



Nordregio

Local and regional experiences of remote work and multilocality

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Summary

This report is the second outcome of the project *Remote work: Effects on Nordic people, places and planning 2021-2024*. Its primary aim is to provide a deeper understanding of how the spatial trends associated with increased remote work are affecting Nordic municipalities and regions. It explores the usefulness and reliability of available statistical data for understanding the effects of increased remote work at the regional and local level. Further, it draws directly on the experiences of regional and local stakeholders to understand the effects, challenges and opportunities, and planning responses associated with increased remote work.

Our findings point to substantial challenges when it comes to understanding the effects of increased remote work on regions and municipalities using statistical data alone. For example, internal migration data shows that people were more likely to move from the capital areas during the pandemic. Unfortunately, however, this data sheds little light on the motivation for these moves and there is no way of identifying the degree to which opportunities for increased remote work was a driver.

When it comes to understanding changes to the temporary population, so-called activity data can provide useful insights. Our analysis of Google Mobility Data from two sub-regions in the popular second home region of Etelä-Savo, Finland, clearly highlights the seasonal changes in activity level. When combined with other types of data and local knowledge, this could have great potential as a way of understanding fluctuations in activity levels in a region. One major limitation in our case, however, was the lack of a seasonally representative pre-pandemic baseline. As a result, it is difficult to draw any conclusions regarding potential longer-term effects of the pandemic on the temporary population in the region based on this data alone.

Surveying regional and local actors about their experiences is one way of gaining a deeper and more nuanced understanding of the implications of remote work for local development and planning. Overall, survey participants were more likely to report positive changes in their permanent or temporary populations (i.e., more people moving in or spending time in the municipality / region). This was generally seen in a positive light, generating opportunities for long-term economic growth, maintaining public services, and revitalising the community. Participants also reported challenges, particularly related to increased housing demand and pressure on public services and infrastructure. Though increased remote work was clearly seen as playing a role in the changes observed, it was not the only factor at play and there was a degree of uncertainty evident about what the future holds. Despite this, many respondents reported proactive planning responses to supporting or promoting increased remote work in their municipalities and regions.

Overall, this second report supports the central finding of the first – that there is great potential for Nordic cooperation in developing strategies to address the challenges and make the most of the opportunities associated with increased remote work for Nordic regions and municipalities. For national policy makers, understanding the nature of the changes that have occurred since the pandemic, and the degree to which these changes relate to increased remote work, is a real challenge. At the local and regional level, the nature of the challenges and opportunities experienced appears to be fairly similar between the countries. Collaboration at both levels could be incredibly valuable in strengthening both national and local efforts to make the most of the opportunities increased remote work offers for Nordic people, places, and planning in the long term.

The project *Remote work: Effects on Nordic people, places and planning 2021-2024* was commissioned by stakeholders from the Nordic Co-operation Programme for Regional Development and Planning 2021-2024. This report received additional support from the Finnish Chairmanship of the Nordic Council of Ministers under the direction of the Nordic Ministers for Regional Development.

Sammanfattning

Denna rapport är den andra publikationen från projektet Remote work: Effects on Nordic people, places and planning 2021-2024. Publikationens primära mål är att bidra till ökad förståelse för hur ändrade flytt- och pendlingsmönster kopplade till ökat distansarbete påverkar nordiska kommuner och regioner. I rapporten undersöks användbarheten och pålitligheten hos tillgängliga statistiska data för att förstå effekterna av ökat distansarbete. Den andra delen av rapporten bygger på en enkät med lokala aktörer där målet varit att förstå de effekter, utmaningar och möjligheter som ökat distansarbete innebär, samt planeringsåtgärder i relation till detta.

Våra resultat pekar på stora utmaningar när det gäller att förstå effekterna av ökat distansarbete på regioner och kommuner enbart med hjälp av statistiska uppgifter. Statistik över intern migration visar till exempel att människor var mer benägna att flytta från huvudstadsområdena under pandemin. Datat visar dock inte anledningen till den ökade flyttbenägenheten och det finns inget sätt att identifiera hur många som flyttade på grund av ökade möjligheter till distansarbete.

För att förstå förändringar i den tillfälliga befolkningen kan så kallade aktivitetsdata (activity data) ge värdefulla insikter. Vår analys av Google Mobility-data från två delregioner i Etelä-Savo, som är en populär region för fritidshus, visar tydligt på säsongsförändringar i aktivitetsnivån. I kombination med andra typer av data och lokal kunskap kan aktivitetsdata ha stor potential som ett sätt att förstå fluktuationer i aktivitetsnivåerna i en region. En stor begränsning i vårt fall var dock avsaknaden av en representativ och säsongsuppdelad baslinje över aktiviteten innan pandemin. Därför är det svårt att dra slutsatser om pandemins eventuella långsiktiga effekter på den tillfälliga befolkningen enbart på grundval av dessa uppgifter.

Att fråga regionala och lokala aktörer om deras erfarenheter är ett sätt att få en djupare och mer nyanserad förståelse för distansarbetets konsekvenser för lokal utveckling och planering. Detta gjordes i projektet genom en enkät som gick ut till lokala aktörer på kommunal- och regional nivå. Överlag rapporterade majoriteten av respondenterna om positiva förändringar i den permanenta- eller tillfälliga befolkning (d.v.s. fler människor som flyttar in eller tillbringar tid i kommunen/regionen). Detta sågs i allmänhet som något positivt, som skapar möjligheter till långsiktig ekonomisk tillväxt, upprätthåller offentliga tjänster och vitaliserar samhället. Deltagarna rapporterade också om utmaningar, särskilt när det kommer till ökad efterfrågan på bostäder och ökat tryck på offentliga tjänster och infrastruktur. Trots att ökat distansarbete tydligt ansågs spela en roll för de förändringar som observerades, var det inte den enda faktorn och det fanns en viss osäkerhet kring framtiden. Ett flertal av respondenterna rapporterade om en proaktiv planering för att stödja eller främja ökat distansarbete i sina kommuner och regioner.

På det hela taget stöder denna andra rapport den första rapportens centrala slutsats - att det finns en stor potential för nordiskt samarbete när det gäller att utveckla lokala strategier för att ta itu med utmaningarna, samt utnyttja de möjligheter, som är förknippade med ökat distansarbete. För nationella beslutsfattare är det en stor utmaning att förstå arten av de förändringar som har skett sedan pandemin, och i vilken utsträckning dessa förändringar är relaterade till ökat distansarbete. På lokal och regional nivå verkar karaktären på de utmaningar

och möjligheter som upplevts vara ganska lika mellan de nordiska länderna. Samarbete på såväl nationell- som lokal nivåer är värdefullt för att stärka såväl nationella som lokala insatser för att på lång sikt ta tillvara på de möjligheter som ökat distansarbete erbjuder för människor, platser och planering i Norden.

Representanter från Nordiskt Samarbetsprogram för Regional utveckling och planering 2021-2024 gav Nordregio i uppdrag att genomföra projektet *Remote work: Effects on Nordic people, places and planning 2021-2024*. Den här rapporten har fått ytterligare stöd från det finska ordförandeskapet i det Nordiska Ministerrådet under ledning av de nordiska ministrarna med ansvar för regional utveckling.



1. Introduction

Remote work, distansarbete, hjemmearbejde, etätyö, fjarvinna – no matter what you call it, it is difficult to ignore the significance of this topic in discussions about the future of work since the onset of the COVID-19 pandemic. Although the long-term effects are far from clear, evidence suggests that increased levels of remote work are here to stay, at least in some form or another. This report considers the potential impacts of this for people, places and planning in the Nordic Region, with a focus on deepening understanding of potential effects, challenges, and opportunities at the regional and local level.

As stated in the first report of this series (Randall et al., 2022), the connection between remote work and rural and regional development has a long history, with discussions of a digitally fuelled 'regional renaissance' dating back to at least the 1980s (Läpple, 2001; Milder, 2020). These prophecies have, for the most part, gone unrealised. Digitalisation has generally gone hand-in-hand with urbanisation (Graham, 2004; Kourtit, 2016; Scott, 2011), and digital innovation has been strongly linked to the geographical clustering of companies (Morgan, 2004). One of the key arguments explaining this has been that, although information and communication technologies are highly effective in *transmitting information* across large physical distances, the *production of knowledge* remains a highly social process which still requires physical proximity (Morgan, 2004). Simply put, the outcomes generated through online interactions were not comparable to those which could be achieved face-to-face.

The COVID-19 pandemic has challenged this idea. With so many workers forced to shift their activities online, tools and processes were quickly developed, adopted, and refined to support online collaboration. These were surprisingly effective, triggering a wide range of commentary about the potential for a longer-term shift to remote work post-pandemic (see: Dahik et al., 2020; OECD, 2021; Remote Lab & Future Place Leadership, 2021; Sostero et al., 2020) and renewed interest in the potentials of remote work to shape urban and regional development (Milder, 2020; OECD, 2021; Tomaz et al, 2021). It is in this context that this research project seeking to understand the implications of increased remote work for Nordic people, places and planning was commissioned by stakeholders from the Nordic Co-operation Programme for Regional Development and Planning 2021-2024.¹ The project also received additional support from the Finnish Chairmanship of the Nordic Council of Ministers under the direction of the Nordic Ministers for Regional Development. The

1. For more information see: <https://nordregio.org/about/nordic-thematic-groups-2021-2024/>

project also received additional support from the Finnish Chairmanship of the Nordic Council of Ministers under the direction of the Nordic Ministers for Regional Development to conduct the analyses presented in this report.

Research framework

This report is the second outcome of the project *Remote work: Effects on Nordic people, places and planning 2021-2024*. The basic project hypothesis is that the remote working practices normalised during the pandemic will remain in some form even after the pandemic subsides, and that this will have knock-on effects for commuting practices and living preferences, as well as further implications for regional development and planning (see Figure 1).

Within the project title, the **people** aspect primarily refers to concrete changes in daily life experienced by some workers due to changed work practices. These relate directly to the practice of working remotely but also includes changes in lifestyles and routines. The **places** aspect deals with the territorial effects of these changing work practices, lifestyles, and routines. Importantly, these effects are likely to differ greatly between regions and municipalities, and understanding these different effects is a key goal of the project. Finally, the **planning** aspect addresses the implications of these changes for Nordic policymakers and planners. It considers the implications for cities, for rural areas, and for regional development in general.

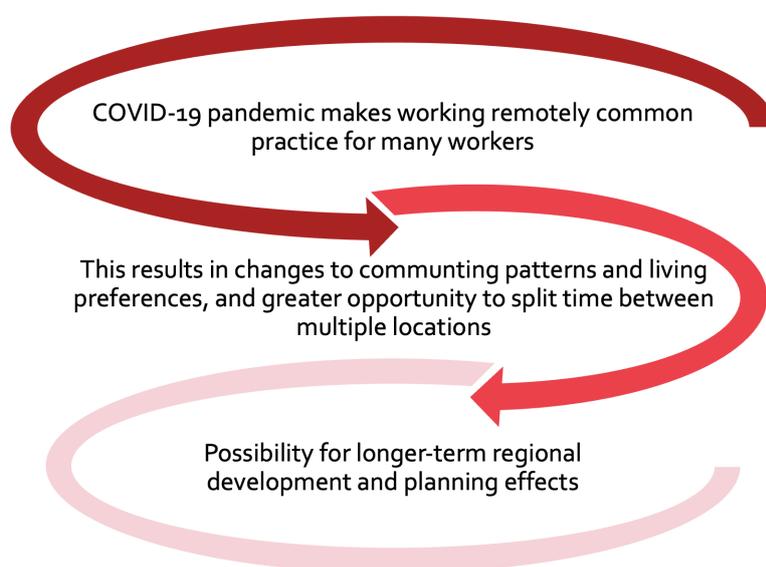


Figure 1. Project hypothesis

The first report from the project aimed to provide a broad understanding of the current situation regarding remote work in the Nordic Region, particularly with relation to potential urban and regional development effects. Its focus was primarily on national-level policy and planning frameworks in the Nordic countries. This, the second report in the series, seeks to build on those findings by deepening the analysis at the local and regional level. The research was guided by the following questions:

- What are the potential effects of remote work and multilocality in the Nordic

- countries for different types of regions and municipalities?
- What data is most useful for understanding the trends associated with increased remote work and multilocality in Nordic regions and municipalities?
 - What challenges and opportunities may be associated with increasing remote work and multilocality in Nordic regions and municipalities?

It included:

- Detailed statistical analysis of two "cases", the first exploring internal migration data from the Nordic National Statistical Institutes and the second using Google Mobility Data.
- A survey targeting regional and municipal actors in the Nordic countries which received 226 responses.

A detailed account of the methodology for each part of the research can be found at the beginning of the relevant chapter.

Report overview

The findings of the report are presented in two chapters.

Chapter 2. A quantitative approach to understanding the effects of remote work on regions and municipalities, presents the findings of two statistical case studies. The first case study seeks to better understand the accelerated internal outmigration from the capital regions that was experienced during the pandemic, focusing on who out migrated and where they went. It begins by exploring outmigration from all Nordic capital regions before zooming in on the case of Copenhagen. The second case study explores so called "activity data", considering its usefulness and reliability when it comes to understanding changes in the extent to which people split their everyday lives across multiple locations (often referred to as multilocality). It is based on Etelä-Savo, a Finnish Region with a high concentration of second homes.

Chapter 3. A qualitative approach to understanding the effects of remote work on regions and municipalities, presents the findings of a survey that sought to understand the impact of increased remote work at the local and regional level in the Nordic Region. Participants were local and regional stakeholders in the Nordic countries, who were asked about their experiences of changes to both the permanent and temporary populations, the role of remote work as a driver of these changes and the planning strategies used to deal with these changes.

The report concludes with a short section reflecting upon the overall findings and considering the key questions for Nordic cooperation on remote work and multilocality going forward.



2. A quantitative approach to understanding the effects of remote work on regions and municipalities

The patterns of migration, mobility, and multilocality observed in the Nordic countries during the pandemic support the idea that increased remote work will have spatial planning implications (see Box 1 for concept definitions). Understanding the precise nature of these trends, their longevity, and the degree to which they have been driven by increased opportunities for remote work, is, however, somewhat of a challenge. Data on internal migration suggests that people were in fact far more likely to move from the capital areas during the pandemic than in the years leading up to it. Destination preferences followed similar patterns to those observed pre-pandemic, in most cases, favouring neighbouring municipalities and regions. Using the case of Denmark, it was also possible to identify young families as those most likely to have moved. Unfortunately, however, this data sheds little light on the motivation for these moves and there is no way of identifying the degree to which opportunities for increased remote work was a driver.

