with the demand of the local community (Fuzi, 2015).

At community level, co-working places are associated with the so-called creative class, which is identified as a key driver to long-term economic growth (Moriset, 2013). In a similar vein, Manika (2020) argues that co-working places have the potential to generate economic and social development to a shrinking region by transforming abandoned buildings to new platforms for the sharing economy. Analysing urban effects in Milan, Mariotti et al. (2017) conclude that co-working places can function as a post-crisis strategy for boosting the economy.

In sparsely populated areas, several studies support that teleworking and co-working places have potential to foster economic development. In their case studies on rurality and teleworking in Australia, Simpson, Daws, Pini & Wood (2003) found that there was a widespread belief among rural respondents that teleworking can strengthen their local communities, since it enhances the chances for a job career without moving to a larger labour market. Therefore, the access to teleworking benefits both the rural individual and the rural community (Simpson et al., 2003). Teleworking and co-working places can also attract people within the knowledge economy to sparsely populated areas which is beneficial to the regional economy (Holloway, 1994). According to a survey about the effects of telecottages on the local community, the results were modestly positive. Based on subjective estimations of the significance of telecottages, the respondents rated the impact to 2.25 of 4, where 0 indicated no

significance at all and 4 represented large significance (Holloway, 1994). Telecottages had a positive effect, but they hardly revolutionised the conditions for sparsely populated areas. How successful a telecottage was depended partly on its chance to financial support. In Sweden, a political majority voted in 1989 that telecottages should aim to become commercially driven. Since many telecottages struggled to become profitable, the typical survival time of a telecottage was three years – which coincided with the end of the public funding (Holloway, 1994).

4.2.2 Social benefits

In an increasingly globalised world, both urban and rural communities have faced new challenges, but sparsely populated regions have turned out to be less resilient and therefore running higher risk of losing local income and services (Crellin, 1994). In the light of this, access to teleworking has potential to provide better social inclusion of otherwise marginalised groups and reduce social inequalities (Kanellopoulos, 2011). To do so, it is however vital to safeguard that teleworking is accessible to all – geographically, as in including rural communities, but also technically, in terms of access to necessary ICT skills (*ibid.*). On the same note, Budnitz et al. (2021) point out a well-functioning broadband as a necessity for teleworking. Since this infrastructure for a long time was neglected in rural areas, those who commuted the longest distances were the ones with poorest access to teleworking, due to the slow internet (Budnitz et al., 2021). These urban-rural differences remain in many regions globally, and to a certain degree also in Västerbotten, although the region has profiled itself as a region at the global forefront in developing the digital infrastructure (Region Västerbotten, 2014). As the most fundamental prerequisite – a well-functioning broadband – is met, teleworking has gradually appeared as a realistic option for inhabitants in sparsely populated areas. Even

from a resilient planning perspective, a stable broadband has advantages compared to physical infrastructure regarding vulnerability to disruption at extreme weather events (Budnitz et al., 2021).

Nonetheless, Budnitz et al. (2021) remarks that the opportunities to teleworking not only depend on broadband access but also depend on whether the worker has ICT skills, whether the job can be carried out from a remote workplace, and whether the worker is empowered by its employer to telework. Therefore, it is relevant to consider sociodemographic and socioeconomic characteristics when trying to estimate the usefulness of teleworking opportunities in an area (Budnitz et al., 2021).

The risk of isolation is often mentioned as a downside of teleworking. In their case study on teleworking in Australia, Simpson et al. (2003) found that their respondents had partly different views on the issue. Some of the teleworkers felt more isolated – particularly those with monotonous or challenging working tasks missed the social support from colleagues. Also, supervisors reported greater difficulties to follow how the work in the group proceeded. However, some of the teleworkers felt less isolated, since they found that teleworking enabled new social networking and empowered their rural communities. Therefore, Simpson et al. (2003) argues that the link between teleworking and isolation needs to be nuanced. For those who experience isolation, a satellite or neighbourhood telecentre may be an attractive alternative to home office work (*ibid.*).

In comparison to long-distance commuting, teleworking has merits from a wider health perspective. Commuting is associated with negative health aspects – both physical, e.g. obesity, and psychological, e.g. stress and sleep quality (Hanson, Mattisson, Björk, Östergren & Jakobsson, 2011). The mode of transport is however decisive. Active commuters, i.e. those who walk or cycle, are significantly less likely to suffer from obesity and overweight than car

commuters are (Lindström, 2008). Active commuting is equally associated to less hypertension, diabetes, and mental disorders than any other commuting mode (Tajalli & Hajbabaie, 2017). Compared to the different commuting options, home-based teleworking increases the likelihood of mental exhaustion, arguably due to the sense of isolation (*ibid.*). In sum, the workplace should preferably be located within a walkable or cyclable distance from home, for physical health reasons, but not be *at* home, for psychosocial reasons.

Co-working places are often motivated by breaking the isolation among teleworkers. They are characterised by openness, community, and diversity. These keywords are however questioned in some studies. Lorne (2020) uses a case study at a British co-working space to illustrate how the 'openness' is restricted to those who can pay for a contract, and therefore not 'open' in the sense of 'public'. The profile of 'diversity' is also a matter of some modification: among the tenants at the targeted co-working space, the majority were white middle-aged men with similar entrepreneurial status. Lorne argues that, while striving for openness, this type of social innovation results in "new geographies of exclusion, enclosure and exploitation" (Lorne, 2020, p.761). It risks becoming an "individualism-masked-as-collectivism" which is favouring entrepreneurial growth more than safeguarding public welfare (*ibid.*). In a similar vein, Gil Gordon observes that despite the benefits of attracting knowledge economy to a sparse region, it is vital to avoid 'elite-thinking' but make sure that co-working places are well rooted in the demand from the local community (Gordon, 1994, as cited in Holloway, 1994). Obviously, a fundamental criterion for becoming a co-worker is that you have a job that can be carried from distance – either it is within the previously mentioned creative branches or within the administrative field. However, many jobs are place-dependent, including positions within elderly care, retail, and education, which are among the largest occupational groups in Sweden (Statistics Sweden, 2021).

These groups of professionals do not directly benefit from a co-working place, although a diversification of the local labour market – which is one motivation of starting coworking places in sparsely populated areas – may indirectly favour the local community as a whole.

4.2.3 Environmental benefits

To optimise the relevance of future co-working spaces, it is important to consider the potential for not only social and economic but also environmental sustainability (Kojo & Nenonen, 2017). Co-working places have been promoted as an environmentally friendly job form, since it can shorten the commuting distance in relation to conventional office working, while providing shared resources in contrast to home-based teleworking (*ibid.*).

To obtain the climate benefit from less commuting, it is however important to safeguard that travels unrelated to work are not increasing as work is carried out from home. This could for instance be a result of a lack of local amenities which still retains the dependency to the core area, or the 'rebound effect' of more available time that is utilised by new activities that involve travelling (Vaddadi, Bieser, Pohl, & Kramers, 2020; Budnitz, Tranos, & Chapman, 2021; O'Brien & Aliabadi, 2020). These rebound effects could either be short-term, e.g. to need to drive separately to the food store instead of shopping on the way home; or long-term, e.g. to profit from the time saved from less commuting by travelling on vacation, or to profit from the saved money by buying a larger vehicle (O'Brien & Aliabadi, 2020). In order to minimise the need for non-work travelling, it is important to combine investments in teleworking with provision of local services. It is in mixed-used and walkable areas that teleworking has the greatest potential for reducing environmental impact from transports (Budnitz et al., 2021).

Some studies also raise concerns about the environmental impacts of ICT equipment and energy costs related to co-working places. O'Brien & Aliabadi (2020) examine the environmental effects from home-based teleworking by comparing the energy savings from transports and office heating, on the one hand, with the increased energy use at home and the potential rebound effects, on the other. The findings show that although the majority of the reviewed papers reported that telework leads to reduced energy costs and GHG emissions, the results are not consistent. The research question is complex, and the outcome depends largely on factors including energy-efficiency at the workplace and changed internet use (O'Brien & Aliabadi, 2020). Vaddadi et al. (2020), who investigated the environmental effects of teleworking from a co-working place instead of commuting to the ordinary office, came to similar conclusions. The findings indicated that co-working places does not result in energy savings per se since it depends on energy costs related to building and running the co-working place. To minimise these energy costs, it is important to maximise occupancy at the co-working place, consider the mode of transport for getting there, and make seats at the ordinary office bookable so that one worker does not 'occupy' several chairs when alternating between workplaces. The authors underline however that the study only focuses on energy costs and does not consider factors such as global warming index and air pollution (Vaddadi et al., 2020).

4.2.4 Summary of sustainability implications

Co-working, as a form of teleworking, has potential for economic, social and environmental sustainability, although the chances for success depend on how the co-working place is designed and, most importantly, how well it is adapted to the local demand and conditions. The topic also touches on several of the Agenda 2030 Sustainable Development Goals, in particular:

> *Goal 3. Ensure healthy lives and promote well-being for all at all ages*

Commuting is associated with sedentary and stress. A reduction of the time spent on travelling may lead to more time for physical activity and recreation.

> *Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*

Teleworking can lead to regional economic development by diversification of the local labour market (Simpson et al., 2003) and higher productivity (Kanellopoulos, 2011). Co-working places support entrepreneurship, creativity, and innovation (Fuzi, 2015).

> *Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*

The development of rural co-working places supports a sustainable and resilient digital infrastructure, which aims for accessibility to all (Budnitz et al., 2021; Kanellopoulos, 2011).

> *Goal 13. Take urgent action to combat climate change and its impacts*

Reducing the distance between home and work has potential to reduce the environmental impact from transports, which is a key factor in the transition to a climate neutral society (Region Västerbotten, 2013).

This section has rolled out the background to the concept of co-working places, how they are defined in the literature and what implications they may have for attaining targets related to sustainable development. The next section will present the methodology of this study.

5. Methodology

5.1 Methodology

The research strategy applied here was a qualitative case study. Both qualitative and quantitative approaches have potential to address the aim, but they would answer different questions. Since the study aims to explore the potential for something that is not (yet) existing – i.e. co-working places in sparsely populated areas – the investigation takes a rather speculative form, which is not easily captured in pre-made surveys. An interview situation has better opportunities for the respondent to develop a more detailed and complex answer. This became clear during the interviews, as the respondents in several cases had experiences and inputs that completely changed the direction of the interview. The qualitative methodology enabled the study to maintain an open approach, which did not paralyse the initial research questions. Aiming to be an exploratory study, this openness was an advantage.

Although attitudes to co-working places also could be examined quantitatively through a survey, it would generate a less nuanced picture that risks missing the underlying explanations to prevailing attitudes. Quantitative studies have the benefit of generating results that could be statistically tested and more easily claiming generalisability. Certainly, a mixed methods approach could provide a combination of a quantitative survey, giving the broad picture, and qualitative interviews, for a deeper understanding. However, to ensure rigour in quantitative studies, extensive data collection is required, which could not be guaranteed within the limited time frame of this study.

A qualitative case study focusses on a particular case, but when done rigorously, it can be transferable to other cases. Trustworthiness depends on carefully selected cases, transparency, and well-documented stages throughout the research process (Stratford & Bradshaw, 2016, 127). Transferability requires

that the conditions, under which the theory is applicable to a specific case, are well-defined (Baxter, 2016, 143). To ensure good rigour in this study, my strategies have been to discuss reflections and interpretations at all stages of the research process with my supervisors, both at the university and at Region Västerbotten, and to maintain a self-reflexive approach to my role as researcher. Therefore, I will devote a few lines to positioning myself in relation to my research.

My position as researcher

My interest in the topic – i.e. co-working places in sparsely populated areas – originates from two current societal issues: 1) what can shrinking municipalities do to counter the urbanisation trend, that gradually erodes their chances to prosperity, or even survival? 2) how can decentralisation occur in parallel with a region's efforts to reduce GHG emissions from road transports? If these two questions were the underlying drivers to my research, there were two other factors that actively formed the specific research questions. First, the growing trend of co-working places in cities has increasingly become visible in both public and private discourses. Second, the Covid-19 pandemic has imposed a transition to teleworking in many organisations. The new experiences have triggered an enthusiastic debate on the potential for teleworking in a post-pandemic Sweden.