When it comes to understanding changes to the temporary population, so-called activity data can provide useful insights. Our analysis of two sub-regions in the popular second home region of Etelä-Savo, Finland, using Google Mobility Data, clearly highlights the seasonal changes in activity level. When combined with other types of data and local knowledge, this could have great potential as a way of understanding fluctuations in activity levels in a region. One major limitation in our case, however, was the lack of a seasonally representative pre-pandemic baseline. As a result, it is difficult to draw any conclusions regarding potential longer-term effects of the pandemic on the temporary population in the region based on this data alone.

This chapter presents the results of two statistical case studies. The first seeks to better understand the accelerated internal outmigration from the capital regions that was experienced during the pandemic, focusing on who out migrated and where they went. The second explores so called activity data, considering its usefulness and reliability when it comes to understanding changes in the extent to which people split their everyday lives across multiple locations.

Migration, mobility, and multilocality

In considering the spatial consequences of increased remote work, we have worked with three central concepts: migration, mobility, and multilocality. These are complex, interrelated, and overlapping terms, and there are vast bodies of scholarship associated with understanding each of them. Our goal here is not to give a detailed or conclusive account of this scholarship, but rather provide a simple, relatable, working definition for each term that can be used to guide our readers through the remainder of this report. The use of the different terms is intended as a preliminary strategy to distinguish between three different types of spatial changes that may occur as a result of increased remote work:

- changing regarding where to live (migration);
- changes to daily movements (mobility);
- changes in the way people split their time between multiple locations (multilocality).

Migration: long-term, stable movements involving residential relocation

Migration can be understood as a movement between two or more physical places but is distinct from mobility due to its more permanent state. Migration generally involves an official change in one's registered status from one address to another. This may or may not include movement across administrative boundaries.

Mobility: physical movement, generally to pursue short-term goals, most often on a daily basis

In the social sciences, the term **mobility** refers to a change in position within a system (Weichhart, 2009 in Nadler, 2009). It can be applied to movement through a social system or hierarchy (social mobility) or movement between two or more physical places (spatial mobility; Nadler, 2009). Here, we focus on spatial mobility and use the term to refer to regular, short-term, spatial movements (e.g., daily commuting).

Multilocality: the practice of carrying out active everyday life in multiple places. This generally implies access to, but not necessarily ownership of, more than one residence.

Of the three concepts, **multilocality** is perhaps the most difficult to define. It has been described as "an emerging concept between the terms of mobility and migration" (Nadler, 2009, p. 1). Unlike mobility, its rhythms are unlikely to be confined to a daily cycle and, in contrast to migration, it does not involve a permanent move but rather an ongoing connection with two or more places (Nadler, 2009; Rannanpää et al., 2022). The term is commonly used in Finland (*monipaikkaisuutta*) but is not familiar in the other Nordic countries. In Finland, multilocality is understood as a situation in which "instead of one fixed dwelling, people spend their everyday life or leisure time in several places, transiting between them" (Rannanpää et al., 2022, p. 2). Multilocality may have different drivers, including (though not limited to) work or study, leisure, or family situation (Rannanpää et al., 2022). It

should be noted that the definition we have chosen to use here is most closely aligned to the concepts of residential multilocality (as understood in literature from Germany, Schmidt-Kallert, 2016; Weichhart, 2015) and multilocal living (used in Finland).

Source: Randall et al. (2022)

Methodology

The statistical analysis undertaken for this report included identifying a range of possible indicators and assessing them based on two main questions: 1) how informative is the indicator (high, moderate, limited) and 2) how available and/or reliable is the data (high, medium, low)? Indicators were divided into five categories: a) transport/movement; b) where people spend time; c) migration; d) housing; e) other. The indicators identified under each category, along with notes on their availability and informative capacity, are shown in Table 1.

	Theme and indicator name	Description	Availability / reliability	Informative capacity	Comment
A	Transport/movement				
A1	Commuting (living place - work place)	Number of people commuting in or out to/from municipalities	High	Moderate	Could be highly useful overtime to understand changes in the distance between home and work
A2	Public transport trips	Number of passenger trips	Medium	Moderate	Labour intensive data collection and harmonisation process
A3	Daily mobility data	Number of people "active" in a zone	Low	High	Highly useful but challenging to work with and questions about reliability.
B	Where people spend time				
B1	Day population	Number of people in the municipality during the day (where people work)	High	Moderate	Useful when combined with night population (see A1 above)
B2	Night population	Number of	High	Moderate	Useful when

		people in the municipality during the night (where people live according to the registers)			combined with day population (see A1 above)
C	Migration				
C1	Municipal in- or out-migration	People moving in or out of municipality (total)	High	Limited	Has some explanatory capacity for identifying broad trends at the macro level over time but tells us nothing about who moved, where they went or why. Only relevant to permanent moves.
C2	Inter-municipal migration	People moving from one municipality to another	Moderate	Moderate	Possibility to identify who moved and where to but not freely available at the municipal level in all countries. Only relevant to permanent moves.
D	Housing				
D1	House prices	Sales prices for different housing types	Low	Moderate	Potential to be highly informative regarding changes in living preferences but problems with data reliability in less densely populated areas
D2	Number of house sales	Number of house sales	Low	Moderate	Potential to be highly informative regarding changes in living preferences but problems with data reliability in less densely populated areas
D3	Second homes	Number of second homes	High	Moderate	Useful in understanding the potential for multilocality but says nothing about frequency or fluctuation of use

D4	Consumption in houses	Usage of electricity, heat or water or production of household waste or sewerage from houses	Low	High	Highly useful indicator in very small areas but extremely difficult to collect / aggregate at larger geographic scales
E Other					
E1	Telework statistics	Proportion of people working from home	High (national level only)	High (national level only)	Very useful and easy to obtain (Labour Force Survey) but only available at the national level for most countries
E2	Public coworking facilities	Name and address of coworking office/facility	Low	Limited	Difficult to collect / harmonise and provides no information on use
E3	Private coworking facilities	Name and address of coworking office/facility	Low	Limited	Difficult to collect / harmonise and provides no information on use
E4	Use of Teams/zoom	The number of active users of Teams, zoom or other teleconference software	Low	Limited	Difficult to obtain at sub-national level and provides no information on use frequency
E5	Credit card transactions	Number of credit card transactions	Low	High	High potential but difficult to obtain data on small enough spatial scales to be useful
E6	Social media data	Location data based on social media usage	Medium	Limited	Possibility to access data but challenges related to reliability and skewed samples

Table 1. Potential indicators of multilocality

It was beyond the scope of this project to explore all indicators in Table 1 in detail. Instead, we selected a smaller number of indicators to explore through dedicated case studies with the aim of further investigating the relationship between the availability / reliability of the data and the informative capacity of the indicators. Case study #1: Accelerated outmigration from capital city areas, is based on migration data (indicators C1 & C2). This data is deemed to be highly reliable and is available (at varying levels of detail) from the National Statistics Institutions in all countries. Its explanatory capacity however is limited to those who make permanent

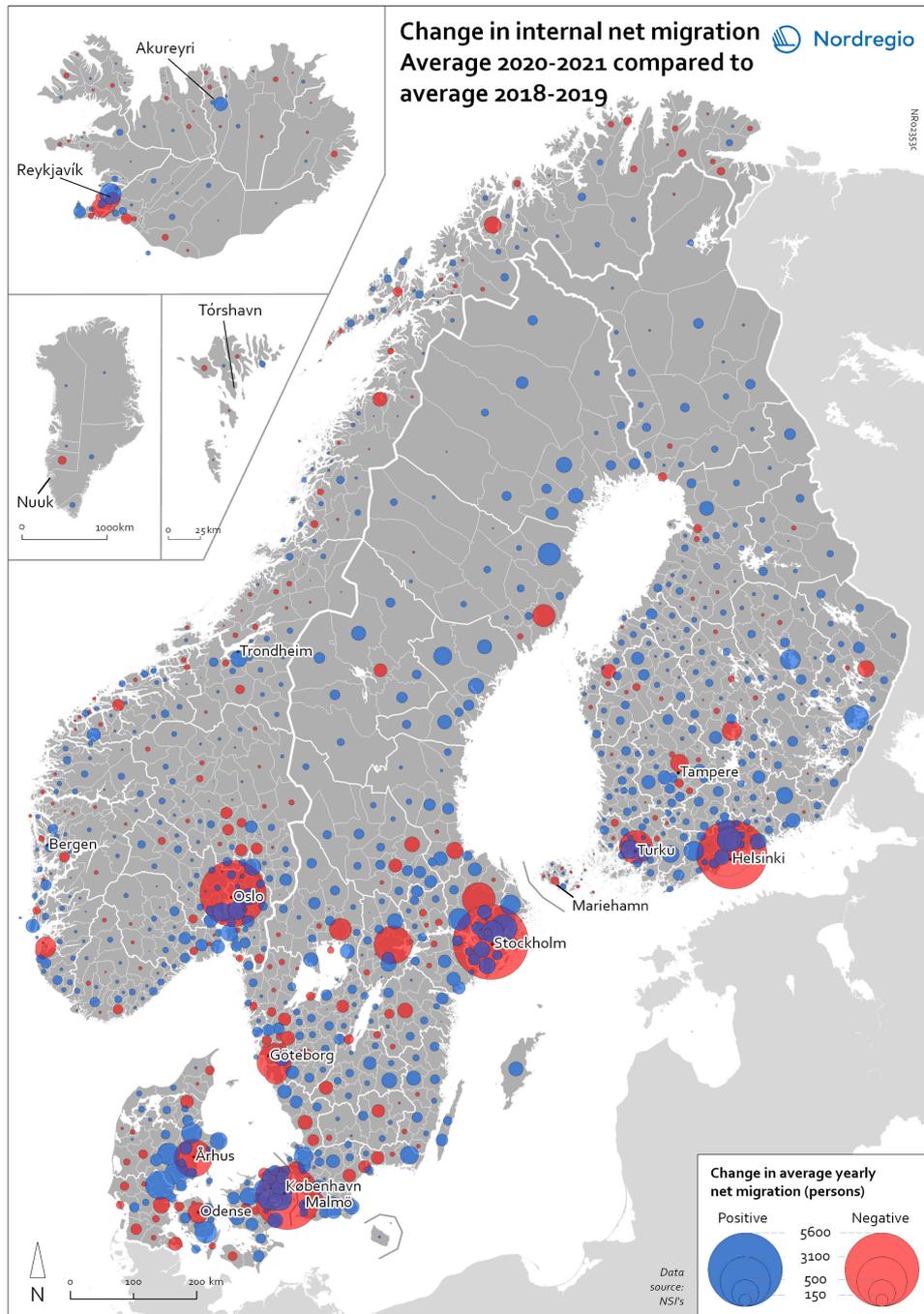
moves and the motivation for these moves is not always clear. This case draws on data from all five Nordic countries, before zooming in for a more detailed exploration of those moving away from Copenhagen and Frederiksberg to other parts of Denmark. Case study #2: Understanding multilocality through novel data sources, takes a micro perspective, exploring different sources of activity data in the Finnish region of Etelä-Savo (indicator A3). This area was of interest due to the large number of second homes in the region.

Case study #1: Accelerated outmigration from capital city areas

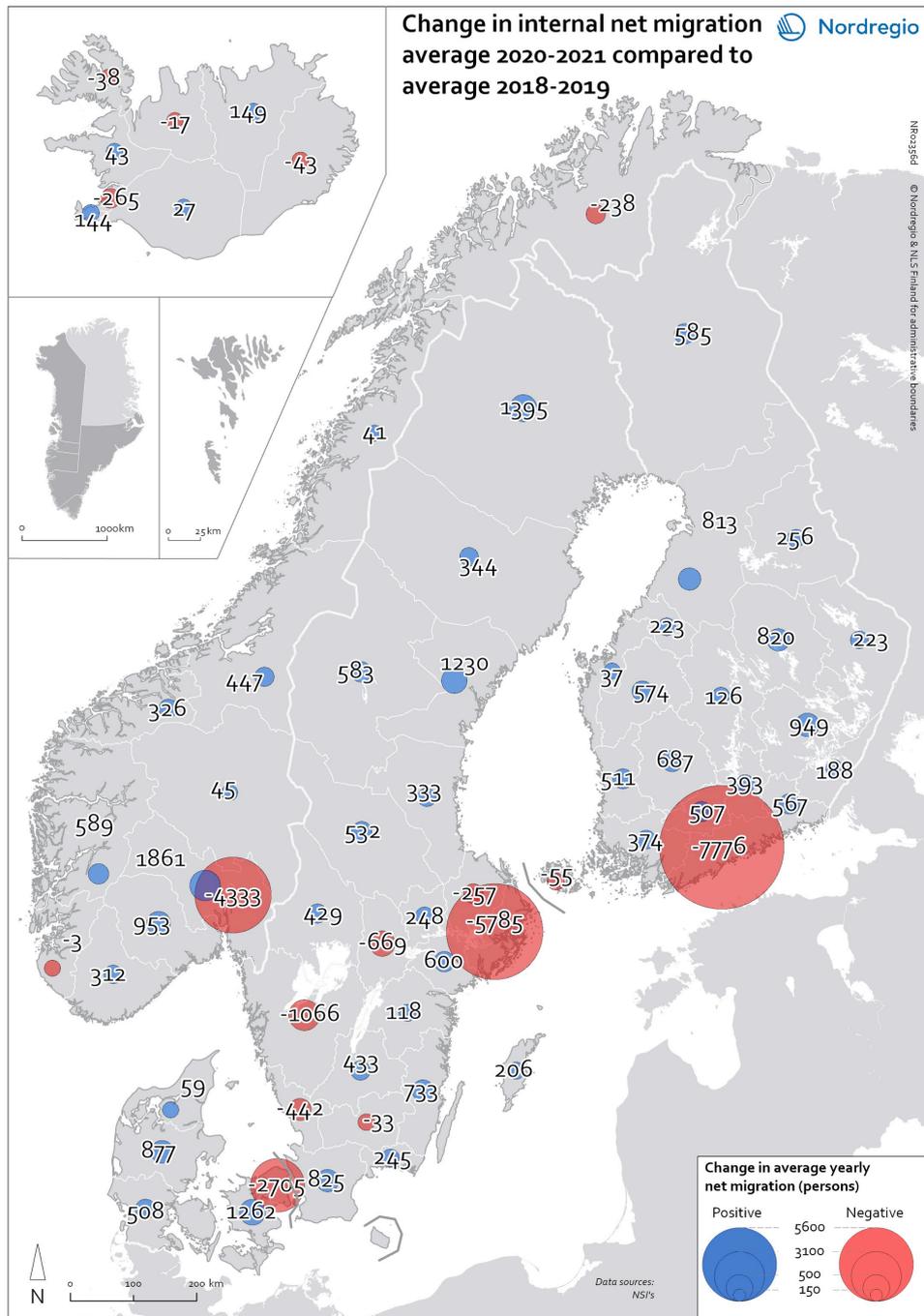
Increased outmigration from the Nordic capitals

Compared to the pre-pandemic years of 2018 and 2019, the pandemic years 2020 and 2021 showed a significant change in internal migration in the Nordic countries. Map 1 shows where internal net migration was negatively affected (more people moved out than in, red coloured dots) and where it was positively affected (more people moved in than out, blue dots). The size of the dots indicates the absolute change in net migration (in number of persons). The map clearly shows that the largest change was increased out-migration in the major urban areas. In 2018 and 2019 the combined internal net out-migration from Stockholm, Oslo, Helsinki and Copenhagen municipalities was approximately 5 500 persons but in 2020 and 2021 the internal net out-migration increased to approximately 43 000 persons, meaning that an extra 37 500 persons (equivalent to an average of 1.3 % of the population in these four municipalities) migrated to another municipality. While negative internal net-migration from the capital regions is not a new phenomenon (see Figure 2), this trend clearly increased in intensity during 2020 and 2021.

This pattern of increased internal outmigration is also evident at the regional level (see Map 2). In 2018 and 2019, the combined internal net out-migration from Stockholm, Oslo, and Copenhagen Regions was approximately 5 000 persons, while Helsinki Region experienced internal net in-migration of just over 15 000 persons. In 2020 and 2021 all four of these capital regions experienced internal net out-migration, with a combined total of approximately 31 000. This suggests that the outmigration from major cities experienced during the pandemic was more than simply a reorganisation of people within the capital regions (i.e., increased suburbanisation), and may have broader regional development implications.



Map 1. Change in internal net-migration in Nordic municipalities from 2018-2019 to 2020-2021.



Map 2. Change in internal net-migration in Nordic regions from 2018-2019 to 2020-2021.

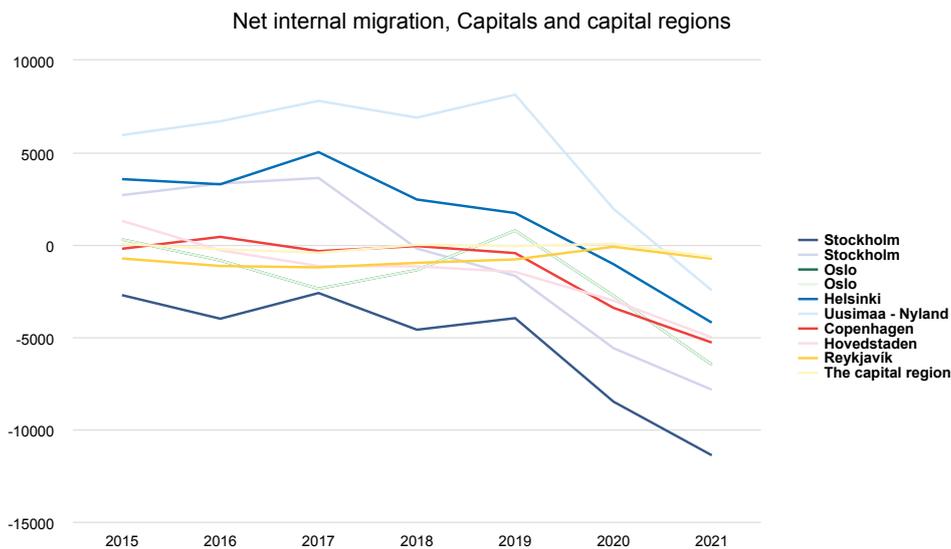
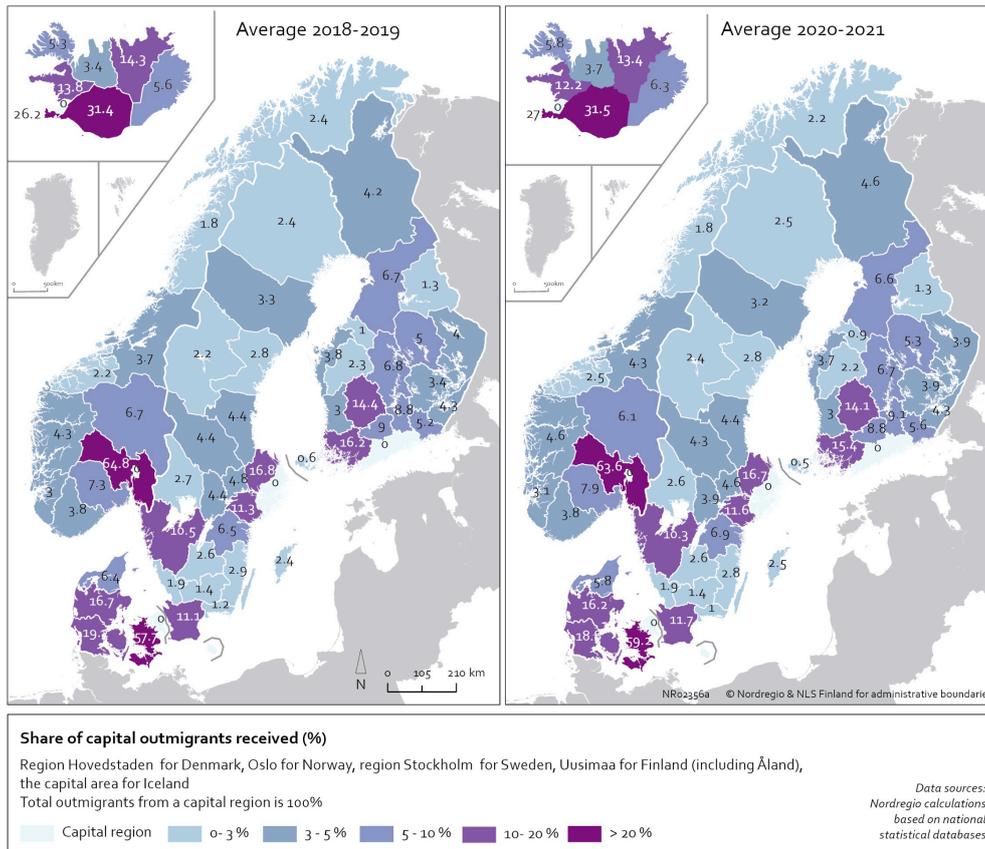


Figure 2. Internal net migration in the capital municipalities and regions in five Nordic countries 2015-2021.

While Map 1 and Map 2 are useful in identifying the broader trend of outmigration from larger urban areas, they do not provide any information about migration flows. That is, we cannot discern from this map who moved or where they went. Map 3 provides greater insight in this respect. It shows the proportion of internal out-migrants from each capital region who were received by each other region in the respective country in 2018-2019 and 2020-2021. Interestingly, the pattern is strikingly similar across the two time periods. In all five countries the main destinations of outmigrants from the capital regions was the adjacent regions in both 2018-2019 and in 2020-2021. In Finland, Iceland, and Sweden, regions containing other large cities also attracted a high proportion of capital out-migrants (Pirkanmaa Region (City of Tampere) in Finland; Norðurland eystra (City of Akureyri) in Iceland; and Region Västra Götaland (City of Göteborg) and Region Skåne (City of Malmö) in Sweden). This suggests that, although the intensity of outmigration from the capital regions increased during the pandemic, destination preferences remained consistent, at least from a regional perspective.

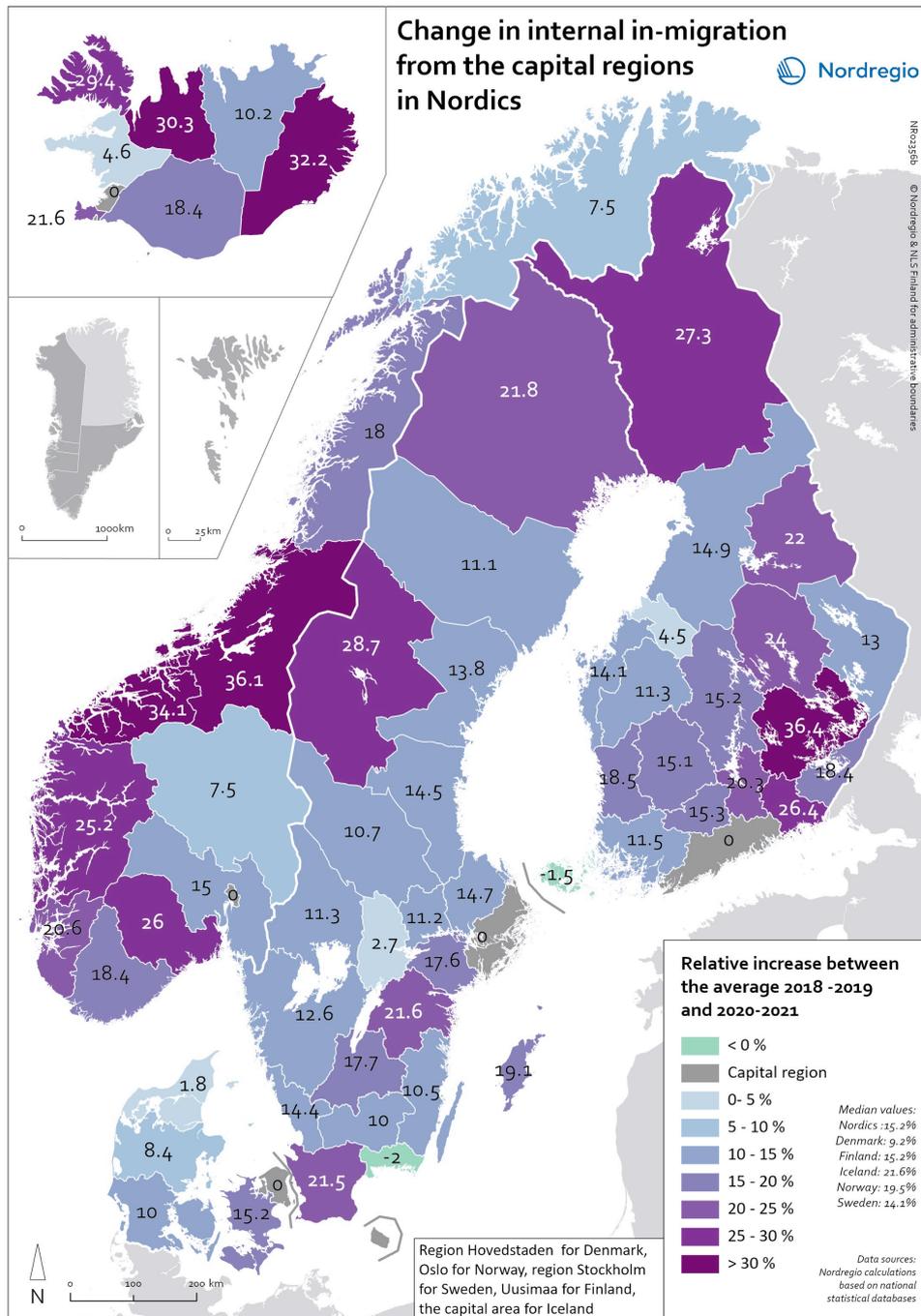
Destination of internal outmigrants from the capital regions



Map 3. Destination of internal outmigrants from the capital regions, average 2018-2019 and average 2020-2021.

Despite the remained pattern of out-migrants, the increased intensity of outmigration likely affected regions to different extents. Map 4 shows the relative change in the number of internal in-migrants received from the capital region for each other region in the respective country between 2018-2019 and 2020-2021. Notably, the overall increase in intensity can be observed in almost all regions. All regions received a larger number of in-migrants from their respective capital regions in 2020-2021 than in 2018-2019, with the exceptions of Blekinge (Sweden) and Åland.

Aside from this general trend, several regions stand out as having experienced a considerably larger relative increase in in-migrants from the capital region during the pandemic than in the two years prior. In Finland, the popular tourist regions of Lappi and Etelä-Savo stand out, as does Region Jämtland Härjedalen in Sweden. In Norway and Iceland, several regions saw substantial relative increases in the number of in-migrants from the capital region, including Trøndelag (36.1%), Møre og Romsdal (34.1%), Vestfold og Telemark (26%), and Vestland (25.2%) in Norway; and Austurland (32.3%), Norðurland vestra (30.3%), and Vestfirðir (29.4%) in Iceland. Interestingly, the increases were relatively modest in Denmark, suggesting that many of the outmigrants from Copenhagen (see Map 1) remained within the capital region.



Map 4. Change in internal in-migration from the capital regions, 2020-2021 compared to 2018-2019

Map 3 and Map 4 are based on regional level data and, as such, show migration patterns at a rather high level. In some Nordic countries, data is also freely available at the municipal level and broken down by different demographic variables (see Table 2). This makes it possible to explore migration patterns in greater detail.

Country	Regional level			Municipal level		
	Aggregated	Age	Gender	Aggregated	Age	Gender
Denmark	freely available	freely available	freely available	freely available	freely available	freely available
Finland	freely available	freely available	freely available	available at cost	freely available	freely available
Iceland	freely available	freely available	freely available	available at cost	available at cost	available at cost
Norway	freely available	available at cost				
Sweden	freely available	available at cost				

Table 2. Availability of data on migration flows in the Nordic countries. Note: Migration flows refers to data that identifies both the origin and the destination region / municipality of each migrant

Deep dive: Who out-migrated from Copenhagen and where did they go?

Given the high level of detail available in the Danish data, the following section will use Copenhagen Municipality as a case study in order to take a closer look at the increased internal out-migration in one of the capital city municipalities. As the municipality of Frederiksberg is located inside the municipality of Copenhagen and has very similar population characteristics, we have chosen to combine data from the two municipalities. As such, when we refer to Copenhagen, it should be noted that this also includes Frederiksberg.

The municipal level maps produced in the project so far have focused on internal net migration (in migrants – outmigrants = net migration). As such, a negative score may be driven by an increase in people moving out, a decrease in people moving in, or a combination of the two. Figure 3 clearly demonstrates that the accelerated internal outmigration experienced in Copenhagen Municipality in 2020 and 2021 was driven by increased outmigration. Internal in-migration continued to increase at similar levels to pre pandemic (3.4% from 2019 to 2020), however out-migration increased by a much larger extent (13%).