Taking a realist ontological standpoint and sharing the subjectivist epistemological view, I assume reality as collectively shared but never objectively observable for the individual. The researcher acquires knowledge from her subjective viewpoint, and it is only this partial objectivity – or, as Haraway (1988) puts it, "situated knowledge" – that I as researcher can claim. Furthermore, knowledge is always formed within a particular situation and will therefore inevitably be influenced by the actors in the research process. In interview studies, the researcher will be part of the knowledge-producing

process by her way of selecting participants, asking questions, interpreting answers, and so forth. In addition to this subjective influence from me as researcher, this study was performed in collaboration with an external part, which obviously also plays a role during the research process. Although unavoidable, this influence has implications on the transferability of the study. Nevertheless, transparency is a central part of a rigorous qualitative study which aims to be relevant beyond the particular case.

5.2 Methods

5.2.1 Before the interviews: sampling of participants

The research material originates from nine semi-structured interviews that took place during February and March 2021. The participants were selected through criterion sampling, since the study specifically targeted representatives from organisations in Västerbotten. Three participants were employed at inland municipalities and belonged to the department for regional development, enterprise and industrial matters. Three respondents belonged to medium- to large-sized enterprises in Västerbotten, where they worked at the department for human resources. These six interviews were planned at an initial stage of the study, but along the road, I came across additional perspectives that deserved further attention. Therefore, three more interviewees were contacted. One participant was employed at Umeå municipality and had experience from organising co-working places in small communities. One respondent belonged to a co-working chain with several hubs in northern Sweden. Finally, one participant worked for Region Västerbotten within a small-scale project aiming to plan for the "future workplace" when returning from the pandemic. All nine participants were contacted by email, and before the interview the preliminary interview schedule was sent to them (see Appendix). Central focus areas were previous experiences of teleworking and co-working places, attitudes to these

alternative work modes and reflections on its future potential for the region as well as the organisation. In addition to the nine persons that agreed to participate in the study, the interview request was sent to another two persons, whereof one declined and one did not reply.

5.2.2 During the interviews

Although the interview schedule constituted the initial framework, the conversations were allowed to mostly focus on a specific question or to take new turns to concern unpredicted aspects. The length of the interviews varied between 30-80 minutes. They took place online through the software Zoom and they were either recorded under the participants' approval, or summarised by notetaking. The interviews were held in Swedish, which has possible implications for the analysis. The term "co-working places" has no perfect equivalent when translated to Swedish. Therefore, the terminology alternated between the terms "arbetshubb", "kontorshubb", "kontorshotell", "co-working space" and "co-workingplats", depending on the preference of the informant. There is a risk that an inconsistent use of terms may lead to that participants understand the concepts differently and, thus, respond differently. Consequently, it was important to understand what kind of co-working place the informant was visualising, rather than to only focus on the specific term.

5.2.3 Ethical considerations

According to the General Data Protection Regulation (GDPR), all personal data linked to the interviews are treated confidentially and only saved as long as required for ensuring research quality (Umeå University, 2021). This applies to recordings as well as contact details. The participants were all introduced to the study and informed about the interview mode in advance. To further ensure

confidentiality, none of the participants are mentioned by name or title in the paper.

The study was undertaken in collaboration with Region Västerbotten and their project *Hållbara Arbets- och Tjänsteresor*. Working with external supervisors expanded my interpretative community, as it offered me additional discussion partners. Furthermore, it assisted me in getting in contact with interview participants. However, despite their role as external part, Region Västerbotten did not request the study, nor did they dictate the content in any sense.

5.2.4 After the interviews: processing information and presenting results

Insights from the early interviews aroused interest in adding more perspectives to the study. After all interviews, non-verbatim transcriptions of the recordings were made. The transcriptions and the interview notes were compiled, structured according to themes, and compared to previous studies and theory. The main themes discovered during this process form the underlying structure of the analysis section (Chapter 7). Quotations from the interviews were translated to English, striving for a close translation while allowing for differences in linguistic expressions.

6. Setting the scene

In this section, I will locate the case in time and space since the research is affected not only by the regional characteristics but also by the time and the societal situation in which it was carried out.

6.1 The case study: in the county of Västerbotten

Västerbotten county is located in northern Sweden (see Figure 2) and ranges from the coastland in east to the mountain region by the Norwegian border. The county is equally a part of Sápmi. The area is 58,900 km^2, which represent 14 percent of the national area, while the population size is 273,000 inhabitants, corresponding to 2.6 percent of the Swedish population (Statistics Sweden, 2021). As a region, Västerbotten faces unruptured population growth since the early 2000s, although the intraregional differences are substantial (see Figure 3).

The 15 municipalities are Nordmaling, Bjurholm, Vindeln, Robertsfors, Norsjö, Malå, Storuman, Sorsele, Dorotea, Vännäs, Vilhelmina, Åsele, Umeå, Lycksele and Skellefteå. Umeå and Skellefteå, both located by the coast, are the only cities with more than 50,000 inhabitants. The population profile of Västerbotten is characterised by a regional population largely concentrated to the coastland, while the inland municipalities are sparsely inhabited. In general, the population trends indicate that the unequal distribution is growing: Umeå, Skellefteå and some of the municipalities within convenient commuting distance, e.g. Vännäs, have growth, whereas most of the inland municipalities have faced shrinking populations over the last two decades (Statistics Sweden, 2021).

Railways for passenger transport run through Nordmaling, Umeå, Vännäs, Vindeln, Lycksele and Norsjö. Inlandsbanan, between Mora and Gällivare, pass through Dorotea, Vilhelmina, Storuman and Sorsele, but it is mainly used for seasonal tourism and for cargo transports. Beside these rail lines, intraregional transports are directed to the roads, e.g. the three European routes E4, E12 and

E45. All municipalities have intra- and intermunicipal bus lines. In some of the inland municipalities, this is complemented by a pre-bookable transport service (in Swedish: "ringbil"). For transports to other regions, there are airports in five municipalities: Storuman, Vilhelmina, Umeå, Lycksele and Skellefteå.
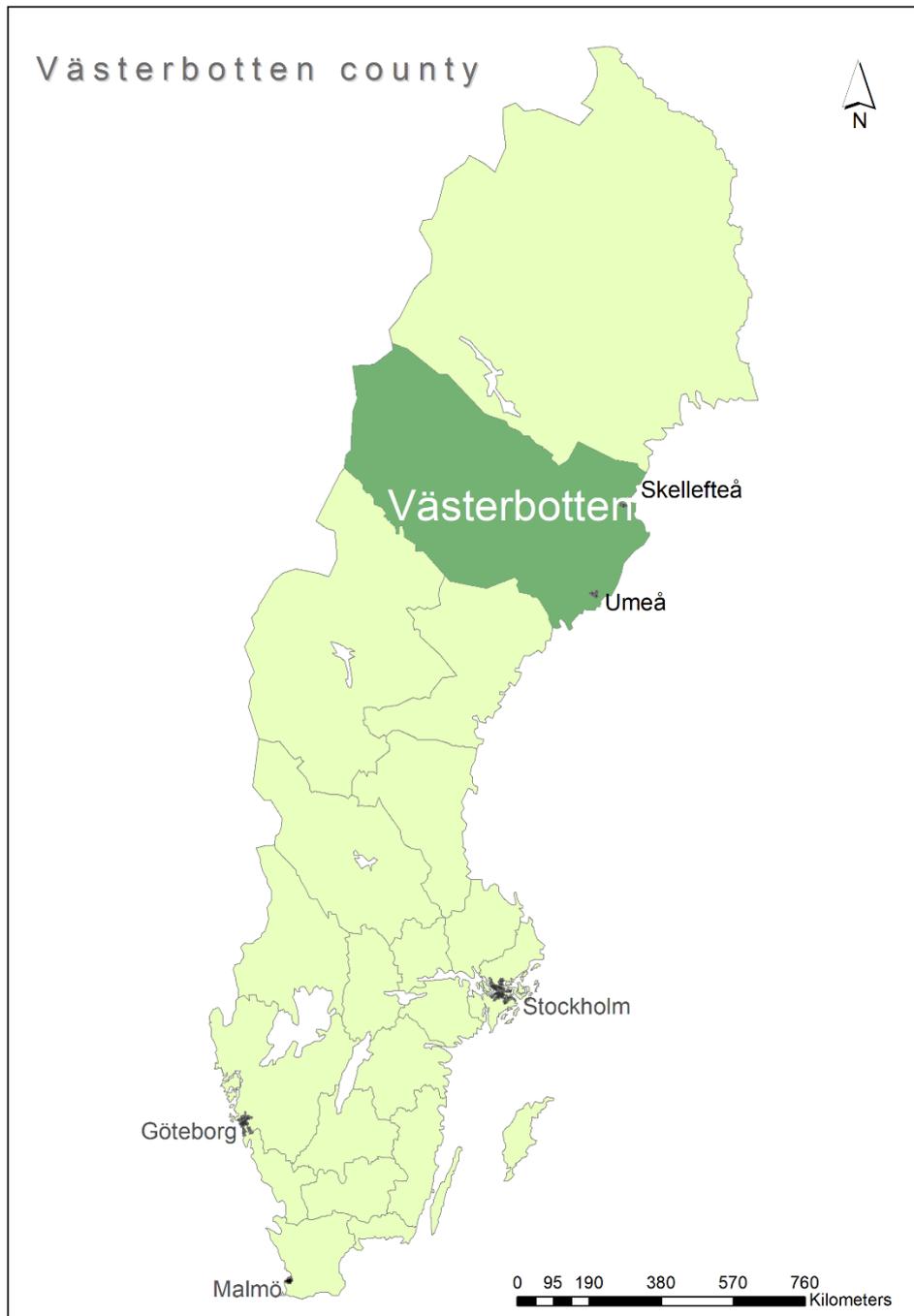

Figure 2: The location of Västerbotten county in Sweden.
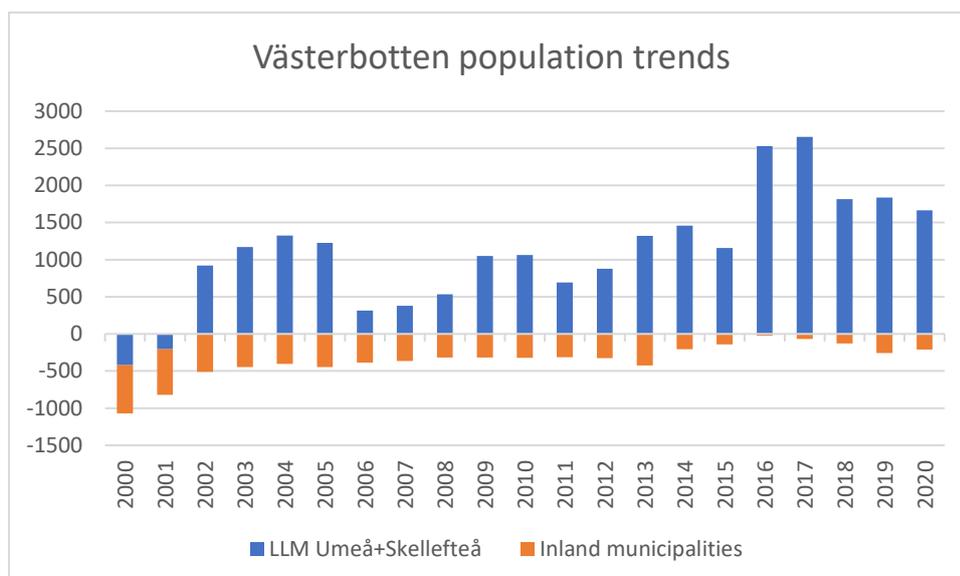
Figure 3: Population growth (inhabitants) per year in Västerbotten county 2000-2020. The blue bars indicating the population development in Umeå, Skellefteå and the adjacent municipalities that belong to the local labour market (LLM) of the cities. The orange bars representing the population development in the inland municipalities. (Data from Statistics Sweden, 2021).