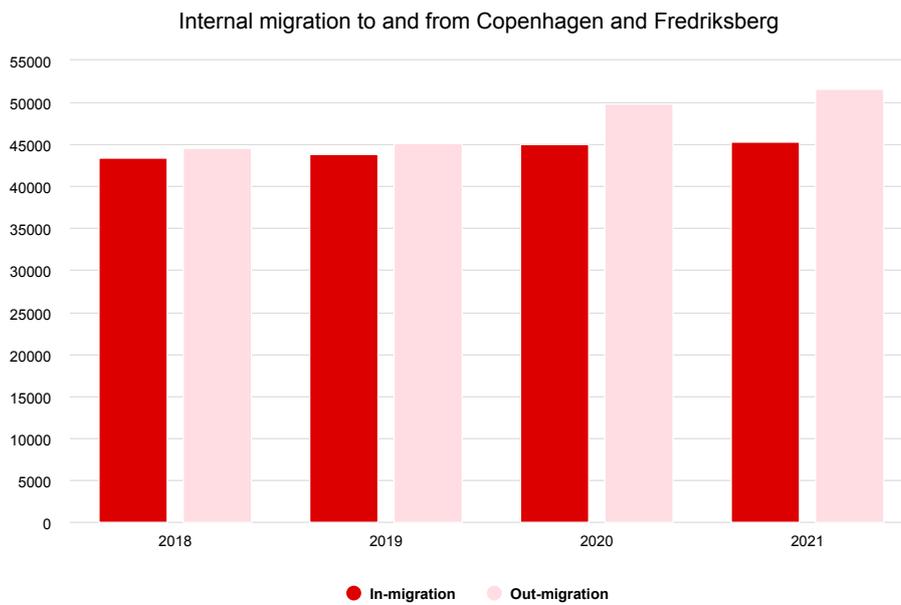


Figure 3. Internal migration to / from Copenhagen and Fredriksberg.

But who moved out? Figure 4 shows the change in the average number of internal out-migrants between 2018-2019 and 2020-2021 by age. Two main age groups were particularly likely to out-migrate: Children aged 0-5 and people aged 27-37. This indicates that, as has been the typical trend in the Nordics for some time, young families were those most likely to out-migrate from the capital during the pandemic. It appears, however, that the intensity of outmigration among this group has increased (see Figure 5). Together, the number of out-migrants in the age groups 0-5 and 27-37 years increased by 14% in 2020 when compared to 2018 and by a further 20% in 2021.

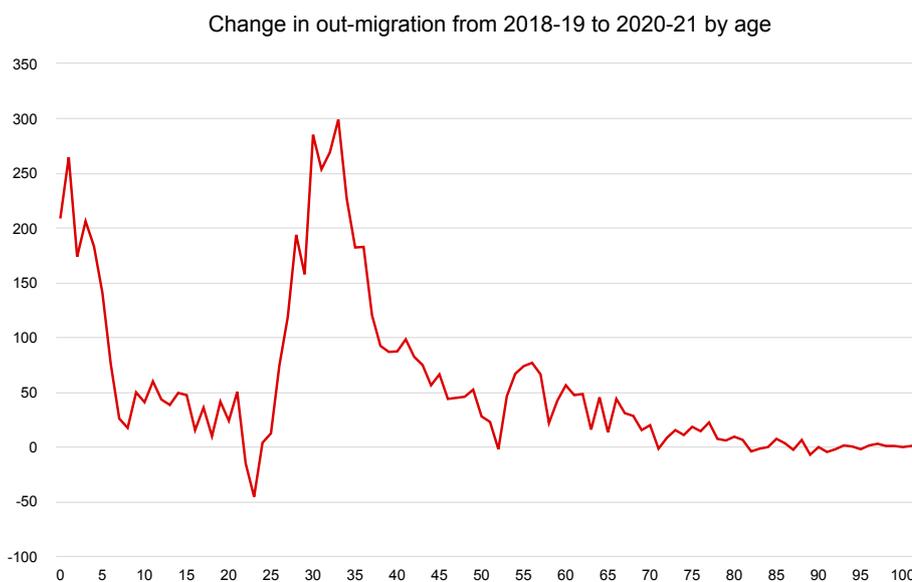


Figure 4. Change in out-migration from Copenhagen and Frederiksberg by age, 2018-19 to 2020-21.

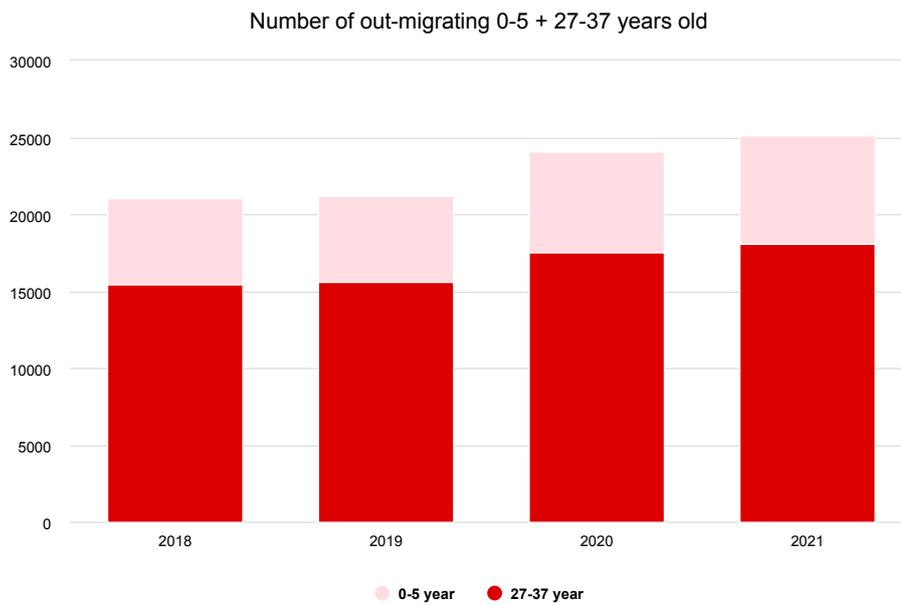
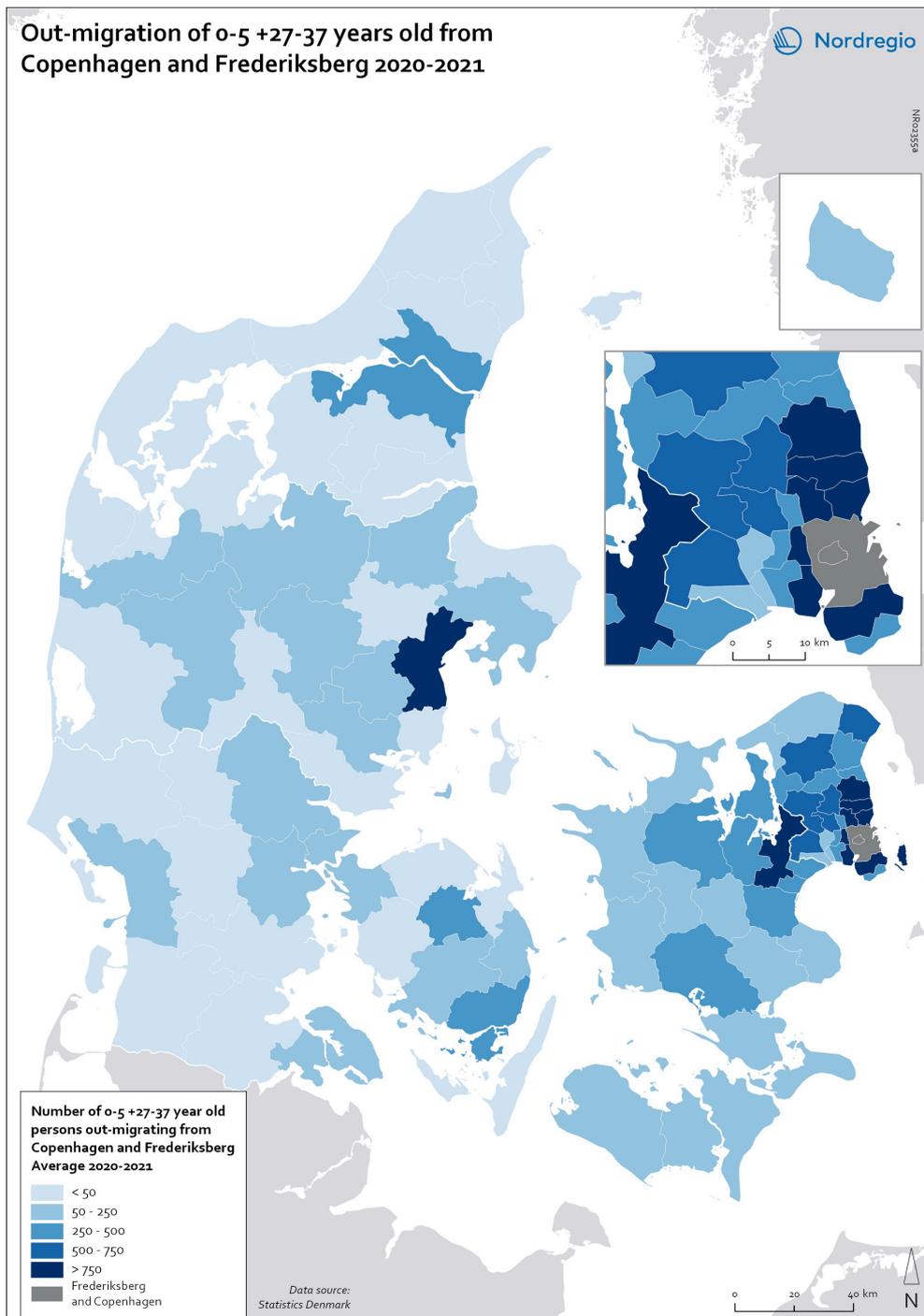


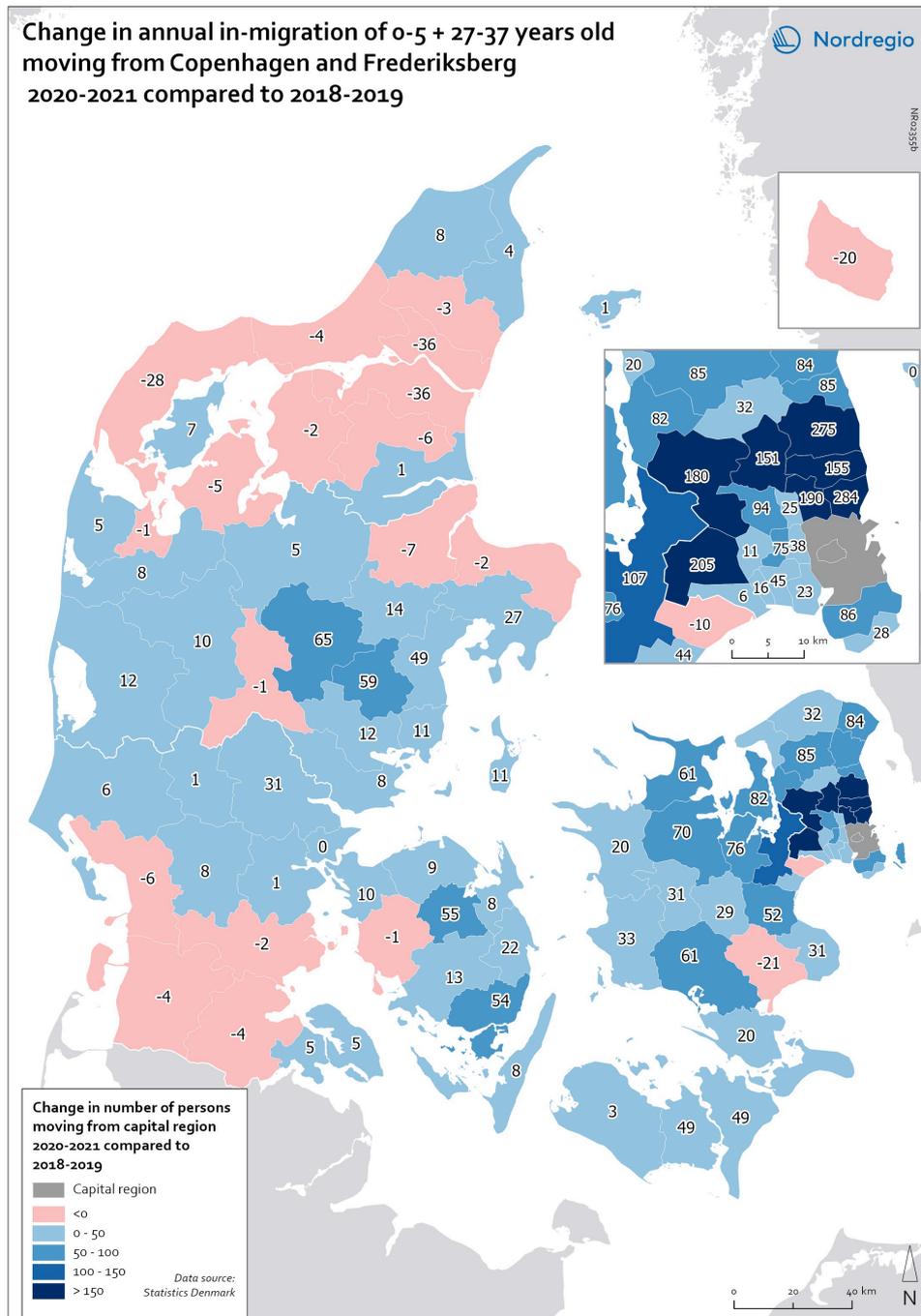
Figure 5. Number of 0-5 and 27-37 year olds who out-migrated from Copenhagen and Frederiksberg, 2018-2021.

The next interesting question is where these young families went. Map 5 shows the destination municipalities of outmigrants from Copenhagen and Frederiksberg municipalities for the age groups 0-5 and 27-37 years in 2020 and 2021. With the exceptions of Aarhus and, to a lesser degree, Aalborg, it is clear that most families with young children who moved from Copenhagen during the pandemic did not move very far. The highest levels of in-migration among this group are found in the surrounding municipalities.



Map 5. Outmigration of 0-5 and 27-37 year olds from Copenhagen and Frederiksberg, 2020-2021.

A similar pattern emerges if we compare in-migration from the capital region during the pandemic (2020-2021) with the patterns observed in the two years prior (2018-2019, Map 6). Map 6 clearly demonstrates that the largest increase in in-migrants aged 0-5 and 27-37 years from Copenhagen during the pandemic were found in municipalities within the capital region. Larger than average increases can also be observed in parts of Region Sjælland (adjacent to the capital region), municipalities close to Aarhus, in Odense, and in the rural municipality of Svendborg. Map 6 also reveals that the high proportion of young families moving from Copenhagen to Aarhus and Aalborg was not a significant change from pre-pandemic migration patterns.



Map 6. Change in annual in-migration of 0-5 and 27-37 year olds moving from Copenhagen and Frederiksberg, 2020-2021 compared to 2018-2019.

The finding that a larger number of young families moved from large cities in favour of the surrounding suburbs is consistent with the theoretical and anecdotal evidence presented in the first report (see Randall et al., 2022). The report further contended that reduced need for daily travel to the workplace may result in people being more likely to move greater distances, or to a less densely populated area. Neither of these contentions appear to be supported in the case of young families out-migrating from the Danish capital (see Figure 6 and Figure 7).

Regarding migration distance, very little change occurred between 2018 and 2021. Consistent with the pre-pandemic trend, more than half of out-migrants moved to a municipality less than 25 km from Copenhagen and only one in five moved to a municipality more than 100 km away. Similarly, only a slight change can be observed

in the tendency to move to a less densely populated area. In 2020 and 2021, the proportion of young families who moved from Copenhagen to an intermediate municipality was 2% higher, while those who moved to another urban municipality was 2% lower (see Figure 7). There were no notable gender differences.

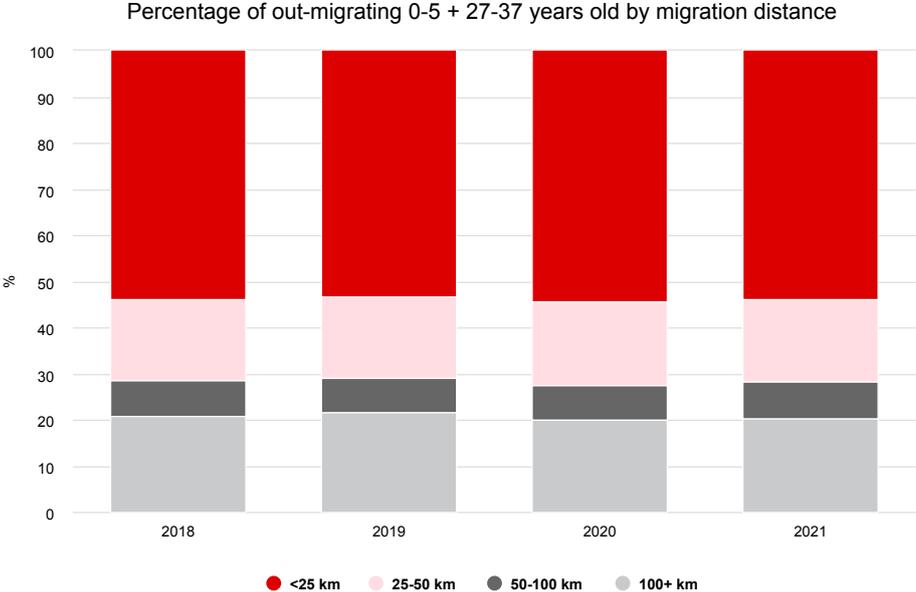


Figure 6. Outmigrants from Copenhagen & Frederiksberg aged 0-5 & 27-37 by migration distance.

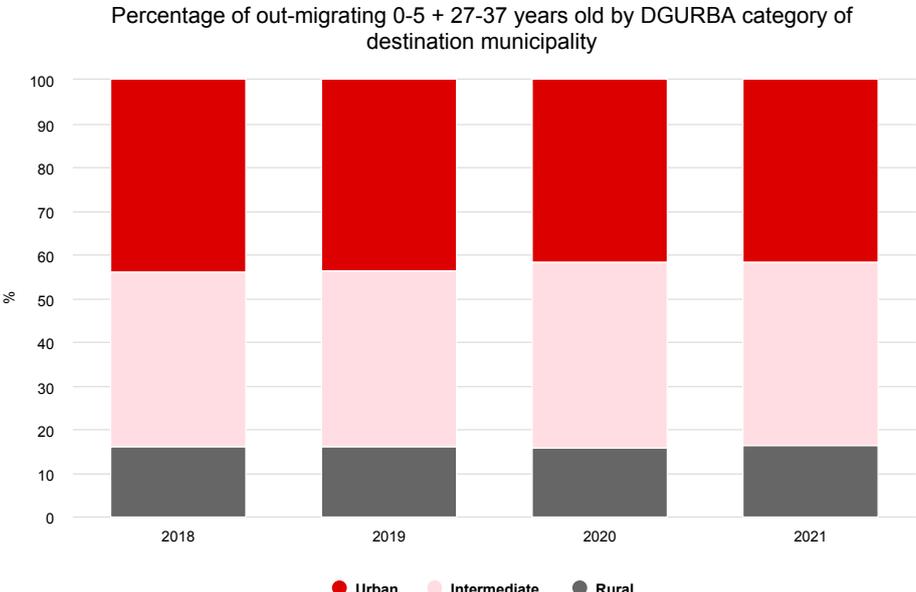


Figure 7. Outmigrants from Copenhagen & Frederiksberg aged 0-5 & 27-37 by territorial classification of destination municipality.

Case study #2: Understanding multilocality through novel data sources

Increased opportunities for remote work have also been linked to a greater likelihood of living ones' everyday life across multiple locations – A practice often referred to as multilocality. Multilocality is notoriously difficult to monitor, as the standard practice in most countries is that each person has only one official registered address (Slätmo et al., 2019). It is possible to understand the potential extent of the temporary population based on the number of dwellings available (e.g., second homes, tourist accommodation). Tracking changes in the use of these dwellings, however, is much more challenging. In this context, attention has been directed towards so-called activity data. Activity data is a form of big data that provides a 'record of human actions in the online or physical world that can be captured by computer' (Kay & van Harmelen, 2012). Activity data is collected by a range of private providers, including mobile network providers, social media companies, and hardware and software manufacturers (e.g., Telia, Google, Apple).

Using Google Mobility data to track second home use

During the pandemic, Google began providing COVID-19 Community Mobility Reports (Google, 2022). These reports are based on data from Google Map users who activate the location history setting in their mobile phone (the default setting is off). The data is anonymized, aggregated to the regional and sub-regional level, and categorised by six types of places: retail and recreation, groceries and pharmacies, parks, transit stations, workplaces, and residential. Each place category contains a range of places with similar characteristics. For example, the "parks" category includes places such as public gardens, castles, national forests, campgrounds, observation decks, etc. Importantly, this means that, while the "parks" category includes all established outdoor places within a region, it may not include general outdoors spaces found in many rural areas.

Google Mobility Data provides information on the daily relative change in a given activity, compared to a baseline value. The baseline value is the median activity level during the 5-week period from January 3 to February 6, 2020. For each region / sub-region and each type of activity there are seven individual baseline values: one for each day of the week. This makes it possible to compare activity levels based on when the activity is most likely to take place. For example, work-related mobility on a particular day can be compared to work-related mobility on the same day of the week during the baseline period. From time to time there are gaps in the data due to requirement to ensure anonymity when there are low numbers in data. [LR1] Google has made this data available with the aim of supporting public health officials in their work to stop the spread of COVID-19 and the original intention was that it would be available for a limited time period.

The remainder of this section seeks to understand the extent to which Google mobility data can be helpful in understanding changes to where people spend their time. Specifically, we seek to understand if people spent more time in a region with a large number of second homes since the onset of the COVID-19 pandemic in March 2020. The mid-eastern lake region Etelä-Savo (South Savo) in Finland has been chosen as a case-study as it is a region with small permanent population and high number of second homes both in absolute numbers and in relation to the permanent population (see Table 3).

Region	Sub region	Municipality	Population, 2020	Number of second homes, 2020	Estimated population when all second homes are in use, 2020	Territorial classification
Etelä-Savo	Mikkeli sub-region	Hirvensalmi	2 146	2 959	11 023	Rural
		Kangasniemi	5 334	3 605	16 149	Rural
		Mikkeli	52 859	10 345	83 894	Intermediate
		Mäntyharju	5 734	4 791	20 107	Rural
		Pertunmaa	1 672	1 808	7 096	Rural
		Total	67 744	23 508	138 268	
	Pieksämäki sub-region	Puumala	2 144	3 998	14 138	Rural
		Juva	6 024	2 099	12 321	Rural
		Total	8 168	6 097	26 459	
	Savonlinna (Nyslott) sub-region	Pieksämäki	17 529	3 069	26 736	Intermediate
		Enonkoski	1 365	755	3 630	Rural
		Rantasalmi	3 398	2 185	9 953	Rural
		Savonlinna	32 818	8 765	59 113	Intermediate
		Sulkava	2 487	2 193	9 066	Rural
		Total	57 596	16 967	108 497	
	Total	133 508	46 572	273 224		

Table 3. Second homes in Etelä-Savo Region, Finland. Note: "Estimated population when all second homes are in use" is based on an estimate of three residents per second home, plus the permanent population.

Google mobility data is available for the region as a whole and for three sub-regions (see Table 3). In this report, we provide a detailed analysis of Google Mobility Data for the sub-regions Mikkeli and Pieksämäki. Mikkeli is the largest of the sub-regions and has few gaps in the time series. Conversely, Pieksämäki is the smallest of the sub-regions and has gaps in the time series for some activities. We wanted to understand how these gaps affect the interpretation of the data.

Deep dive: How did activity levels change in Pieksämäki and Mikkeli sub-regions?

Figure 8 and Figure 9 show the daily relative change from the baseline activity level for all six activity categories in Mikkeli and Pieksämäki sub-regions during 2020, 2021 and 2022. The different activities are represented by different colours, while the different years are represented by the strength of the lines. To allow for comparison between the figures, the scale has been adjusted to -100 % to 200% from the baseline (Y axis). The figures clearly demonstrate the complexity of the data, with

large variations due to data gaps, seasonal changes for various types of activities, and variations due to days of the week and local holidays.

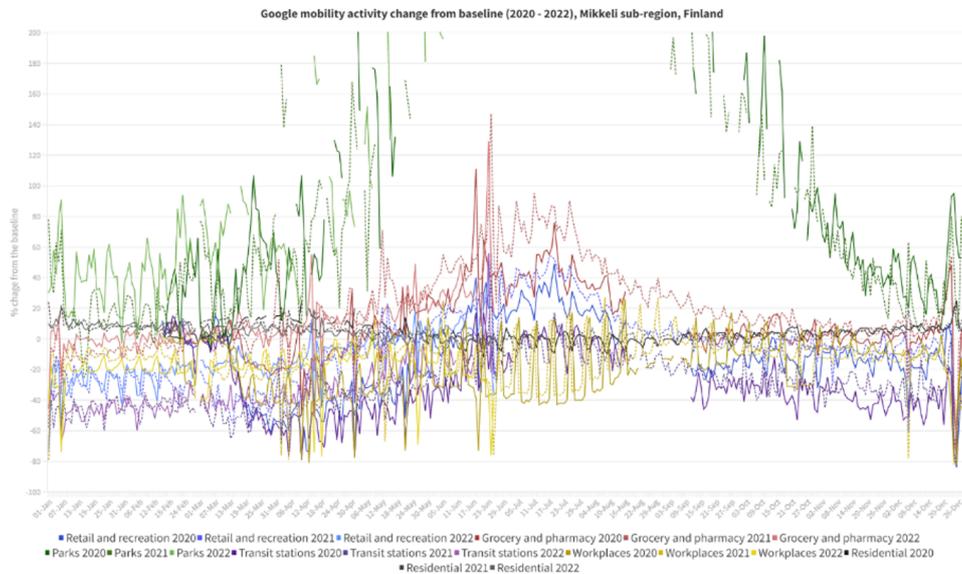


Figure 8. Google mobility activity change from baseline (2020-2022), Mikkeli sub-region, Finland. **Note:** it is possible to select / deselect activities and years from the legend to get a clearer picture of one or more aspects of the data. You can also click on any data point to see the exact value for a given day.

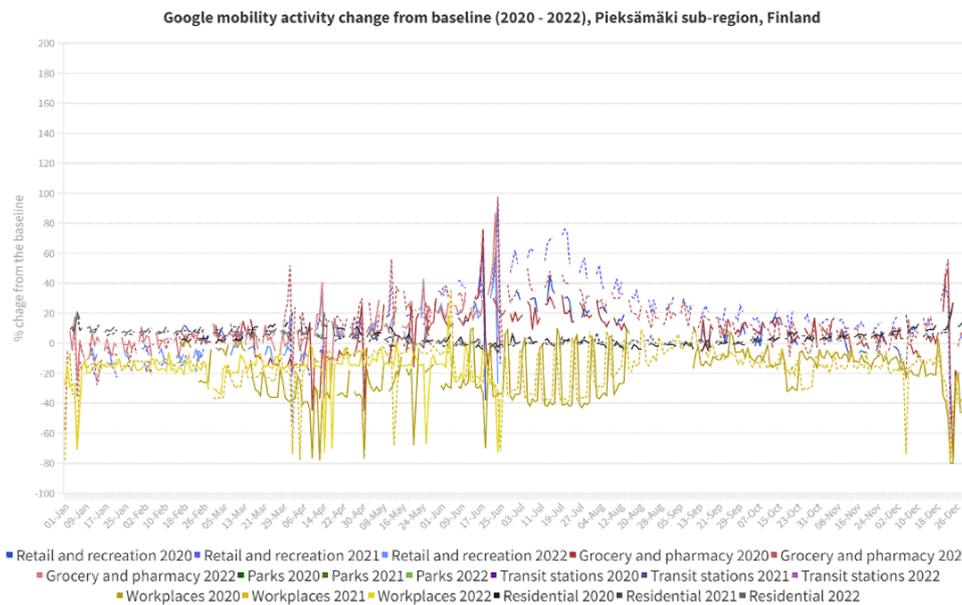


Figure 9. Google mobility activity change from baseline (2020-2022), Pieksämäki sub-region, Finland. **Note:** it is possible to select / deselect activities and years from the legend to get a clearer picture of one or more aspects of the data. You can also click on any data point to see the exact value for any given day.

A deeper and more nuanced understating of the situation in the two sub-regions can be obtained by looking at the changes within the different categories and by zooming in on activity levels on particular days of the week. We have chosen to look at the categories grocery and pharmacy and retail and recreation as we deemed these to be the most likely activities of second home users (bearing in mind that the parks category includes only official parks and not outdoor spaces in general). We expected retail and recreation (an optional activity) to be more affected by the pandemic than grocery and pharmacy (an essential activity).

Figure 10 and Figure 11 show the median monthly values for the activity "Grocery and pharmacy" in the Pieksämäki and Mikkeli sub-region in 2020-2022. A similar annual pattern can be identified in both sub regions. The activity level increases in late-spring and summer, peaks in June-July and returns to similar levels as the reference period during the autumn and winter months. The increase in the spring-summer months is likely explained by the increased second home use during this period. When comparing year-to-year variations, similar annual patterns emerge but with lower overall activity in 2020 (red) compared to 2021 (blue). The greatest differences between the years can be seen from March to July. Interestingly, the activity values for 2022 (green) sit between the values of 2020 and 2021, with more activity observed than in 2020 but not as much as in 2021.