The municipalities that have most inhabitants that commute to other regions are Vännäs and Nordmaling, where 52 percent and 42 percent respectively of the working population commuted to another region (Statistics Sweden, 2021). The short distance to the growing city of Umeå and the commuting facilities are likely reasons to the high percentage of commuters. Those who commute the least to other municipalities are the inhabitants of Umeå and Skellefteå – hardly surprising given the larger labour markets of the cities. Figure 4 displays the functional division of local labour markets. In a substantial part of the Västerbotten inland, the local labour markets are restricted to the municipality borders. However, the local labour market around Umeå comprises six municipalities. Compared to some of the other municipalities in Västerbotten, these six are geographically small. Yet, more importantly, this more inclusive local labour market area could be seen as a manifestation of the strong labour market in Umeå and the value of well-developed commuting facilities. The labour market of the inland municipalities is typically characterised by few large

employers and many small-scale enterprises, within branches such as forestry, industry, tourism, service, and retail. The number of firms dealing with business services and other place-independent activities is low, in comparison with the more diverse labour markets of Umeå and Skellefteå.
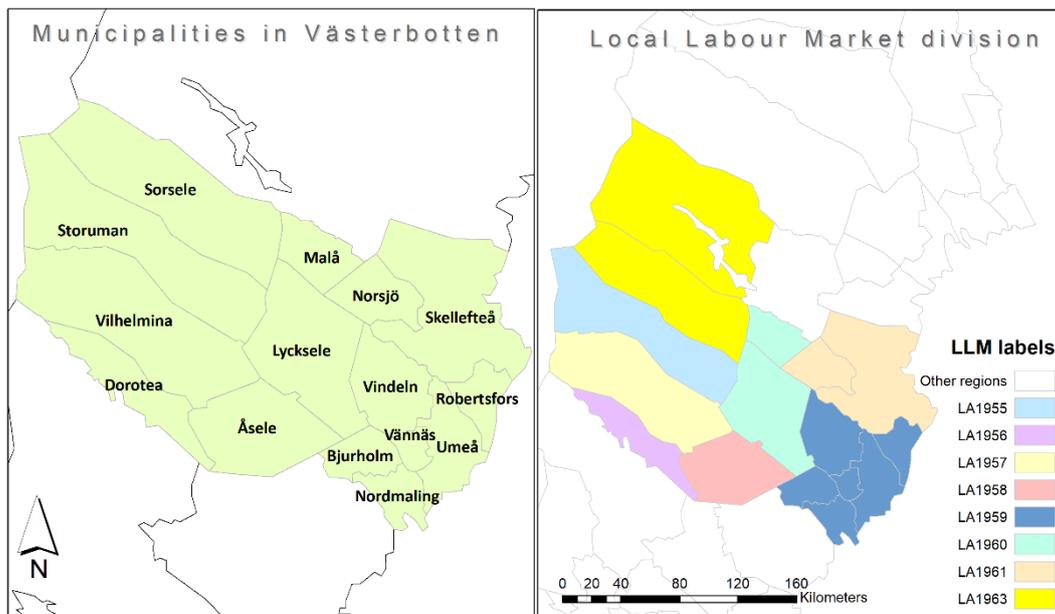
Figure 4: To the left, the municipalities of Västerbotten. To the right, the division of Local Labour Market areas in Västerbotten (Statistics Sweden, 2021), symbolised by different colours. NB: Sorsele municipality shares local labour market with Arvidsjaur municipality (Norbotten county).

6.2 The case study: in the time of a pandemic

The case was also affected by the prevailing societal situation during the time of the study. The research was carried out January-May 2021, which was in the middle of the Covid-19 pandemic. As part of the strategy to limit the spread of infection, the Swedish government encouraged all citizens with the opportunity to work from home to do so. This led to an extensive increase of teleworkers in the country. In January 2021, more than 4 of 10 Swedes worked from home

(Ekot, 2021). In media, the new experiences of teleworking have generated widespread discussions concerning what a new, post-pandemic 'normality' will look like, e.g. speculation about a future with more flexible work modes (*Det nya normala – arbetssättet och kontoret*, 2020; Ohlson, 2020; Gimling Shaftoe, 2020; Västsvenska Handelskammaren, 2020). Many testify that although digitalisation has been ongoing for a long time, the pandemic has accelerated the process (Bennewitz, 2020; Erlingson, 2020; Lindsten, 2020; Olin, 2020). The experiences from the pandemic have affected the general mindset to new work solutions, and therefore, the influence of Covid-19 on this case study is relevant to mention.

7. Analysis

In this chapter, the results from the interviews are analysed in light of the theoretical framework and previous studies. The chapter is divided into two main sections, according to central themes that were discovered when processing the interviews, and a third summarising section. Section 7.1 addresses teleworking in general – regardless of whether it is from home or a hub – and brings up economic, social and environmental effects of staying local. It also discusses the impact of the pandemic on working and flexibility, and some organisational challenges linked to teleworking. Section 7.2 focuses on teleworking from co-working places specifically, when discussing their potential contributions to the individual, the firm, and the community. It also reflects on what kind of co-working place the respondents visualise for their respective municipality or organisation, and how the preferable type of co-working place is linked to the main driver to start one. Finally, section 7.3 gives a brief summary of the two preceding sections.

7.1 Teleworking from home or a hub

This first section is divided into four subsections, based on themes from the interviews. The first one addresses the three dimensions of sustainability, the second part illuminates the connection to the time of the pandemic, the third one concerns the issue of flexibility, and the fourth subsection brings up some organisational challenges linked to teleworking.

7.1.1 Sustainability

According to the previous studies presented in chapter 4, teleworking has potential to promote economic, social and environmental sustainability. These themes were recurrently brought up in the interviews.

Economic benefits

From an economic point of view, teleworking is beneficial for the individual since the teleworker does not need to commute to a distant workplace. This is mentioned as the main gain of the newly opened co-working place in Umeå municipality, which was started as a temporal solution during the pandemic but is now striving for becoming permanent. Although the hub was not located in the sparsely populated areas, it was relevant for the study since it exemplifies what a co-working place can look like outside the urban core. The initiator motivated the hub by claiming that the teleworker saves both time and money when staying local instead of commuting to Umeå. The same thought was pronounced by the co-working chain with several offices in northern Sweden: their business model enabled the users to minimise the time spent on the road for getting to and from work. According to the representative from Region Västerbotten, two important advantages with teleworking were the time savings from not commuting and the chance to stay in sparsely populated areas.

However, as the co-working chain representative remarked, the time savings from less commuting do not only benefit the individual teleworker but may also favour the firm since the travelling time is sometimes included in the working hours. Even for those who can utilise the commuting for work-related tasks, the quality of work is better when carried out from a local co-working place or from home. Furthermore, a respondent from one of the firms observed that the current period of teleworking during the pandemic has shown that the productivity of the employees has not declined, despite the sudden move to the home office.

A permanent shift to more teleworking can favour organisations in more ways. Firstly, the respondent from Region Västerbotten highlighted that the current office structure, which is usually divided by organisation rather than by process, is not very efficient, since the colleagues that you share room with are often working with something completely different from you. Thus, your closest colleagues in a professional sense are not close in a spatial sense. Although working from home or a local co-working place might not bring you closer to the people in your process, it will not bring you farther away either. Secondly, more teleworking can eventually lead to that the number of fixed desks at the office could be reduced, resulting in lower costs for the organisation. This aspect was, among others, raised by a respondent from one of the firms, who saw teleworking as having potential for cutbacks in office space. A third aspect concerns the attractiveness of the organisation. Two firms mentioned that firms that give opportunities for teleworking will be more attractive and get recruitment benefits. As one of them put it:

> "All organisations have different prerequisites, but for us the pandemic…it wasn't good of course, but we needed to start thinking in new ways to get the chance to become the attractive employer that we want to be." (Large-sized firm, Västerbotten)

In a similar vein, the other firm observed that opportunities to teleworking might become increasingly important, as the competition for labour hardens:

> "If I'll make a guess: with all this competition in our branch, I believe that this [teleworking] might make it possible to employ people from distance who can work mostly from home and then only occasionally travel to the office, just to keep the group together". (Large-sized firm, Västerbotten)

Most of the respondents believed that teleworking is economically beneficial to sparsely populated areas. All representatives from the municipalities saw teleworking as a strategy to make it easier for their inhabitants to remain and to

attract new citizens, as well as new skills which contributes to diversifying the labour market. One of them, as representing a municipality with strong hospitality industry, pointed out that better conditions for teleworking could prolong the tourist seasons. Therefore, the local community could profit from teleworking even if people did not choose to permanently settle in the municipality.

Although the municipalities believed that the better chances to live and work at the same place were positive for the local development, the respondents did not see the current commuting as a big problem for their municipalities. This was largely due to the fact that the majority of the relatively few inter-municipal commuters were outbound commuters, which means that the municipality got the tax revenue from a wage that the commuter gained elsewhere. Consequently, as one respondent remarked, it is better to have outbound than inbound commuters from the perspective of the local economy.

Some of the firms shared the belief that more teleworking would favour the local community:

> "Obviously, the sparsely populated areas could probably benefit from 'removing the distance' so that the inhabitants don't need to move because of the labour market." (Large-sized firm, Västerbotten)

Other organisations did not have a clear opinion, since the perspective of the local community was not something they discussed within the organisation. The initiator of the small-scale co-working place in Umeå municipality doubted that the local community would be significantly affected if more inhabitants stayed local instead of commuting: the village in question was located at a sufficiently convenient commuting distance to Umeå to be attractive anyway. Therefore, the co-working place was motivated by favouring the individual rather than the local community. Nevertheless, villages that were not linked to Umeå by a well-developed public transport network could potentially benefit as community from

having a co-working place which contributes to retaining the population over the working day, which would lead to community externalities in terms of more local consumption of goods and services.

Social benefits

Apart from the different levels of economic gains, the respondents agreed that teleworking could strengthen social sustainability in various ways. Most importantly, it has potential to reduce urban-rural inequalities, since it enhances the opportunities to both life and work in peripheral areas in northern Sweden. Several respondents emphasised the importance of facilitating for a working life outside the core area – whether it is Västerbotten in relation to southern Sweden or the inland municipalities in relation to Umeå. Consequently, teleworking can promote a more inclusive regional development. Other social aspects that were brought up in the interviews concerned the benefits of not commuting. A respondent from one of the firms mentioned the health gains, which could be obtained if car travels were replaced by walking or cycling. Furthermore, less commuting leads to more time for private life. This thought was repeated by another respondent who stated that many employees at her firm found it easier to manage their lives when working from home during the pandemic. The respondent added however:

> "When many say that it's easier to solve the 'life puzzle', my fear is that the more flexible working hours push people of a certain sex to undertake more of the household duties and that this is in fact what makes them feel that they better manage the 'life puzzle'." (Large-sized firm, Västerbotten)

Environmental benefits

In addition to the economic and social potential of teleworking, environmental benefits were in some respects raised in the interviews. One firm had noticed

that the levels of GHG emissions from work-related travels had decreased substantially as teleworking had become the new 'normality' during the pandemic. The measurements only concerned business travels and freight transports – i.e. not commuting – but since practically all staff with opportunity to teleworking had worked from home during this period, the GHG emissions from commuting had probably declined too. Another firm predicted that the number of business trips will not return to the same levels as before the pandemic, since the digital development with increasingly good chances to distance meetings has made many trips superfluous.

Another recurrent issue concerns the efficiency of the regular office. Two respondents explained that they planned to investigate the need of fixed desks at the office when going back to 'normality', since they expected that many employees would prefer to continue to telework to some extent. A system with flexible desks could make the utilisation more effective. One of the respondents also raised some concerns about whether new co-working places could lead to a less efficient use of existing premises. If every employee has one fixed desk at the regular office and simultaneously one fixed desk at a co-working place, then a substantial part of the office surface would be empty half of the time. To tackle this issue, the small-scale co-working place in Umeå municipality had chosen to only offer flexible desks, following the clean desk principle. Furthermore, all respondents that had considered to plan for, or already had initiated, a co-working place agreed that such a place should make use of already existing premises. Although the reasons to not build something new were mainly economic, this is also the most environmentally friendly option.

7.1.2 The time and the pandemic

The frequent references to "the special time we live in" clearly showed that the ongoing pandemic has influenced the interview answers. Most respondents

mentioned that the pandemic had accelerated the digital development in their organisations and gave a valuable experience of how teleworking can be organised. One firm added that the pandemic had been a breakthrough for the firm's new travel policy for business trips. The initiator to the small-scale co-working place in Umeå municipality stated that the pandemic had catalysed an idea that they had had for a long time. One respondent commented this by saying that crises often give rise to a 'new normality'. The ideas that teleworking can enable people to work from anywhere were popular during the 90s, but a large-scale revolution for teleworking never materialised at that time. It might be possible, the respondent argued, that this crisis which has imposed a trial period of teleworking on the large organisations will manage to push through the change that has previously not been feasible.

Although the pandemic has favoured the development of more teleworking, it has had a negative effect on the co-working industry. The respondent from the co-working chain explained that their firm is particularly affected by disruptions, since they only offer short-term contracts which the members could easily quit:

> "At the same time, the short contracts – well that's the point with our concept, because that's how you lower the threshold and reduce the risks that you as individual can feel when you're about to start a business. And there are already lots of thresholds along the road." (Co-working chain, Norrland)

Despite the tough situation during the pandemic, the representative from the co-working chain expressed some hope for an even greater demand for co-working places after the pandemic, when more people have got experience from teleworking. In a similar vein, a respondent from one of the municipalities believed that the need for human meetings may explode when the restrictions are removed.

Some respondents remarked that there had been trends towards more teleworking even before the pandemic. A respondent from one of the municipalities mentioned that the digitalisation process had for a long time been used as a strategy to improve the opportunities for the residents to work, study and spend their leisure time within the inland municipality. Therefore, finding new digital solutions and developing the broadband had been prioritised areas. Another identified trend was the increasing interest for local food and small-scale production. One respondent hoped that this interest for local markets would contribute to increasing the overall attractiveness of the inland municipalities. A third trend that was mentioned in the interviews concerned the perceived insecurity in big cities, prompting a growing number of people to desire a life outside the urban areas. One respondent believed that there might be some competition between the municipalities in rural and sparse areas for attracting emigrating city dwellers.

7.1.3 Flexibility and variation

One frequently repeated word in the interviews was "flexibility". The respondents from the organisations shared the opinion that the new normality after the pandemic will imply more flexible solutions. The optimal arrangement would probably be a "hybrid solution", between the traditional office-based normality and the current normality restricted to home, according to the organisations. For several organisations, teleworking was never an option previously, and therefore, the pandemic restrictions meant an enormous shift. As one firm put it:

> "This is a huge transition for the firm, because we have previously worked on the basis that *everyone* should *always* be at the office. If you're not, you should probably take out vacation, more or less." (Large-sized firm, Västerbotten)

Although the respondents admitted that this period of teleworking has brought some new challenges to both employers and employees, they maintained that their overall impression was that the teleworking had worked out well for all parts. One of the respondents explained:

> "For the employees, it is of course a transition to be home, but I hear from them that it works well. The big question right now is rather: 'we don't need to go back to how it was before, do we?'" (Large-sized firm, Västerbotten)

While the employers estimated that many of their co-workers appreciate to work from home to a greater extent, one of them observed that the current situation is actually as inflexible as the previous one:

> "Many of the employees feel that they are very tired of being home and that they don't have the flexibility of going to work right now. It's like a reversed inflexibility: 'I'm not allowed to go to work'." (Large-sized firm, Västerbotten).

Consequently, a post-pandemic situation would preferably allow for real flexibility, where the employees are free to alternate between the office and teleworking. One respondent observed however that some regulations of the flexibility may, for logistical reasons, be required. For example, this could be that it should be mandatory to be at the office on some specific weekdays while location was optional on the remaining days.

Most respondents thought that this variation between locations was desirable. A representative from one of the municipalities remarked that this could be an argument for initiating a co-working place, since self-employed and freelancers might also be interested in variation. Although flexible in one sense, those who do not have an ordinary office and who live in a sparse area may otherwise have limited opportunities to alternate between different workplaces. Other

municipalities put into question whether their inhabitants, with opportunity to telework, would prefer to work from a co-working place over working from home or their cabin. As one of them explained:

> "Then of course, it's possible that an individual from Stockholm who loves the mountains is not interested in renting an office desk here, because what he or she wants is the flexibility to roam between these different worlds." (Municipality, Västerbotten).

The co-working places could respond to this issue in different ways. At the small-scale co-working place in Umeå municipality, the hub is thought to be a complement to the ordinary office and the home office, rather than being the main workplace. Therefore, the desks are only bookable on day-by-day basis. By contrast, the co-working chain has taken height for the varying requests for flexibility and variation by offering different types of contracts to suit all needs.

7.1.4 Organisational challenges to teleworking

In the interviews, the respondents recurrently referred to various policies within the organisations that impeded the development of teleworking. The respondents from the firms testified that the firm policies did not allow the employees to telework before the pandemic, due to the working methods, the firm culture and the challenges related to the work environment legislation. These firm policies were largely based on confidence, values and norms, according to a respondent from one organisation.

Many respondents testified to a widespread belief that teleworking would threaten the firm culture. However, they argued, this would not necessarily be the case if only the working methods and the leadership were adapted to such a situation. As one of them put it:

> "Since the way in which we have worked implies that we meet each other very much, this has created a firm culture. But that doesn't mean that we would get a crazy culture just because people worked more from for instance co-working places, I don't think so. […] We could get the same culture but with other means." (Large-sized firm, Västerbotten)

Some respondents mentioned that teleworking may be challenging for the managers which are supposed to follow up how the work is going and how the employees are doing. A respondent from one of the firms remarked that this does not need to be a problem either – it is mostly a question of leadership:

> "If you as a boss regularly follow up the work of your employees, have regular conversations with them – as you should do under normal circumstances – then you have a good control as a manager." (Large-sized firm, Västerbotten)

Another obstacle to teleworking within organisations is the legislation concerning work environment and insurance issues. A respondent from one of the municipalities believed that as long as the employer is responsible for guaranteeing the quality of chair and lighting for all employees, teleworking will be complicated for organisations. The same applies to the insurance issue. These concerns were familiar to the co-working chain: the respondent explained that questions concerning work environment and insurance were always discussed when employees from organisations were about to sign membership. These questions were usually handled in dialogue between the co-working place and the human resources department at the organisation before the contract was signed. Concerning insurances, it is still up to each organisation to insure their employees, but the co-working chain also had some complementary insurances. In this sense, it might be easier to solve issues related to work environment and insurances when teleworking from a co-working place compared to teleworking from home.

To date, the users of co-working places have mainly been self-employed and freelancers, rather than employees at large organisations. The co-working chain had however noticed that the share of employees tended to be greater in hubs located in smaller towns than in larger cities. Furthermore, she thought that co-working places should be an attractive option for firm employees – especially for newly established firms which could take advantage of the local knowledge and network that a co-working place provides. Since many of the anticipated challenges related to teleworking have been overcome during the 'trial period' of the pandemic, it is possible that employees at large organisations may become more frequent users of co-working places in the coming years.

7.2 Teleworking from co-working places

The second section of this chapter focuses on co-working places specifically. Like the previous section, it is divided into four subsections. The first one summarises the general attitudes of the firms regarding co-working places. The second part presents the current plans linked to co-working places among the municipalities and some other respondents. The third part addresses some implications of co-working places for the individual and the firm, and the final part concerns the implications for the local community.

7.2.1 General attitudes to co-working places

The municipalities that participated in the interviews were all familiar with the concept of co-working places and had to varying extent reflected on the benefits of providing such a place in their respective municipality. All of them mentioned the co-working chain in northern Sweden, which was later interviewed too, as a source of inspiration to their internal discussions. The respondents from the firms, on the other hand, all testified that co-working places had not been brought up for discussion within their firm. They would

discuss this issue when, and if, the demand arises. Therefore, none of them could give an account of their firm's position, but some respondents offered personal reflections on co-working places as a potential option for their employees. Two of them noted that it did not make a big difference for the firm if the employees would telework from home or telework from a hub – the main question for them was whether the employees telework or not. One respondent was convinced that the firm would have the financial capacity to pay the contract to a co-working place on an employee's behalf in case it would be requested. Another respondent explained that although they had not raised the question internally, the firm tended to solve situations when they appear – consequently, if they want to recruit a person with specific demands, e.g. teleworking from a co-working place, they would find solutions.

7.2.2 Concrete plans for co-working places and their respective design

Although the respondents from the municipalities were familiar with the concept of co-working, they differed in how far they had come in visualising what such a place would look like if they decided to start one.

One municipality had made up concrete plans to transform an empty premise to a co-working place. The property was centrally located in the area, with many passers-by, and linked to an existing hotel and restaurant which had traditionally been a meeting point for the local population. In the initial phase, the idea was to provide a free access area with internet connection but without further equipment since the users were expected to use their own laptops anyway. The co-working place would be publicly financed by the municipality and by various economic support dedicated to sparsely populated areas. Eventually, a local entrepreneur could take over the hub and develop it in line with the users' demand. To attain economic sustainability for a private owner, it might be necessary to later introduce a small fee – especially if they would choose to

combine the free access area with equipped desks and offices. The municipality also reflected on the possibility to merge other societal functions, e.g. tourist information, with the co-working place. Another idea was that the municipality, which currently offers some business support and consultancy to local entrepreneurs, could have some officials physically present at the co-working place a few days per week, in order to become more available. The main purpose of the co-working place would be to provide a social meeting place, but also to facilitate for new collaborations and innovative ideas. The municipality believed that self-employed and small-scale entrepreneurs would be the main group of users, although the hub would be open for anyone with opportunity to telework. The reason to this focus was partly that they would use the economic support intended to promote the local business sector when financing the hub, partly that most employees at larger organisations already have offices and might be less in need of an alternative workplace. The next step of the process was to investigate the interest and to get political permission to proceed.

Another municipality did not have any concrete plans to start a co-working place in their area, but the respondent pointed out that the question would be discussed internally in the municipality. There were suitable premises at several places in the municipality, both public and private properties, which could be transformed to co-working places. The municipality had been glancing at the co-working chain for a while and taken some inspiration from that. However, as the respondent remarked, if they decided to start a co-working place in the municipality, they needed to find a concept that worked for their particular conditions. Probably, it would be necessary to run it as a public-private partnership (PPP), where the municipality and the business sector helped each other to spread the risks. The main driver to start a co-working place would be to attract new skills to the area and to better take advantage of existing skills among people who already telework from the municipality in periods. Before

developing the ideas further, the municipality observed that they needed to check if there was an interest for such a project among the citizens.

A third municipality had occasionally reflected on the possibility to start a co-working place, but they hesitated since they did not know whether the inhabitants would use it or not. Like the other municipalities, the respondent saw the co-working chain as a source of inspiration but stressed the importance of taking the local conditions of the municipality into account. The ideal co-working place would probably be located in an existing building with additional services, e.g. a hotel or a ski resort, in a beautiful natural environment. It would offer short contracts and aim to attract both tourists and cabin owners. The target group would mainly be self-employed and small-scale entrepreneurs, since this group is growing, both in their municipality and in the society in general. However, the respondent argued that the way in which large organisations handle the issue of flexibility after the pandemic may become influential for the general development of teleworking from sparse areas:

> "Depending on whether they [the large organisations] see it like business-as-usual, when everyone should return to the office, or if they do like Google and announce that their employees are free to work from wherever they like – if large actors begin to act in this way, it will probably start to trickle down, but that doesn't happen over a night." (Municipality, Västerbotten

The respondent believed that the hub could either be privately run or publicly run, but the latter option presupposed that the co-working place was seen as a commercial service which was economically supported by the municipality. However, due to the risk of breaking the competition laws, a privately run co-working place was the preferable solution. The municipality could still support the development of co-working places by encouraging entrepreneurial initiatives and investing in better broadband in the area. The main benefit of the co-

working place would be to provide both a social and a creative environment, where people can meet, share ideas and find new collaborations. However, before any further steps would be taken in the process, the municipality needed to carry out some market research among local residents and cabin owners.