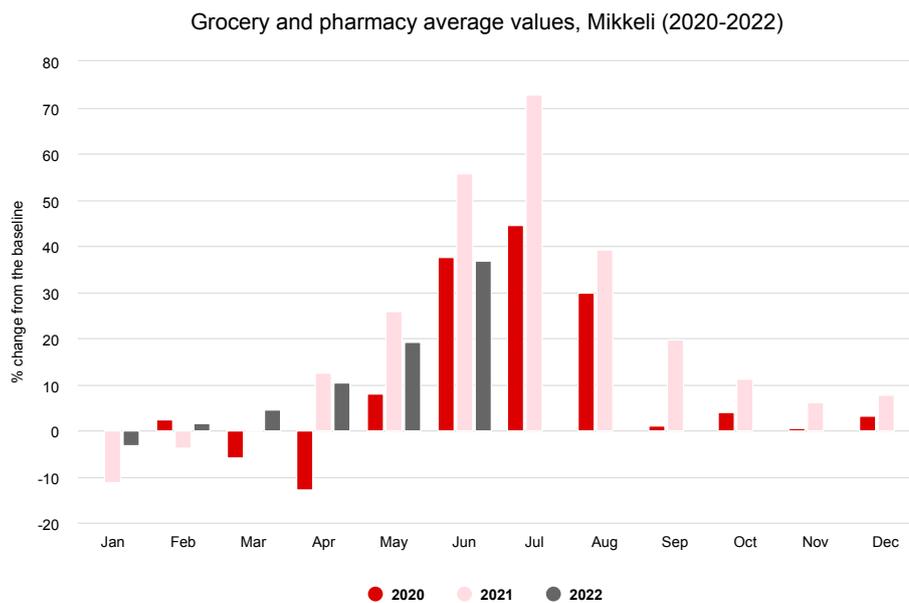


Figure 10. Average monthly values for activity in grocery and pharmacy in Mikkeli sub-region, 2020-2022.

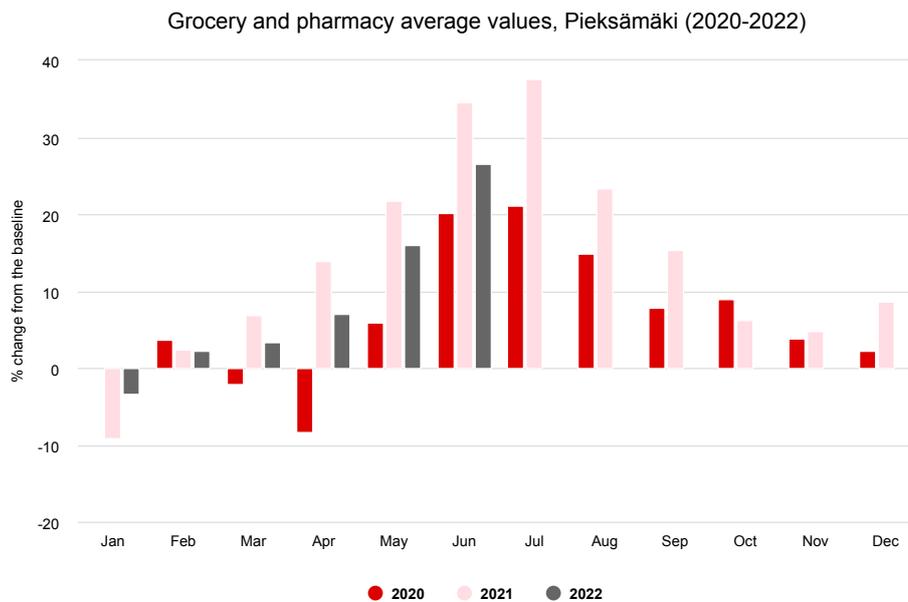


Figure 11. Average monthly values for activity in grocery and pharmacy in Pieksämäki sub-region, 2020-2022.

Figure 12 and Figure 13 show the median monthly values for the activity retail and recreation in the Pieksämäki and Mikkeli sub-regions in 2020-2022. As with the activity grocery and pharmacy, activity levels were highest during June, July, and, to a lesser extent, August. Unlike the grocery and pharmacy category, however, there are some differences between the sub-regions outside of these months. In Mikkeli, all other months show reduced activity levels compared to the baseline in 2020, 2021 and 2022. In contrast, activity levels in Pieksämäki are, for the most part, above the baseline for the later part of the year and, with the exception of April and May, are not as far below the baseline in the first part of the year. This is possibly a reflection of the greater disruption to these activities caused by the pandemic in the larger sub-region of Mikkeli. Put in another way, retail and recreation activities were perhaps more common in Mikkeli sub-region pre pandemic and thus, when the pandemic restricted these activities, the effect was more noticeable.

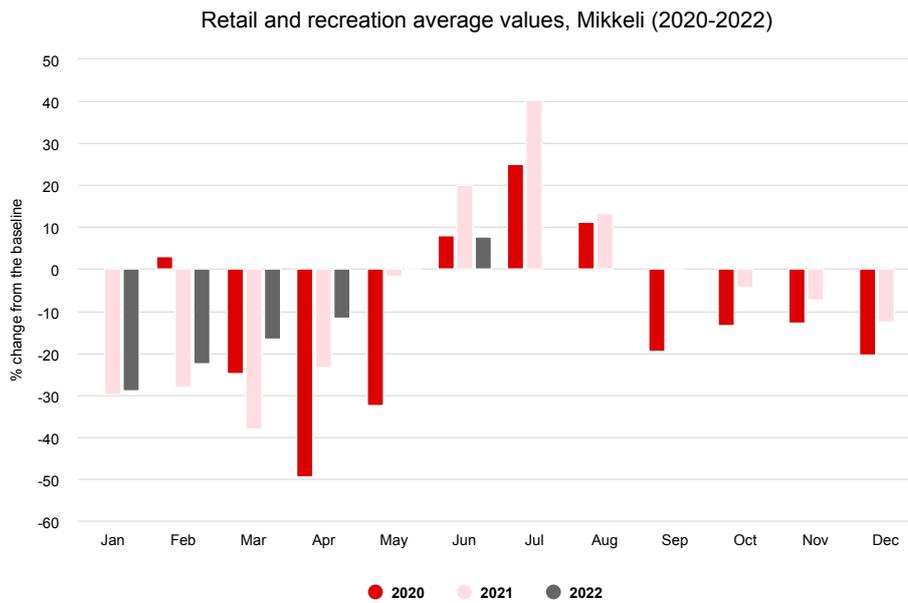


Figure 12. Average monthly values for activity in retail and recreation in Mikkeli sub-region, 2020-2022.

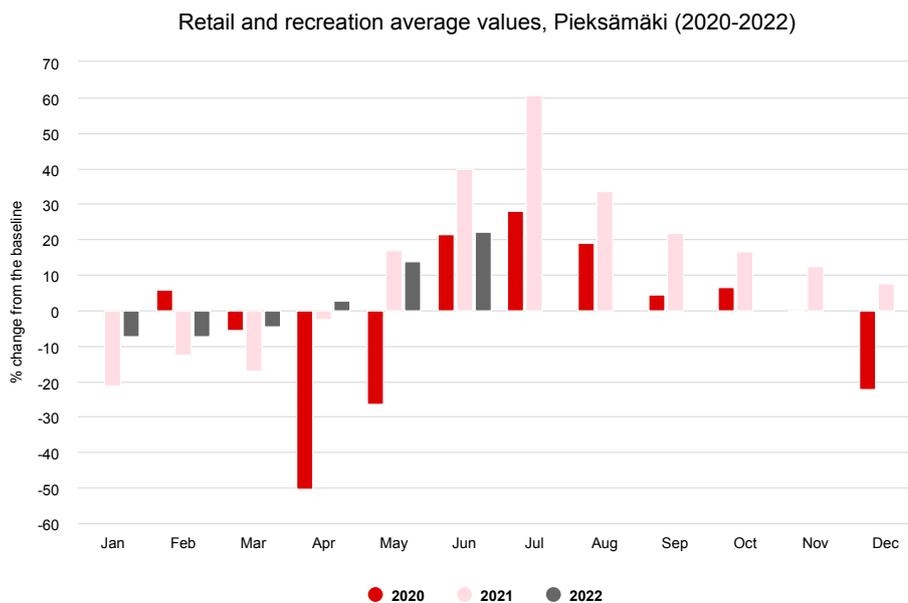


Figure 13. Average monthly values for activity in retail and recreation in Pieksämäki sub-region, 2020-2022.

It is also possible to break down the data by days of the week, in order to understand how weekly patterns of second home use may have changed. For example, exploring the hypothesis that increased opportunity to work from home may result in people spending more long weekends in their second homes. Figure 14 and Figure 15 show the daily activity values in the category grocery and pharmacy for the Mikkeli and Pieksämäki sub-regions. Each point in the figure represents one day during 2020-2022 and the years are represented using the same colours used in Figure 10 and Figure 11 (2020 in red, 2021 in blue, 2022 in green). The interactive figures allow you to select one or more years / days of the week for comparison using the legend in the right bottom corner and at the panels at the top. Additionally, you can click on any data point to see the exact date and value.

Mikkeli sub- region, Grocery and pharmacy (2020-2022)

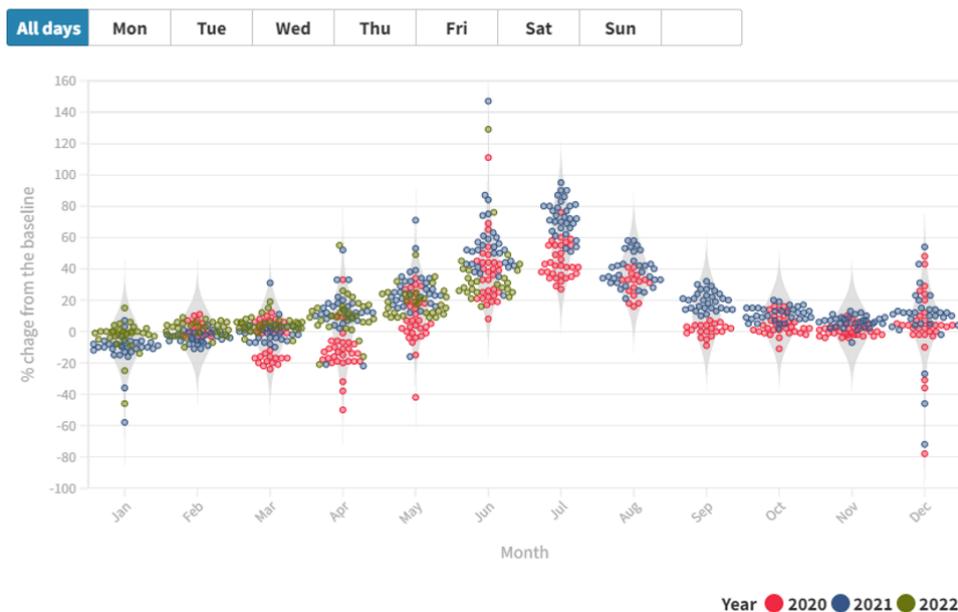


Figure 14. Daily activity values for grocery and pharmacy in Mikkeli sub-region, 2020-2022.

Pieksämäki sub-region, Grocery and pharmacy (2020-2022)

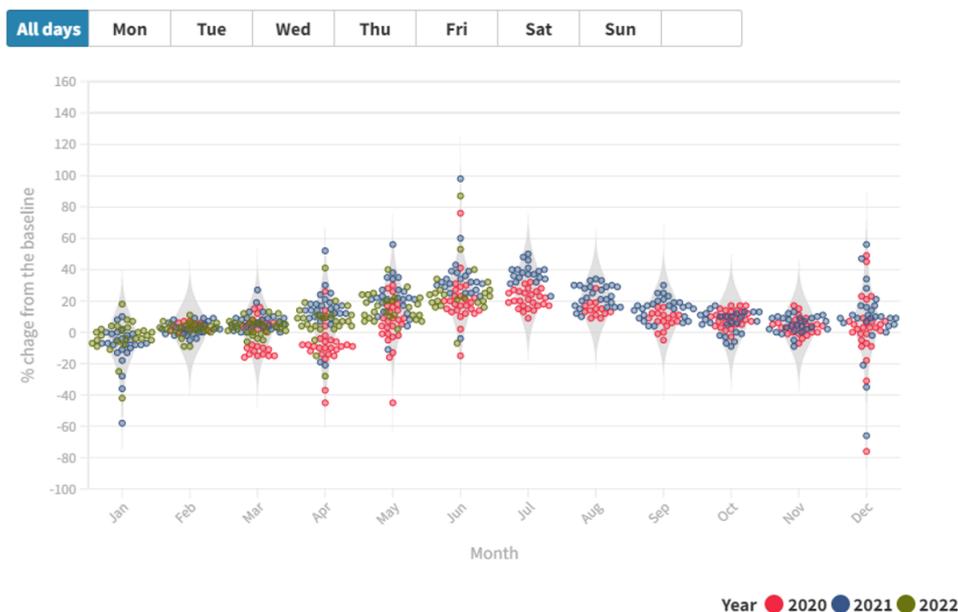


Figure 15. Daily activity values for grocery and pharmacy in Pieksämäki sub-region, 2020-2022.

The activity variation within the months is the highest in January, April, June, and December. This is likely connected with local public holidays (e.g., Christmas, New Year, Easter, Midsummer). Higher than average activity levels are observed in the days prior the holiday and lower than average activity levels on the day of the holiday and directly after. In March and April 2020, a negative change in activity level can be observed across all days of the week. This trend is not seen in 2021 or 2022

and is likely a direct result of the pandemic. The trends are the same for both sub-regions, with the only distinction in the range of the difference.

When it comes to comparing activity levels for particular days of the week, one significant problem emerges – the lack of sufficient baseline data that takes into account seasonal variation. As data has only been collected from the beginning of 2020, there is no baseline data that allows us to make seasonally relevant comparisons to pre-pandemic activity levels. For example, we can compare the activity level on Mondays in April between 2020, 2021 and 2022 but there is no way of knowing how these values compare to the situation in April 2019 or earlier. The pre-pandemic baseline provided by Google is of little use here due to the large seasonal variation in activity levels.



3. A qualitative approach to understanding the effects of remote work on regions and municipalities

Surveying local and regional actors about their experiences can provide a deeper and more nuanced understanding of the implications of remote work for local development and planning. Overall, participants in our survey were more likely to report positive changes in their permanent or temporary populations (i.e., more people moving in or spending time in the municipality / region). This was generally seen in a positive light, generating opportunities for long-term economic growth, maintaining public services, and revitalising the community. Participants also reported challenges, particularly related to increased housing demand and pressure on public services and infrastructure. Though increased remote work was clearly seen as playing a role in the changes observed, it was not the only factor at play and there was a degree of uncertainty evident about what the future holds. Despite this, many respondents reported proactive planning responses to supporting or promoting increased remote work in their municipalities and regions.