The respondent from Region Västerbotten was also interested in the co-working concept when reflecting on alternatives for the "future workplace" project. Yet before considering a co-working place, they needed to investigate whether there was any interest for more teleworking or if the employees preferred to return to the pre-pandemic normality with office-based working days. If the former option was preferred, the next step would be to explore whether the employees needed a physical place, e.g. a co-working place, or if the permission to telework from anywhere would be enough. In case there were a demand for co-working places, a third step would be to find out whether its function as workplace or its function as innovation place should be emphasised, and whether a 'traditional co-working space' or a less conventional type of co-working place would be the most suitable form. The respondent stressed the importance of matching the design of such a co-working place with the need of the employees from a large organisation. These needs may for instance include access to small, well-isolated meeting rooms for distance meetings.

The respondent from the co-working chain did not have any concrete plans to expand their business to sparsely populated areas at the moment, but they were open for such a development in the long run. Currently, their concept included short-term contracts at different costs depending on content – ranging from community membership to fully equipped offices. Although the form of the hub varied from town to town in order to match the local conditions, all hubs had a community manager who was responsible for social and practical issues. All hubs were located at a central position in the towns with access to public transport connections. If they started a hub in a sparse area, the co-working

chain would consider collaborating with other local actors, either public or private. One idea was to co-locate with a local 'Folkets hus', where the co-working chain could profit from subsidised premises in exchange for filling it with surplus value for the community. If it would be too costly to keep a community manager at full-time, they could find a solution where this person would only be present some days per week. The respondent explained that it would be easier to manage a non-profit hub as a chain, since they had income from more profitable locations elsewhere.

The respondent from the small-scale co-working place in Umeå municipality told that the current plan was to make the hub permanent after the trial period during the pandemic. Furthermore, they would try to implement the idea in other villages in Umeå municipality too. The hub was centrally located in the village, in a publicly owned premise, and open for municipal employees. The aim was to provide the workplace function, rather than being a meeting place, and it contained fully equipped offices with access to a printer and a lunchroom. The next step in making the hub permanent was to get political permission, make some minor renovations, and to solve some practical details about booking and maintenance.

7.2.3 Co-working places: Implications for the individual and the firm

Despite not having formulated any official approach to co-working places, the firm representatives could see some advantages with teleworking from a hub compared to teleworking from home. Several observed that a co-working place might reduce the sense of isolation, since it provides the employee with new "colleagues", albeit from other organisations. One respondent believed that a workplace where you have people around you has potential to reduce psychosocial problems linked to isolation. She remarked however that people

have different social needs and that not everybody perceives isolation as a problem.

Reducing the social isolation was also mentioned by respondents from the municipalities as one of the advantages with co-working places compared to home-based teleworking. One respondent stated that everyone probably wants to be part of a context sometimes. Other municipalities suggested that a co-working place could function as a natural meeting place for the locals. According to the co-working chain, this combination of workplace and meeting place is a central part of the co-working concept. The idea is to provide a community where the members can inspire and support each other, collaborate, and get a wider social network.

Apart from reducing the sense of loneliness, the respondent from the co-working chain argued that co-working places can help the individual to form routines linked to the working day, which could otherwise be a challenge when teleworking from home. One of the respondents from the firms recognised these difficulties from the time of the pandemic:

> "The structure of the day disappears since you don't need to leave the house but can work from where you sleep. And then it's harder to know when to finish work and when to have lunch." (Large-sized firm, Västerbotten)

While social interaction and clearer routines exemplify how the individuals can profit from co-working places, other aspects that were mentioned in the interviews concerned how co-working places could favour the firms. One respondent from the municipalities believed that this type of meeting place has potential to generate new collaborations and innovative ideas. Another respondent pointed out the creative environment of co-working places as particularly desirable. Collaboration and networking were also important aspects, but she did not believe that her municipality needed a specific site for

networking, since most of the local entrepreneurs already had the necessary networks. On the other hand, the physical proximity to other entrepreneurs might be positive for entrepreneurial newcomers to the municipality.

The respondents from the organisations agreed that there are potential firm benefits linked to co-working. One respondent explained that, although they had not discussed co-working places as such, her firm was in general in favour of more human meetings, networking and sharing with others. Personally, she believed that the proximity to others and the potential knowledge spillovers that this could generate, could be positive for the firm. Another respondent expressed a similar standpoint, but added that the usefulness of knowledge spillovers depends on the type of knowledge:

> "In general terms, we have a very positive attitude to gaining knowledge from others and to share our knowledge with others – to have cross-border knowledge transfers so that this is not only occurring within the firm. […] But I'm also working with skills and learning, and then I think: you learn a lot from others, absolutely, but do you learn the right things? Will you learn things that you need in your work? It's probably very important to look at this aspect, because you will certainly get a general learning which can be positive, but does it help you to develop where you are right now?" (Large-sized firm, Västerbotten)

7.2.4 Co-working places: Implications for the local community

In addition to the individual and firm benefits discussed in the previous section, the respondents identified some aspects in which co-working places can favour the local community.

Several respondents mentioned that attracting new skills to the sparsely populated areas would strengthen the local economy. The municipalities did already have various strategies to attract new citizens, such as facilitating for

newcomers to settle in, and using local ambassadors whose task is to market the municipality to the outside world. A co-working place is seen as another factor that could potentially contribute to increasing the attractiveness. As a respondent from one of the municipalities put it:

> "This target group with people who can work in this way and who are interested in doing so, we don't have it to such a great extent in the municipality today, so it [attracting them] would definitely bring more diversity and raise the strategic capacity as well as the skill level in general." (Municipality, Västerbotten)

A respondent from another municipality also believed that co-working places could potentially contribute to local development in the sparsely populated areas, and explained their standpoint further:

> "We must dare to think more 'outside the box', both if we are to survive and if we will be able to grow a bit too. Just because we are small and lack larger industries, we can still try to excel and to be at the forefront when it comes to these new workplace forms." (Municipality, Västerbotten)

Some respondents highlighted the opportunities that the digital development had implied for smaller communities. A respondent from one of the municipalities remarked that thanks to internet and the digitalisation, it is possible to attend to world-leading arenas without leaving the Swedish periphery. This combination of the local and the global is a true competition advantage, according to him. A similar thought was presented in the interview with the co-working chain. The respondent pointed out the advantage of being locally based in a physical hub and simultaneously taking part of a cross-border community. The access to a global network of different skills and resources makes it easier to live and work locally, she argued.

A challenge for co-working places in sparsely populated areas is however to supply it with a sufficient number of potential users. The labour markets in the participating municipalities contained certainly many small-scale entrepreneurs, but few of them belonged to the place-independent service sector – e.g. telecommunication and IT – which is the most frequent type of users of co-working places today. According to the respondent from the co-working chain, a prerequisite for them to open a hub in a sparse municipality is that there are enough potential users in the long term:

> "It is about finding the long-term perpetuation, to feel that it doesn't end after these three entrepreneurs who took a course at some point, but that there is a flow and that there is a commitment in that specific area to continue to pave the wave for entrepreneurship." (Co-working chain, Västerbotten)

Thus, it is a necessity for a well-functioning co-working place that there is a local demand for it. This was mentioned by the municipalities as a main reason why they hesitated to invest in a co-working place. One respondent from the municipalities explained that since the municipality currently had a serviced office which was far from fully booked, she was uncertain if there would be enough interest for another type of co-working place. Several respondents planned to conduct a survey to get a better understanding of the local interest. One respondent from the municipalities observed that it is difficult to measure the local demand, since an attractively packaged solution can also create a demand. Furthermore, when examining the local demand, one does not include those who might consider moving to the municipality if there were better conditions for co-working. According to the respondent, it would be helpful to have a model for calculating the demand, the direct and indirect effects, and to compare these to the investment costs.

7.3 Summary of the analysis

To summarise the chapter, many implications of teleworking and co-working were brought up in the interviews. The respondents mentioned several benefits from less commuting, including health gains, reduced GHG emissions, higher productivity, and more leisure time for the individual. In addition to this, teleworking from a co-working place specifically has the advantage of reducing the sense of isolation, giving more structured work routines and, arguably, promoting collaborations and innovations. Furthermore, the respondents believed that improved opportunities for teleworking could favour both the local communities by facilitating for a life in sparse areas, and the firms by increasing their attractiveness as an employer. The pandemic has accelerated the digitalisation process and become a 'trial period' of teleworking for the organisations. The new teleworking experiences among new occupational groups, in combination with a pent-up demand for social interaction, may lead to a rising interest for co-working places after the pandemic – despite the negative effects that the pandemic has had on the co-working industry in short term. Although the organisations agreed that a mix of teleworking and office-based work would be the optimal solution when returning to 'normality', none of the firms had discussed co-working places as a specific workplace option for the employees. The municipalities, on the other hand, were familiar with the concept and had different ideas of its potential for their respective area. However, the respondents pointed out the uncertain supply of potential users as the main challenge for co-working places in sparsely populated areas.

8. Discussion

As the previous chapter displayed, the interviews gave extensive input on prerequisites for, and implications of, co-working for organisations as well as municipalities in sparse areas. The interviews also led into other reflections related to local development in sparsely populated areas and to the new normality which we will create in the wake of the pandemic. How do these findings relate to the research questions of the study? This chapter is divided into four parts. The first one addresses the research question concerning the potential of co-working places to become an alternative workplace for employees at large organisations. The second part discusses the potential of co-working places as a strategy to promote local development in sparse area. In the third part, the potential of co-working places to contribute to reaching the sustainability goals is discussed. The final part brings up some suggestions for future research.

8.1 Under which circumstances do firms and organisations see co-working places as a potential alternative to office-based work for their employees?

The pandemic has been a gamechanger for how firms organise work. The organisations' transition to teleworking is naturally a response to the temporal restrictions of the pandemic, but the experiences from this period open for more permanent changes. The firms were obliged to determine which of the anticipated challenges linked to teleworking that were real challenges and which were only imagined ones. This normalisation of a working method that was previously unthinkable is also a manifestation of how rapidly norms can change. Firm policies are based on confidence, norms, and values. Since the two latter undeniably are changeable, and the matter of confidence was tested with positive results during this 'trial period' of the pandemic, there are reasons to

believe that the firm policies concerning teleworking will ease up. According to Budnitz et al. (2021), the empowerment of the employer is a fundamental criterion for the opportunities to telework. Therefore, the changed firm policies could be expected to play a major role for enabling an increase of teleworking.

Most of the responses from the firms concerned teleworking in general, rather than co-working places in particular. The reason was partly the previously restrictive attitude to teleworking overall, partly that no one among the employees had been asking for it. Furthermore, the site selection of a teleworking employee is less important, from a firm perspective, than the initial question of teleworking as an alternative to the conventional workplace – as long as the work environment is satisfying. Since the question regarding the permission of teleworking precedes the question about the different options for teleworkers, it is not surprising that co-working places have not been discussed within the firms. Nor is it surprising that employees, who work in an organisation which does not accept teleworking, do not inquire for co-working places specifically. If the post-pandemic normality implies more teleworking in the organisations, it is possible that the discussion will move from teleworking in general to concern co-working places as an alternative workplace. Moreover, the firms are attentive to the demand of the employees. Therefore, the employees are well placed to influence the firms in the desired direction – regardless of whether it concerns the permission to keep teleworking after the pandemic or if it concerns a specific workplace solution, such as access to co-working places. Not only does flexibility improve the firm's attractiveness as employer, it also makes it possible for the firm to hire skills from other regions. This might disfavour the local workforce, which needs to compete with extraregional applicants for the jobs, but the firm would benefit from this opportunity since it may lead to an increase of the general skill level of the organisation.

Despite the overall positive experiences of teleworking and the widespread desire among the employees to not returning to the office-based status quo, the employers claim that neither they nor the employees find the current work situation optimal. The pandemic has led to a type of reversed inflexibility, where the employees are not allowed to work from the office. Although this sudden transition explained the rapid norm shift, many employees are tired of working from home and do not want to make this work situation permanent, according to the organisations. Thus, it is important to stress that flexibility is not synonymous to teleworking but implies the freedom to alternate between workplaces depending on the individual's conditions and preferences.

It is also crucial to reflect on what role the organisations have in normalising co-working places as a workplace solution beyond the group of self-employed. There are certainly employees at large organisations among the co-working users, but they are still in minority. The large organisations have the power to lead the development towards more place-independent employments, where the employees can telework from wherever they live. This thought may sound like an echo from a 90s characterised by future optimism (Holloway,1994; Crellin, 1993), but it is possible that the anticipated upswing for ruralism, that never fully occurred at the time, have better chances to find a hotbed in today's society. The group of self-employed is growing, but professionals within the traditionally big co-working branches – which are the same as Florida (2004) would call "the creative class" – are still rare in the sparsely populated areas. Therefore, the attitude of organisations to teleworking are likely to have a greater impact on the development of local co-working places in sparse areas than the growing group of self-employed.

The fact that the opportunity to teleworking improve the chances to stay and to settle in a peripheral area is highlighted in both the interviews and the literature (Simpson et al., 2003; Holloway, 1994). Furthermore, co-working places might make teleworking a more appealing option. It is however difficult to estimate whether this will increase the attractiveness of sparsely populated municipalities to such an extent that it will result in visible effects on the population trends. It is possible that many co-occurring trends – including the growing interest in localism and quality of life, as well as the rising concerns about insecurity in the big cities – will interact in increasing the overall attractiveness to the sparsely populated municipalities. If there is a desire to leave the urban life, the permission to telework and the access to a good alternative workplace might be the last puzzle pieces to make it a viable option.

Do we know whether co-working places are necessary to achieve this, or if the permission to telework is enough? This question is central for the municipalities which are considering investing in a co-working place. This study does not examine the preferences of teleworkers regarding teleworking from home, their cabin or a hub, and can therefore only offer speculations. The usefulness of a co-working place will probably differ depending on whether the targeted user group is the local population or temporal visitors. A teleworking city dweller who visits a sparse region may prefer to retreat to a lone mountain cabin. However, a person who permanently live in the sparse region may prefer to have an alternative to the home office or the cabin. Again, the beauty of flexibility may be the freedom to alternate between different environments.

Better chances to teleworking has the potential to facilitate for a life in sparsely populated areas. However, it is important to observe that this does not mean that increased teleworking automatically will lead to local development in sparse

areas. Naturally, this is ultimately a question of where people prefer to live. It is therefore necessary to pose the central question whether sparse areas will actually be favoured by more flexibility, or if it has a reversed effect where individuals are employed in the peripheral area but telework from the core area. In such a case, the sparsely populated municipalities, which primarily have outbound commuters today, will lose both the tax revenues and the economic externalities linked to consumption to which a local employee would otherwise contribute. Consequently, it is uncertain if increased flexibility will lead to local development in sparsely populated municipalities.

The interviews have confirmed the theory of the importance of adapting a co-working place to the local demand and conditions (Tadashi, 2013; Kojo & Nenonen, 2016; Fuzi, 2015). There is a diversity of shapes that a co-working place can take, and this fact should be used if a municipality or private actor decides to start a co-working place in the sparsely populated area. The two examples of existing co-working places in the interviews – the co-working chain and the small-scale co-working place in Umeå municipality – clearly demonstrate this room for interpretation: the former aims to be both a meeting place and a workplace, open for anyone at the cost of one of the contracts, whereas the latter seeks to provide a workplace, free of charge but only bookable for municipal officials. The co-working chain represents the more conventional co-working hotel (see Table 2), which is privately run, for-profit and offering short-term contracts. By contrast, the small-scale co-working place in Umeå municipality is most similar to a collaborative hub, which is non-profit and semi-public, targeting a certain group of users. While the respondent from the co-working chain explains their ambition to create surplus values for their users and the local community, the respondent from the small-scale hub states the individual benefit of less commuting as the main advantage rather than any positive implications for the local community. Nevertheless, regardless of

whether the main motivation is to favour the individual or the community, the outcome may be similar. In the case of the small-scale hub, the respondent did not think that the presence of the hub would have any influence on the village due to its already favourable location in relation to Umeå – but that does not mean that a similar hub would not have positive impact on the local community in a village with shrinking population.

The municipalities had different images of what a co-working place in their respective municipality would look like. One municipality planned for a hub that initially would be publicly run and non-profit – a model which is most similar to a public office or a third place (see Table 2). Another municipality imagined a co-working place co-locating with an existing hotel or ski resort in beautiful natural settings, partly aiming to attract tourists to prolong their stay in the area. This model reminds of the Japanese model of resort offices, where the users stay at a hub located in a recreational area during a limited period of time (Kojo & Nenonen, 2017). In both these cases, the co-working place is suggested to be located within an existing structure that people naturally pass by, which is also what the literature recommends (Fuzi, 2015; Holloway, 1994). This variety of ideas reflects the range of shapes that a co-working place can take, in order to best match the local demand and geographical conditions.

If the group of employees from organisations becomes more frequent users of co-working places, this will probably have an influence on the best hub design. Self-employed and employees work in different ways and will therefore have different demands on the work environment. For instance, employees at organisations might put higher demands on the access to well-isolated meeting rooms in order to stay in contact with their colleagues at the organisation. Arguably, the driver to use a co-working place may differ between employees and self-employed: where the self-employed looks for networking and collaboration, the employee may mainly demand the workplace function. This

example of varying motives is in line with findings in previous studies on user preferences (Weijs-Perree et al., 2019; Richardson, 2017; Fuzi, 2015). However, the different demands from the user groups can have implications on the design of the hub, and this is something that needs to be considered when trying to adapt the hub to the local conditions. Another possible solution to satisfy different demands is to follow the example of the co-working chain to provide different contracts, whereof some emphasise the 'community function' and others rather stress the 'workplace function'.

The question whether a fee-based co-working place offers short-term or long-term contracts is crucial for determining the overall type of the hub. In contrast to e.g. co-working hotels, serviced offices offer long-term contracts (see Table 2), which has the advantage of giving the owner more predictable income. However, short-term contracts have the benefit of moving the risk-taking from the individual to the co-working provider. There is no obvious answer to the question whether short-term or long-term contracts are the most suitable alternative for sparsely populated areas. On the one hand, short-term contracts may attract more potential users since it lowers the threshold to sign a contract for the individual entrepreneur. On the other hand, starting a co-working place in a sparse area is also a risk-taking, due to the limited supply of potential users, which may instead deter potential initiators from investing in a hub. In this sense, co-working chains which run multiple hubs in different places have an advantage since they can spread the risks.

8.3 Do co-working places have the potential to contribute to the various aspects of sustainable development?

Many of the sustainability aspects were brought up spontaneously in the interviews, including the individual and environmental benefit of less

commuting, the recruitment benefits of firms, and the municipal benefit of becoming attractive to a wider group of skills. In several cases, permission to teleworking (regardless of site) is sufficient to improve the sustainability performance – but in some respects, co-working places outperform the home office. This includes the sense of belonging to a social context, which is mentioned as an important driver of co-working in both the literature (Fuzi, 2015) and in the interviews. It also includes the opportunity to get a better structure of the working day when separating the workplace from where you spend your leisure time, which is also pointed out by Kojo & Nenonen (2016) as a key advantage of co-working.

Agglomeration externalities are another advantage, although the respondents from the firms were uncertain of the usefulness of general knowledge spillovers for their organisation. This remark reflects the distinction between related and unrelated skills, and their different implications for the economy (Frenken et al., 2007). Although this theory takes a regional economic perspective, it illustrates the firm perspective too. If related skills give complementarity, leading to local economic growth, whereas unrelated skills contribute to diversifying the labour market and making it more resilient to shocks, the former is most interesting from a firm's perspective. Most beneficial for the firms are probably Marshall-Arrow-Romer (MAR) externalities, since specialisation is associated with increased productivity (Marshall, 1920). Consequently, the firms would primarily benefit from the potential agglomeration externalities of a co-working place, if the other co-working users had related skills to themselves (generating Jacobian externalities) or, even better, if they were specialised in the same business branch (leading to MAR externalities). However, since a co-working place in a sparsely populated municipality would probably gather a diverse group of users rather than a specialised one, the agglomeration benefits would mainly be Jacobian externalities linked to related and unrelated knowledge.

Following the logic of Glaeser (2000; 2011), these diverse knowledges collected in a co-working place would stimulate the local economy by strengthening the human capital. In short, the expected agglomeration externalities from a co-working place should primarily benefit the local economy but may also be relevant for the firms.

A third advantage of co-working places in relation to teleworking in general is that co-working places manage to combine different levels of communities. They consist of teleworking, as a place-independent component, and of the physical hub, as a place-dependent component. This makes them interesting from a spatial perspective. Several respondents brought up this combination of the global and borderless community which digitalisation has made available, and the local and physical community which many people want to be part of. This global community of connected teleworkers exemplifies how the community can overbridge spatial distance (Latham, 2009), which may enrich the local community with complementary knowledges (Lőrincz et al., 2020). In sparsely populated areas, this type of global advice networks is of special importance, since they can compensate for the lack of geographical proximity (Boschma, 2005) and industry specialisation (Eriksson & Lengyel, 2019). However, while acting in these global networks, people might still have a need for rootedness in a local community. Arguably, this relates to the trend of localism, as a reaction to an increasingly globalised world.

As previously mentioned, the main challenge for co-working places for operating in sparse areas is the limited user supply and the associated risks for initiators. One suggestion to handle this is to collaborate with local actors, for example co-locating with a local Folkets hus. Keeping the sustainability goals of 'inclusive growth' in mind, it is necessary to be careful about transforming public space into a fee-based place. This is what Lorne refers to when describing the risk that co-working places become an "individualism-masked-as-

collectivism", resulting in "new geographies of exclusion, enclosure and exploitation" (Lorne, 2020, p.761). The safest solution may be to avoid using public space for the purpose of exclusive activities, or to make it an open access area. However, being aware of this risk, it is also entirely possible to find solutions where the public space remains public to a certain extent. One example could be that Folkets hus functions as a contract-based co-working place at daytime on weekdays, but that it is open for anyone on evenings and weekends.

The concern about the restriction of public space relates to the broader question, elaborated by Harvey (1989), concerning whether urban governance should be characterised by managerialism or by entrepreneurialism. In the interviews, both ideals have been present. On the one hand, the efforts to adapt a potential hub to the local demand bears traces of managerialism, where the local welfare provision is prioritised. On the other hand, the attempts of the municipalities to market themselves in the most favourable way to attract new skills to the area is rather a sign of entrepreneurialism. These attempts relate to the theories of Glaeser (1994) and Florida (2003; 2004) linking "highly skilled" and "creative" individuals to regional growth and attractiveness. It is obviously a balancing act for the municipalities to take care of the needs of the existing population while trying to alter the trend of depopulation by attracting new citizens.

8.4 Future research

This explorative study has given rise to several questions that would need a closer examination. To start with, mapping the extent of potential co-working users, as well as their interest for such a place, should be a relevant task for both municipalities and the academic research. For both public and private actors, a documented interest among the residents is a precondition for starting a local co-working place in a sparsely populated municipality. An interest survey may

provide valuable insights about the prospects of a local hub, but it is difficult to measure interest due to its changing nature, since a nicely packaged idea may also create a demand. Therefore, a future survey should include sketches of different types of co-working places in order to analyse how the local interest depends on specific characteristics of a co-working place.