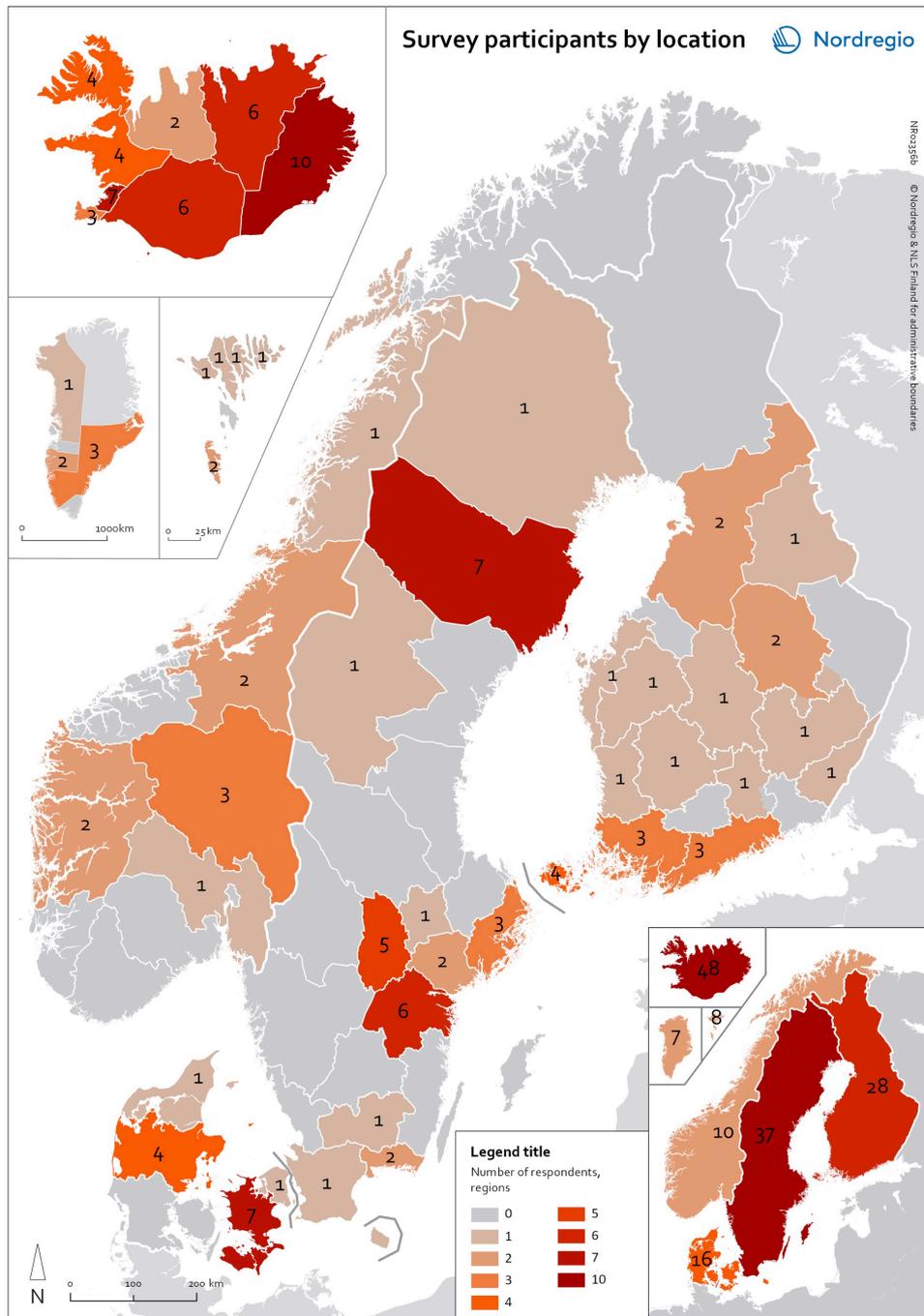
This chapter reports on the experiences of regional and local actors in the Nordic Region based on the findings of an online survey. It addresses changes to both the permanent and temporary populations (e.g., second-home users, tourists), the role of remote work as a driver of these changes in the short and long-term, and the planning strategies that have been implemented in response.

Methodology and participants

An online survey targeting regional and municipal actors in the Nordic countries was conducted between 10 May and 23 June 2022 and received 226 responses. It was available in all Nordic languages and in English and was disseminated widely using Nordregio's networks. The main aim of the survey was to understand the impact of increased remote work at the local and regional level in the Nordic Region. As such, 67 respondents were deemed ineligible due to working at the national or supranational level and two respondents were deemed ineligible due to working outside of the Nordic Region (see Figure 16). This resulted in a final sample of 157, including representation from all Nordic countries and independent territories (see Map 7). The full list of survey questions can be found in Annex 1.

Eligible		
Municipal planner		Regional planner
Other, working at regional or local level		Local or regional political representative
Ineligible		
Representative of a national agency	Researcher	Other, working at the national or supranational level (eg., Nordic, EU, OECD)
		Local or regional political representative

Figure 16. Survey respondents by work role



Map 7. Eligible survey participants by location. Note: Participants who did not state their exact location are only included on the national level map.

When interpreting the data, it is important to bear in mind that over half (54%) of participants were from rural municipalities or regions, while only just over one quarter were from intermediate (15%) or urban (12%) municipalities or regions (see Figure 17).

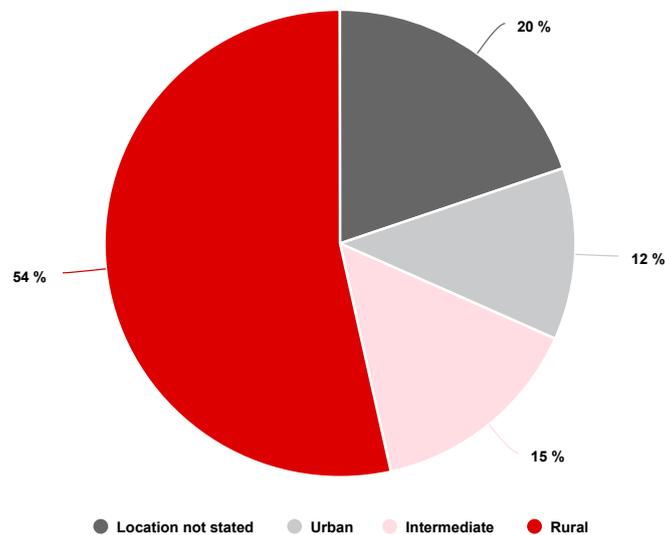


Figure 17. Location of survey participants by urban-rural typology.

Changes to the permanent population

Participants were asked their perceptions about migration patterns within their municipality / region (i.e., the movements of people who already live there) and about new residents coming in or existing residents moving out. Regarding migration within the municipality / region, around one third of participants (32%) did not perceive any big changes. Of those who did note a change, the most common scenarios were people being more likely to move to less densely populated areas close to the city / town / regional centre (27%) or to a rural or remote part of the municipality / region (20%). The least likely scenario was a greater tendency to move to central or built-up parts of the municipality / region (13%).

We follow the population development of the countryside relative to the city annually. In 2020, we saw unusually large migration differences in favour of the countryside. Even the net-migration figure was relatively high.

- Survey participant, Sweden

There is a growing trend of families with children moving away from the city and to (nearby) villages to live a more sustainable and child-friendly life. This development may in part also be exacerbated by rapidly rising housing prices in the big cities, making it almost impossible for newly established families to acquire a house or larger apartment that is within their economic scope.

- Survey participant, Denmark

Settlements near [the main settlement in our municipality] have grown and

those who move there are a fairly homogeneous group. It is people working in the service sector who can afford two cars that previously lived in [our urban area] who have now moved to the country, which put pressure on the municipality's spatial planning. The trend already existed before the pandemic, but it has intensified when employers have realized that it is attractive to be able to offer the opportunity to work from home.

- Survey participant, Sweden

0.05 ○○ 0.1



Figure 18. Participants perception of the areas within their municipality / region most likely to gain population. **Note:** Size of the circle corresponds to the number of respondents.

Regarding migration to or from the municipality / region, 40% of participants reported a similar number of people moving in or out during 2020 and 2021 (see Figure 19). Of those who perceived a change during the period, 47% reported more people moving in while only 14% reported more people moving out. Importantly, this should not be understood as representative of experiences throughout the Nordic Region but rather as a description of the most common experiences of those in the survey sample. Interestingly, several participants also noted a demographic shift.

In one of the villages, we experienced such a large and sudden generational shift that, even though not a single new house has been built in the village, we have had to open a new day care institution.

- Survey participant, Denmark

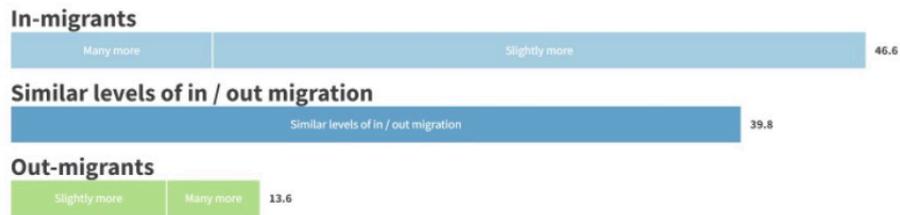


Figure 19. Participants' observations regarding changes to migration flows from outside the municipality / region in 2020 and 2021.

Participants who reported experiencing increased in-migration during 2020 and 2021 were presented with lists of challenges and opportunities associated with population growth and were asked to rank them on a three-point scale (see Figure 20 and Figure 21). Increased housing demand and rising property prices were seen as a key challenge for many, as was pressure on public services and both physical and digital infrastructure. Pressure on land take and demand for natural resources were less likely to be reported as challenging. Regarding opportunities, maintaining public services, supporting long-term economic growth, and creating livelier rural communities were seen as being the most important aspects.

Due to its proximity to Reykjavík and the capital region, many residents of the area seek work there. With increased possibilities for remote work, more people stay in the area on the days they work from home. [This creates] opportunities for other companies in the area, e.g., restaurants, cafes, shops.

- Survey participant, Iceland

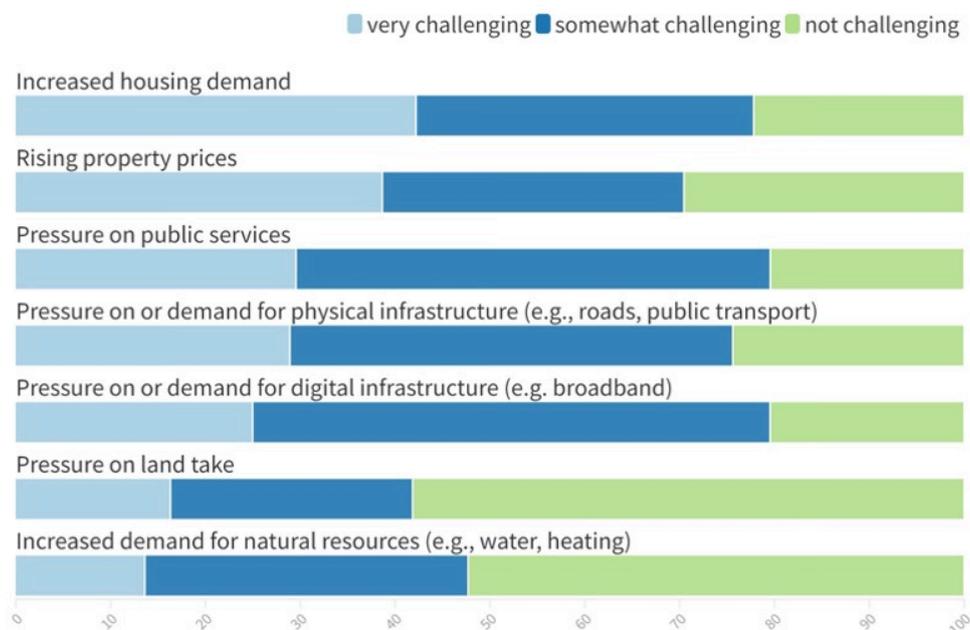


Figure 20. Challenges associated with population growth in 2020-2021.

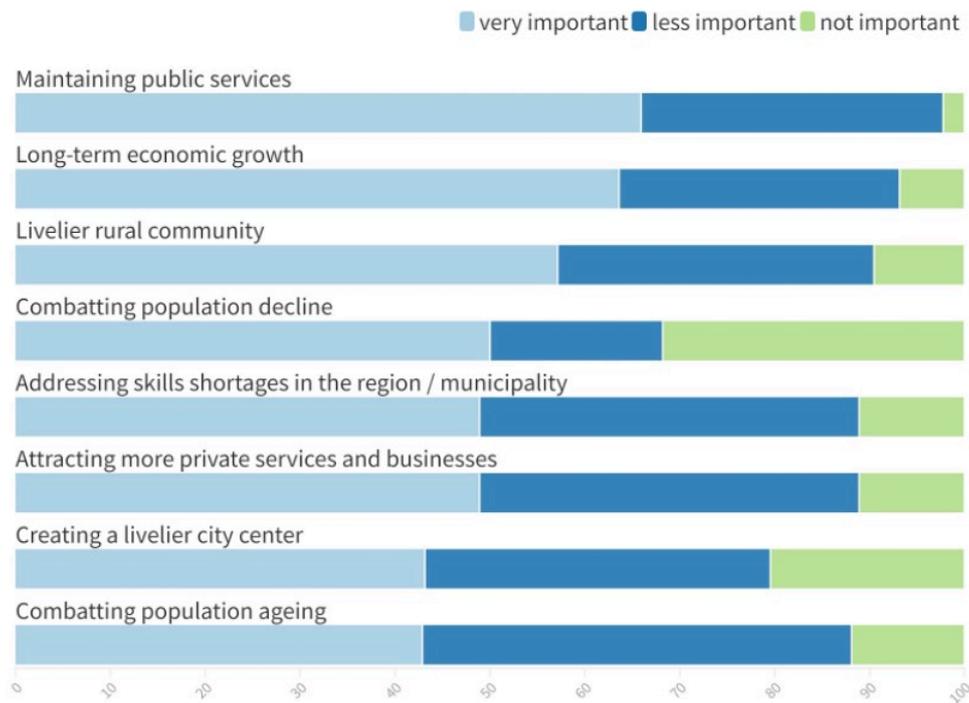


Figure 21. Opportunities associated with population growth in 2020-2021.