Another reason why it is difficult to analyse the potential of local co-working places is that a locally distributed survey does not include the potential users that may consider settling in the municipality if the opportunities for teleworkers increased. Therefore, investigating the willingness to settle in sparsely populated areas is also a topic for a future survey. Two interesting target groups for such a study are newcomers and part-time dwellers, and the focus should be to illuminate the drivers of and the conditions for moving to a sparse municipality.

The number of potential users is also linked to societal events, including pandemics. Covid-19 has been a challenge for co-working places since many of their users have temporally withdrawn their contracts. At the same time, since there are reasons to believe that teleworking will become more common after the pandemic, the number of potential users will rise. Equally, many people have a growing desire for social meetings after a period of isolation. These two factors may interact in raising the demand for co-working places in the coming years. Therefore, a study examining how the demand for co-working places change over time would be relevant.

Finally, if the growing trend of teleworking gives rise to a counter-urbanisation trend where sparse and rural municipalities compete for emigrating city dwellers, many interesting research questions arise. What will be crucial for an individual's choice of where to settle, if the labour market is unimportant? Will the local labour markets lose their relevance, as teleworking becomes increasingly prevalent? In case of such a development, this type of questions

should be of certain interest for spatial planners as well as human geographers in general.

9. Conclusions

This study has examined co-working places as a potential option for sparsely populated municipalities in Västerbotten to increase their attractiveness and contribute to attaining various sustainability goals, linked to less commuting, less isolation and more regional inclusiveness.

The first research question concerned to what extent large organisation saw co-working places as a potential alternative to office-based work. Although the firms interviewed in this study had not an official opinion on co-working places per se, psychosocial aspects were mentioned as a main advantage of hub-based teleworking in comparison to home-based teleworking. Firms could also benefit from knowledge spillovers if the other co-working users belonged to a domain with related skills. Furthermore, permitting teleworking in general would give recruitment benefits for firms, both in terms of becoming a more attractive employer and in terms of making it possible to hire skills remotely. Co-working places as an alternative workplace will however only be discussed within the firms if there is a demand for it among the employees – who, in turn, arguably would need the permission to telework before considering co-working places as a viable option.

The second research question concerned to what extent sparsely populated municipalities saw co-working places as having potential to contribute to local development by increasing the attractiveness of sparse areas. Teleworking in general can facilitate for living and working in the sparse areas, by making it easier for the existing population to stay while making it more attractive for potential newcomers. Access to a co-working place may increase the interest in

teleworking since home-based teleworking has drawbacks in terms of social isolation. The growing trend of teleworking might contribute to altering the negative population trends in sparsely populated areas – but not necessarily, since this ultimately depends on whether people prefer to live in sparse or in dense areas. A precondition for starting a co-working place in the sparsely populated municipalities – for public as well as private actors – is a sufficient supply of potential users. This group will increase if employees at large organisations are increasingly empowered by their employers to telework.

The third research question concerns whether co-working places can contribute to reaching the sustainability goals. Co-working places have potential to give physical as well as psychosocial health benefits and could probably also lead to reduced GHG emissions due to less commuting, although this aspect was only briefly discussed in the interviews. Since co-working places might increase the attractiveness of sparsely populated areas, they have potential to promote inclusive growth and reducing urban-rural inequalities. To alter the negative population trends in many sparse municipalities, it is necessary to attract new citizens, and especially "highly skilled" individuals have the potential to diversify the local economy. However, in order to promote inclusion, it is crucial that municipalities in their efforts to attract new citizens do not compromise on the existing population's needs. For example, it is important to be careful when converting public space to fee-based co-working places, designated to an exclusive group of people. A co-working place that successfully favours the local community is one that both matches the local demand and conditions and takes height for new user groups.

There is a rising interest in co-working places in the academic literature, but few studies address their merits outside the urban core. To get a better understanding of the mechanisms of co-working in sparse conditions, additional research on potential users in the peripheral areas is needed. Although just scratching the

surface, this exploratory study will hopefully contribute to inspiring future research on the topic.

10. References

Assenza, P. (2015). If You Build It Will They Come? The Influence of Spatial Configuration on Social and Cognitive Functioning and Knowledge Spillover in Entrepreneurial Co-Working and Hacker Spaces. *Journal of Management Policy and Practice, 16*(3), 35-48. Retrieved from http://www.na-businesspress.com/JMPP/AssenzaP_Web16_3_.pdf

Baxter, Jamie. 2016. Case Studies in Qualitative Research. In Hay, Iain (ed.). *Qualitative Research Methods in Human Geography*. Canada: Oxford University Press, 130-146.

Belzunegui-Eraso, A., & Erro-Garcés, A. (2020). Teleworking in the Context of the Covid-19 Crisis. *Sustainability*, *12*(9), 3662. Retrieved from https://doi.org/10.3390/su12093662

Bennewitz, E. (2020, June 11). *Därför har corona gjort att branschen fått en knuff mot digitaliseringen – tre avgörande punkter.* Retrieved from Corona ger byggbranschen en skjuts mot digitaliseringen - Byggindustrin

Boschma, R. (2005). Proximity and Innovation: A Critical Assessment. *Regional Studies, 39*(1), 61-74. Retrieved from https://doi.org/10.1080/0034340052000320887

Bottke, I. & Bieblad, L. (2020). *Distansarbete och distansmöten – en sammanfattning av intervjuer.* Region Västerbotten. Retrieved from Rapport-Distansarbete-och-distansmoten.pdf (hallbararesor.nu)

Budnitz, H., Tranos, E. & Chapman, L. (2021). The potential for telecommuting to offer sustainable and resilient accessibility. In C. Mulley & J.D. Nelson (Ed.). *Urban Form and Accessibility* (1st ed., pp. 157-171). Retrieved from https://doi.org/10.1016/B978-0-12-819822-3.00006-7

Clark, W.A.V., Huang, Y. & Withers, S. (2003). Does commuting distance matter? Commuting tolerance and residential change. *Regional Science and Urban Economics, 33,* 199-221. Retrieved from https://doi.org/10.1016/S0166-0462(02)00012-1

Crellin, I.R. (1994). Telecentres and telecottages: A new approach to rural community development and technology transfer. Australia: Department of Primary Industries and Energy. Retrieved from ED420755.pdf

Det nya normala – arbetssättet och kontoret. (2020). UR play, Handelshögskolan i Stockholm. September 14. Retrieved from UR Samtiden - Sveriges väg genom pandemin: Det nya normala - arbetssättet och kontoret | UR Play

Ekot. (2021). Sveriges Radio, P1, February 24, 17:32. Retrieved from Fyra av tio jobbar hemifrån - Nyheter (Ekot) | Sveriges Radio

Eriksson, R.H. & Lengyel, B. (2019). Co-worker Networks and Agglomeration Externalities. *Economic Geography, 95*(1), 65-89. Retrieved from https://doi.org/10.1080/00130095.2018.1498741

Erlingson, K. (2020, March 28). *Digitalisering positiv följdeffekt av corona.* Retrieved from Digitalisering positiv följdeffekt av corona | HN

Florida, R. (2003). Cities and the Creative Class. *City & Community, 2*(1), 3-19. Retrieved from https://doi.org/10.1111/1540-6040.00034

Florida, R. (2004). The Creative Class. In R.T. Legates & F. Stout (Ed.). *The City Reader* (6th ed., pp. 163-169). London: Routledge.

Frenken, K., Van Oort, F. & Verburg, T. (2007). Related Variety, Unrelated Variety and Regional Economic Growth. *Regional Studies, 41*(5), 685-697. Retrieved from https://doi.org/10.1080/00343400601120296

Fuzi, A. (2015). Co-working spaces for promoting entrepreneurship in sparse regions: the case of South Wales. *Regional Studies, Regional Science, 2*(1), 462-469. Retrieved from https://doi.org/10.1080/21681376.2015.1072053

Gimling Shaftoe, C. (2020, December 28). *Professorn: Videomöten är det nya normala.* Retrieved from Professorn: Videomöten är det nya normala | SVT Nyheter

Glaeser, E. (1994). Cities, Information, and Economic Growth. *Cityscape, 1*(1), 9-47. Retrieved from https://www.jstor.org/stable/20868363

Glaeser, E. (2011). Our Urban Species. In R.T. Legates & F. Stout (Ed.). *The City Reader* (6th ed., pp. 707-715). London: Routledge.

Glaeser, E. (2000). The new economics of urban and regional growth. In G.L. Clark, M.P. Feldman & M.S. Gertler (Ed.). *The Oxford handbook of economic geography*, (83-99). New York: Oxford University Press

Hanson, E., Mattisson, K., Björk, J., Östergren, P-O. & Jakobsson, K. (2011). Relationship between commuting and health outcomes in a cross-sectional population survey in southern Sweden. *BMC Public Health, 11*(834), 1-14. Retrieved from https://doi.org/10.1186/1471-2458-11-834

Haraway, D. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist studies*, *14*(3), 575-599. Retrieved from https://doi.org/10.2307/3178066

Harvey, D. (1989). From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism. *Geografiska Annaler: Series B, Human Geography, 71*(1), 3-17. Retrieved from https://www.jstor.org/stable/490503

Holloway, L. (1994). *Telestugor, telearbete och distansutbildning.* Stockholm: TELDOK. Retrieved from https://www.teldok.net/pdf/Teldok-rapport90.pdf

Jacobs, J. (1969). *The economy of cities*. New York: Vintage.

Jacobs, J. (1961). The uses of sidewalks: Safety. In R.T. Legates & F. Stout (Ed.). *The City Reader* (6th ed., pp. 149-153). London: Routledge.

Kanellopoulos, D.N. (2011). How can teleworking be pro-poor? *Journal of Enterprise Information Management, 24*(1), 8-29. Retrieved from https://doi.org/10.1108/17410391111097401

Kojo, I. & Nenonen, S. (2017). Evolution of co-working places: drivers and possibilities. *Intelligent Buildings International, 9*(3), 164-175. Retrieved from https://doi.org/10.1080/17508975.2014.987640

Kojo, I. & Nenonen, S. (2016). Typologies for co-working spaces in Finland – what and how? *Facilities, 34*(5/6), 302-313. Retrieved from https://doi.org/10.1108/F-08-2014-0066

Latham, A. (2009). Community. In A. Latham, D. McCormack, K. McNamara & D. McNeill (Ed.). *Key Concepts in Urban Geography* (1ˢᵗ ed., pp. 148-157). London: SAGE Publications Ltd.

Lindsten, P.O. (2020, March 24). *Coronapandemin en katalysator för ökad digitalisering.* Retrieved from Digitala katalysatorer i pandemins spår

Lindström, M. (2008). Means of transportation to work and overweight and obesity: A population-based study in southern Sweden. *Preventive Medicine, 46*(1)*,* 22-28. Retrieved from https://doi.org/10.1016/j.ypmed.2007.07.012

Lőrincz, L., Chihaya, G.K., Hannák, A., Takács, D., Lengyel, B. & Eriksson, R. (2020). Global connections and the structure of skills in local co-worker networks. *Applied Network Science, 5*(78), 1-20. Retrieved from https://doi.org/10.1007/s41109-020-00325-8

Lorne, C. (2020). The limits to openness: Co-working, design and social innovation in the neoliberal city. *Economy and Space, 52*(4), 747-765. Retrieved from https://doi.org/10.1177%2F0308518X19876941

Manika, S. (2020). Transforming Vacant Commercial Spaces: From Localized Hotspots of Urban Shrinkage to "Smart" Co-Working Places. *Open Journal of Social Sciences, 8,* 86-97. Retrieved from https://doi.org/10.4236/jss.2020.86009

Mariotti, I., Pacchi, C. & Di Vita, S. (2017). Co-working Spaces in Milan: Location Patterns and Urban Effects. *Journal of Urban Technology, 24*(3), 47-66. Retrieved from https://doi.org/10.1080/10630732.2017.1311556

Marshall, A. (1920). *Principles of economics*. London: Macmillan.

Moriset, B. (2013). Building new places for the creative economy. The rise of coworking spaces. Retrieved from https://halshs.archives-ouvertes.fr/halshs-00914075

Naturvårdsverket. (2020, December 15). *Utsläpp av växthusgaser från inrikes transporter.* Retrieved from Utsläpp av växthusgaser från inrikes transporter - Naturvårdsverket (naturvardsverket.se)

O'Brien, W. & Aliabadi, F.Y. (2020). Does telecommuting save energy? A critical review of quantitative studies and their research methods. *Energy % Buildings, 225,* 1-15. Retrieved from https://doi.org/10.1016/j.enbuild.2020.110298

Ohlson, M. (2020, September 28). Krönika: Arbete post-corona, är det som förr? *Västerås Tidning.* Retrieved from Krönika: Arbete post-corona, är det som förr? (vasterastidning.se)

Olin, L. (2020, August 26). *Corona snabbar på digitalisering.* Retrieved from Corona snabbar på digitalisering – Fastighetstidningen

Persson, M., Hult, C. and Larsson, M-O. 2019. *Transportstudien 2019. Analys av åtgärder för en hållbar transportsektor.* Stockholm: IVL Svenska Miljöinstitutet AB. Transportstudien 2019 (ivl.se)

Qvortrup, L. (1989). The Nordic telecottages: community teleservice centres for rural regions. *Telecommunications Policy, 13*(1), 59-68. Retrieved from https://doi.org/10.1016/0308-5961(89)90057-8

Region Västerbotten. (2014). *Digital agenda för Västerbotten 2014-2020.* Retrieved from Digital agenda för Västerbotten 2012-2020 (regionvasterbotten.se)

Region Västerbotten. (2013). *RUS 2014–2020. Regional utvecklingsstrategi för Västerbottens län.* Retrieved from BILAGA 6. Regional utvecklingsstrategi för Västerbottens län 2014–2020.pdf (regionvasterbotten.se)

Region Västerbotten. 2020. *Västerbotten – en attraktiv region där olikheter skapar utvecklingskraft. Regional utvecklingsstrategi 2020–2030.* Regional utvecklingsstrategi 2020-2030_webb.pdf (regionvasterbotten.se)

Richardson, L. (2017). Sharing as postwork style: digital work and the co-working office. *Cambridge Journal of Regions, Economy and Society, 10*(2), 297-310. Retrieved from https://doi.org/10.1093/cjres/rsx002

Simpson, L., Daws, L., Pini, B. & Wood, L. (2003). Rural telework: case studies from the Australian outback*. *New Technology, Work and Employment, 18*(2), 115-126. Retrieved from https://doi.org/10.1111/1468-005X.00114

Statistics Sweden. (2021, April 8). *Befolkningsförändringar antal personer efter region och kön. År 2000–2020.* Retrieved from Befolkningsförändringar antal personer efter region och kön. År 2000 - 2020. PxWeb (scb.se)

Statistics Sweden. (2021, April 8). *Folkmängden den 1 november efter region, ålder och kön. År 2002–2020.* Retrieved from Folkmängden den 1 november efter region, ålder och kön. År 2002 - 2020. PxWeb (scb.se)

Statistics Sweden. (2021, April 8). *Förvärvsarbetande pendlare 16+ år över kommungräns efter bostadskommun, arbetsställekommun och kön. År 2004–2018.* Retrieved from Förvärvsarbetande pendlare 16+ år över kommungräns efter bostadskommun, arbetsställekommun och kön. År 2004 - 2018. PxWeb (scb.se)

Statistics Sweden. (2021, April 8). *Kommuner i siffror.* Retrieved from Kommuner i siffror (scb.se)

Statistics Sweden. (2021, June 2). *Yrken i Sverige.* Retrieved from Yrken i Sverige (scb.se)

Stratford, Elaine and Bradshaw, Matt. 2016. Qualitative Research Design and Rigour. In Hay, Iain (ed.). *Qualitative Research Methods in Human Geography.* Canada: Oxford University Press, 117-129.

Tadashi, U. (2013). What is Coworking? A Theoretical Study on the Concept of Coworking. *Discussion Papers, Series A, 265,* 1-15. Retrieved from https://dx.doi.org/10.2139/ssrn.2937194

Tajalli, M. & Hajbabaie, A. (2017). On the relationships between commuting mode choice and public health. *Journal of Transport and Health, 4,* 267-277. Retrieved from http://dx.doi.org/10.1016/j.jth.2016.12.007

Umeå University. (2021, April 9). *Processing of personal data.* Retrieved from Processing of personal data (umu.se)

Vaddadi, B., Bieser, J., Pohl, J. & Kramers, A. (2020). Towards a conceptual framework of direct and indirect environmental effects of co-working. *Proceedings of the 7th International Conference on ICT for Sustainability,* 27-35. Retrieved from https://doi.org/10.1145/3401335.3401619

Weijs-Perrée, M., van de Koevering, J., Appel-Meulenbroek, R. & Arentze, T. (2019). Analysing user preferences for co-working space characteristics. *Building Research & Information,* 47(5), 534-548. Retrieved from https://doi.org/10.1080/09613218.2018.1463750

Västsvenska Handelskammaren. (2020, October 19). *Distansarbete – det nya normala?* Retrieved from Distansarbete - det nya normala? | Västsvenska Handelskammaren (vastsvenskahandelskammaren.se)

Wenström, K. (2014). *25 år med Hela Sverige ska leva!* Lysekil: Alltryck Plus. Retrieved from Jubileum_laag_2.pdf (helasverige.se)

11. Appendix

Interview scedule for municipalities

1. Hur arbetar man med regional utveckling idag i X kommun? Vad kännetecknar arbetsmarknaden och näringslivet i X kommun? Utmaningar och potential? Finns det en risk att X blir en bostadskommun och inte en arbetsplatskommun?
   (How do you work with regional development today in the municipality? What characterise the labour market in the municipality? Challenges and potential? Is there a risk that the municipality becomes a "residential municipality" instead of a "workplace municipality"?)

2. Tidigare erfarenhet av co-working/telestugor, eller dyl.? Vad i så fall, och hur föll det ut?
   (Any previous experience of co-working places, telecottages, etc.? If so, how did it work?)

3. Hur skulle ni se på förutsättningarna för att upprätta en arbetshubb i X? Användarunderlag, lediga lokaler, möjlighet till ekonomisk finansiering från kommunens sida?
   (In your opinion, what are the opportunities for initiating a co-working place in the municipality? User supply, empty premises, possibilities for the municipality to give financial support?)

4. Hur ser ni på avvägningen mellan den ekonomiska kostnaden av att (del-)finansiera en arbetshubb och den potentiella ekonomiska vinsten av att hålla kvar arbetskraften lokalt (med indirekta effekter på handel, service, etc.)? Tror ni att en arbetshubb skulle bidra till att arbetsmarknaden diversifierades?
   (How do you weigh the economic costs of /partly/ financing a co-working place against the potential economic benefit of retaining the workforce in the local community, considering the indirect effects on retail, services, etc.? Do you think that a co-working place would contribute to a diversification of the local labour market?)

5. Under vilka förutsättningar skulle en arbetshubb kunna vara ett alternativ för X kommun?
   (Under what circumstances would a co-working place be an alternative for the municipality?)

Interview schedule for firm/organisation employers

1. Berätta lite om företaget och din roll! Hur är ni organiserade, typ av avdelningar (vilka måste vara på plats och vilka inte?)? Varifrån rekryterar ni främst? Många pendlare eller främst lokal arbetskraft?
   (Tell me a bit about the firm and your role! How are you organised, what type of sections do you have? How many can telework and how many need to be at the office? From what areas do you mainly recruit? Do you have many commuters among the employees or is the workforce mainly local?)

2. I vilken utsträckning kan ni erbjuda distansarbete till era anställda? Skillnad före och efter pandemiutbrottet? Erfarenheter av det?

(To what extent can you offer teleworking to your employees? Is there a difference between the situation before and after the pandemic outbreak? What are your experiences from it?)

3. Hur ser ni på att ha större andel distansarbetande framöver? Vad talar för och emot?
(What do you think about the prospects of having more teleworking in the future? What are the pros and cons?)

4. Hur skulle ni se på att ha anställda som arbetar från en co-working space istället för att vara på kontoret? Positiva/negativa effekter för företaget av mer "blandade arbetsplatser" som en arbetshubb kan vara?
(What would think about having employees who telework from a co-working place instead of working from the office? From a firm's perspective, any positive/negative effects of the more diverse workplaces that co-working places can be?)

5. Vilka förutsättningar har företaget att finansiera en sådan lösning (t.ex. genom att betala eventuell hyra för kontorsplats på arbetshubb)?
(What opportunities do you have as a firm to finance such a solution, e.g. by paying a co-working contract on an employee's behalf?)

6. Allmänna tankar om potentialen för co-working places i Västerbottens glesbygd. Tror du att det kan bidra till att öka attraktiviteten hos mindre orter om fler kan erbjudas en lokal arbetshubb som alternativ till distansarbete från hemmet?
(General reflections on the potential for co-working places in the sparsely populated areas in Västerbotten. Do you think that better chances to teleworking from a local co-working place, as an alternative to teleworking from home, can contribute to increasing the attractiveness of smaller communities?)

Interview schedule for the small-scale co-working organiser in Umeå municipality

1. Berätta om arbetshubben – vilka är där, i vilken lokal, hur väcktes idén och hur gick processen till för att få den till stånd, o.s.v.?
(Tell me about the co-working place – who are the users, where is it located, how did you get the idea and how did you do to realise it?)

2. Vad kallar ni den (hubb, co-working space, eller annat)?
(What do you call it – co-working place, hub, something else?)

3. Hur har det fungerat att arbeta därifrån, i förhållande till ordinarie kontorsjobb? Motsvarade det era förväntningar, positiva och negativa överraskningar? Hur kan individen, organisationen och lokalsamhället påverkas?
(How has it been to work from the hub in comparison to the regular office? Did it meet your expectations, or any positive/negative surprises? What are the implications for the individual, the organisation, and the local community?)

4. Tankar om vägen framåt och potential för liknande lösningar på andra platser?
(Any thoughts about the way forward and the potential for similar solutions in other places?)

Interview schedule for the co-working chain

1. Vilken var den huvudsakliga drivkraften till att starta upp co-working spaces på de orter ni har? Är det främst baserat på lokal efterfrågan på den här typen av arbetsplats, eller snarare ett sätt att attrahera co-workare utifrån till orten? Eller något annat?
   (What were the main drivers of starting co-working places at those specific locations where you currently have hubs? Is it mainly based on the local demand for this type of workplace, or is it rather a way of attracting co-workers from outside to the area? Or any other drivers?)

2. Anpassar ni formen på kontorshotellet utifrån ortens förutsättningar på något sätt, och hur i så fall?
   (Do you adapt the form of the co-working place according to the local conditions in some way? And if so, how?)

3. Har ni som företag något samarbete med kommunen eller regionen, eller sker allt i privat regi?
   (Do you, as a firm, have any collaboration with the municipality or the region, or do you run the hubs 100 percent privately?)

4. Vad skulle krävas för att ni skulle starta upp er verksamhet i Västerbottens glesbygd?
   (What would you need to consider starting a hub in the sparsely populated areas in Västerbotten?)

5. Hur hanterar ni oförutsägbarheten med korta kontrakt, vad gäller intäkter?
   (How do you handle the unpredictability of short contracts, in terms of income?)

6. Vilka är fördelarna med att vara en kedja? Lättare att ta risker?
   (What are the benefits of being a chain? Is it easier to take risks?)

7. Hur löser ni försäkringsfrågan och arbetsmiljöfrågan?
   (How do you handle issues linked to insurance and work environment?)

8. Vad för fysiska förutsättningar på lokalen är viktiga när ni etablerar er? Lokalens läge, tillgänglighet, storlek på byggnaden, innemiljöns utformning? Erbjuder ni alltid kontorsutrustning (datorer, etc.) eller är det bara i de dyrare kontrakten?
   (What kind of physical qualities are important when you establish a new hub? The location, the accessibility, the size of the premise, the design of the indoor environment? Do you always offer office equipment (computers, etc.) or is that only included in the more expensive contracts?)