Participants who reported experiencing outmigration were asked only about the associated challenges. Given the small number of participants in this group (16) it is difficult to draw any concrete conclusions from this data. The following quote from a representative of an urban municipality in Sweden provides interesting insight into the complex array of factors that influenced population development in larger urban areas during the pandemic.

Population growth in [our urban] municipality has continued during the pandemic years 2020 and 2021, but the growth rate slowed down. This is mainly due to greatly reduced immigration, which is a significant growth factor for larger cities in Sweden. Secondly, we have a double whammy from our own county (which has also been confirmed from other regional hubs in each county in the country), with the restrictions reducing the influx from surrounding municipalities into the county when simple jobs in the service industries disappeared. In addition, many lost their jobs in these industries and many probably moved home to their parents for a period. We now have a significant demand for skills in hotels, restaurants, cafes and trade.

- Survey participant, Sweden

All participants were asked about their expectations for population development in the future (see Figure 22). The majority of participants expected population development to return to pre-pandemic rates (34%) or at least for changes to slow down compared to the experiences during the pandemic (32%). Interestingly, however, one quarter of participants expected the accelerated growth or decline of the population to continue into the future.

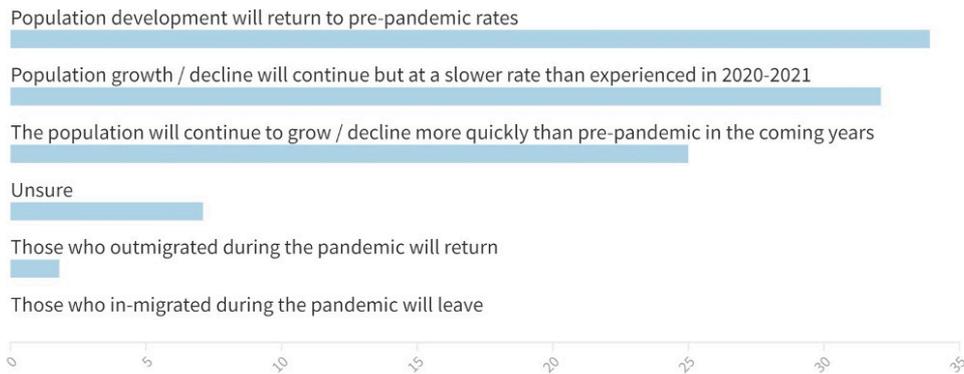


Figure 22. Expectations for future population development

Changes to the temporary population

Just over half (57%) of survey participants reported experiencing changes to the temporary population during 2020 and 2021. These participants were asked questions related to tourism and second home use. Regarding second home use, over half of the participants reported increases related to all of the aspects mentioned (see Figure 23). The largest increases noted were with respect to the use of second homes outside of high season (77%) and the number of second home users working from their second home (75%).

During the lockdowns, quite many chose to use their summerhouse / holiday home as a base, because there was typically better access to nature. Once the cities' offerings were closed and work was done from home, there was no reason to stay there.

- Survey participant, Denmark

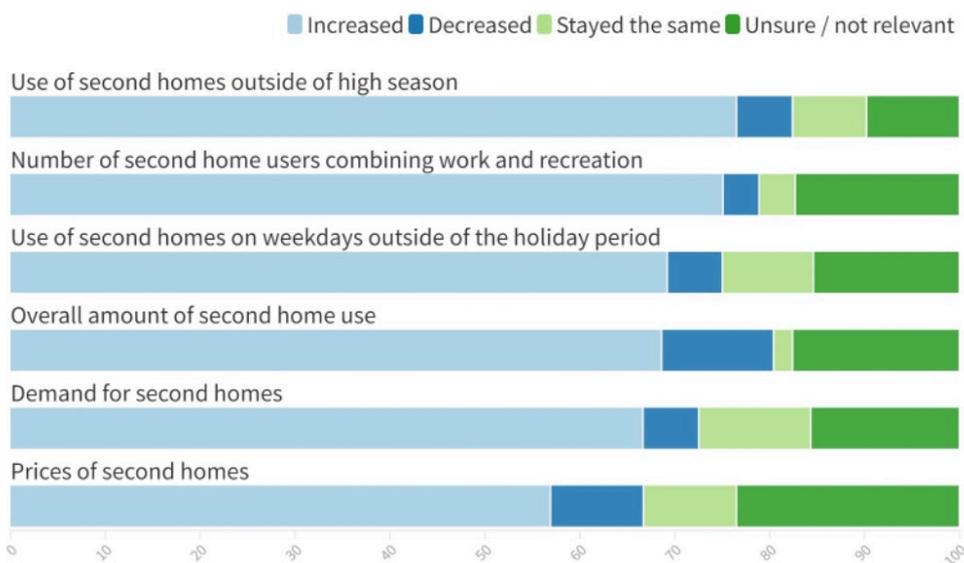


Figure 23. Changes to second home use in 2020-2021.

Regarding tourism, the most obvious effect was the decrease in international tourists (81%) accompanied by an increase in both the number (71%) and share (81%) of domestic tourists. This is clearly an effect of the travel restrictions imposed during the pandemic and is not of particular relevance here. Perhaps more relevant is the 56% of participants who cited an increase in the number of domestic visitors combining work and recreation. It is also worth noting the higher degree of uncertainty in the responses related to tourism as compared with second home use. This suggests that planning for the multilocal population may be more challenging when visitors do not have a fixed residence in the municipality.

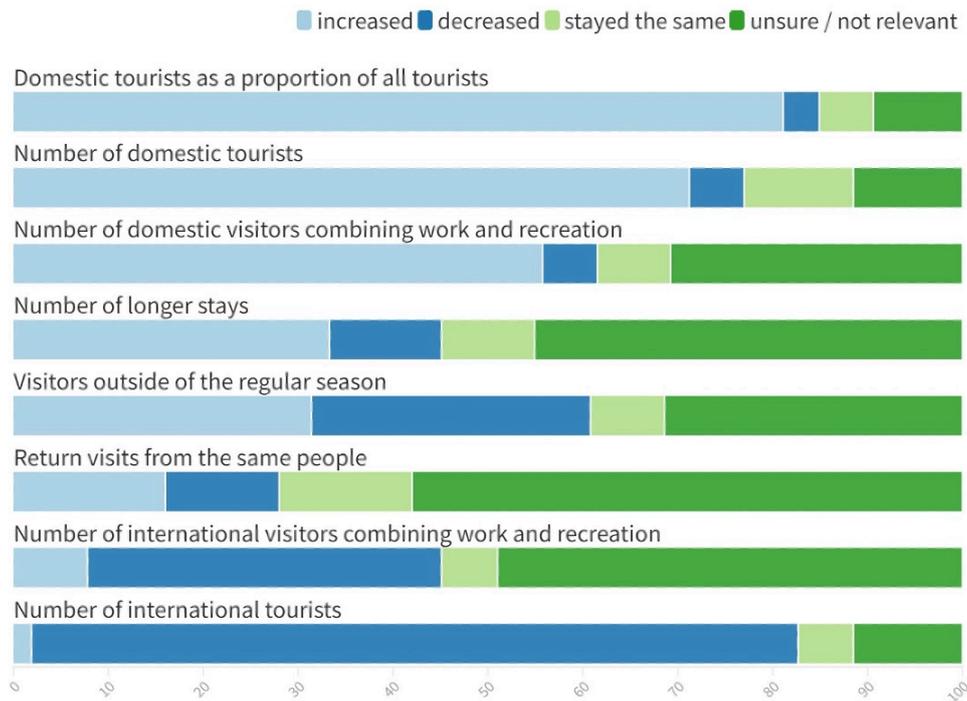


Figure 24. Changes to tourism during 2020 and 2021.

Participants who reported experiencing changes in the temporary population during 2020 and 2021 were asked about the associated challenges and opportunities (see Figure 25). Interestingly, the aspect most likely to be cited as very challenging, increased housing demand (38%), was the same as for increases in the permanent population. This was followed by pressure on public services (32%) and physical infrastructure (30%). Conflicting interests between visitors and permanent residents was reported as the least challenging aspect, though was still seen as very challenging (13%) or somewhat challenging (34%) by almost half of participants. In the free-text responses, several participants also noted challenges around current taxation laws being based solely on a person's registered address. Regarding opportunities, long-term economic growth (69%) and attracting more private services and businesses (68%) were seen as being the most important aspects.

The population register must be reformed: tax revenues end up in just one municipality, even though many people now stay as "visitors" in our municipality for perhaps half of the year.

- Survey participant, Sweden

Our "part-time residents" are a resource and increased use of cabins provides

opportunities for district municipalities to maintain local service and jobs... [At the same time,] increased demand for cabins is a major challenge related to the degradation of valuable nature, biological diversity and climate (increased car traffic).

- Survey participant, Norway

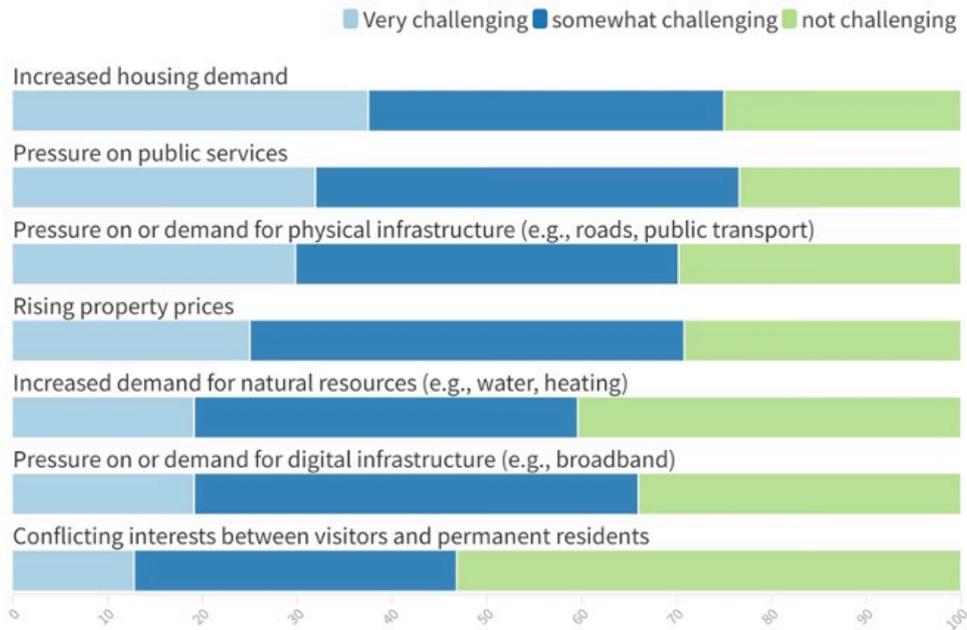


Figure 25. Challenges associated with changes in the temporary population

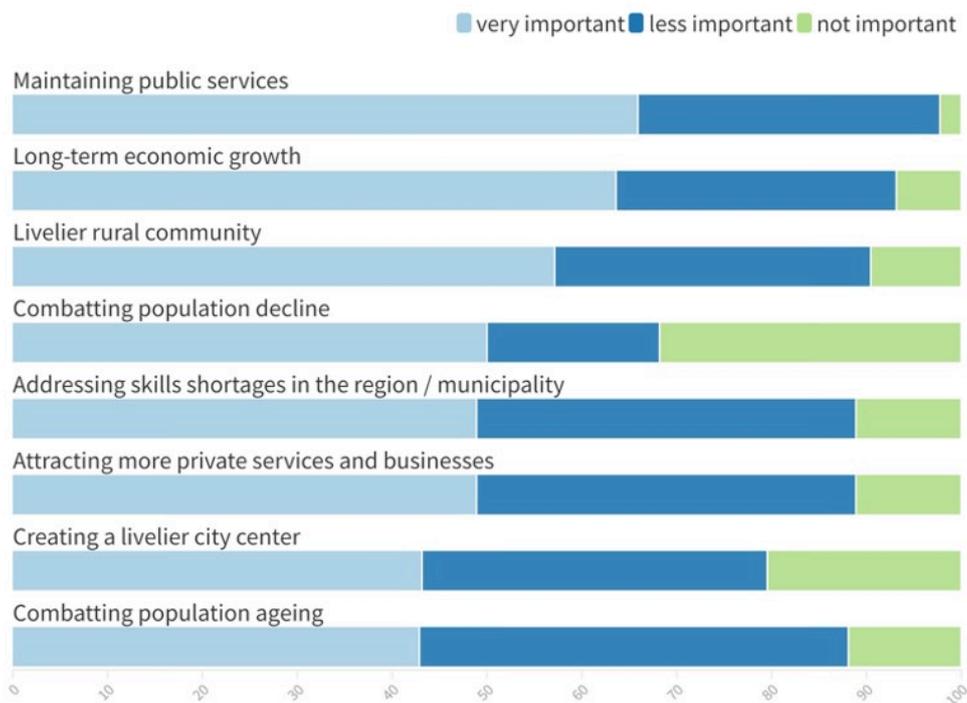


Figure 26. Opportunities associated with changes in the temporary population

Participants were also asked about the data sources used to understand changes in the temporary population. Some described use of official statistics from the national statistics agencies, tourism bureaus, housing sales. A small number purchased data from mobile network providers (e.g., Telia Crowd Insights), while others described creative methods such as measuring water use and wastewater volumes. Overall, however, it appears that many rely upon anecdotal evidence and word of mouth, particularly when it comes to gathering knowledge about the extent to which remote work has played a role in the changes described above.

We have just completed an analysis of water use in coastal and river areas in the municipality. The result is an increase of just over 3% annually at the end, which is higher than the general growth in the municipality which was between 1 and 1.5%.

- Survey participant, Sweden

People's use of their own summer houses / holiday homes in relation to remote work is more anecdotal, and it is furthermore uncertain how much it will mean now that the lockdowns are over.

- Survey participant, Denmark

The role of remote work

One clear advantage of the qualitative approach was that we had the chance to ask participants about the extent to which they attribute the changes described above to increased opportunities for remote work. As Figure 27 demonstrates, remote work was clearly considered to play a role in driving changes to both the permanent and the temporary population. Although few participants ranked it as the primary factor, the vast majority considered increased opportunities for remote work to be an important factor (33% permanent population; 31% temporary population) or one of many factors (46% permanent population; 46% temporary population) affecting population development in their region / municipality.

People coming to their second home reported being able to come because they were asked to work from home and therefore wanted to enjoy some time in their second home. They also mentioned that they could come on weekends more often with the family as they could stay for 3-4 days instead of just 2, thanks to the opportunity to work from home.

- Survey participant, Iceland

Location-independent jobs are one of the reasons for moving to the area, but it is not yet visible in the statistics. Migration stories are more important than statistical trends.

- Survey participant, Finland

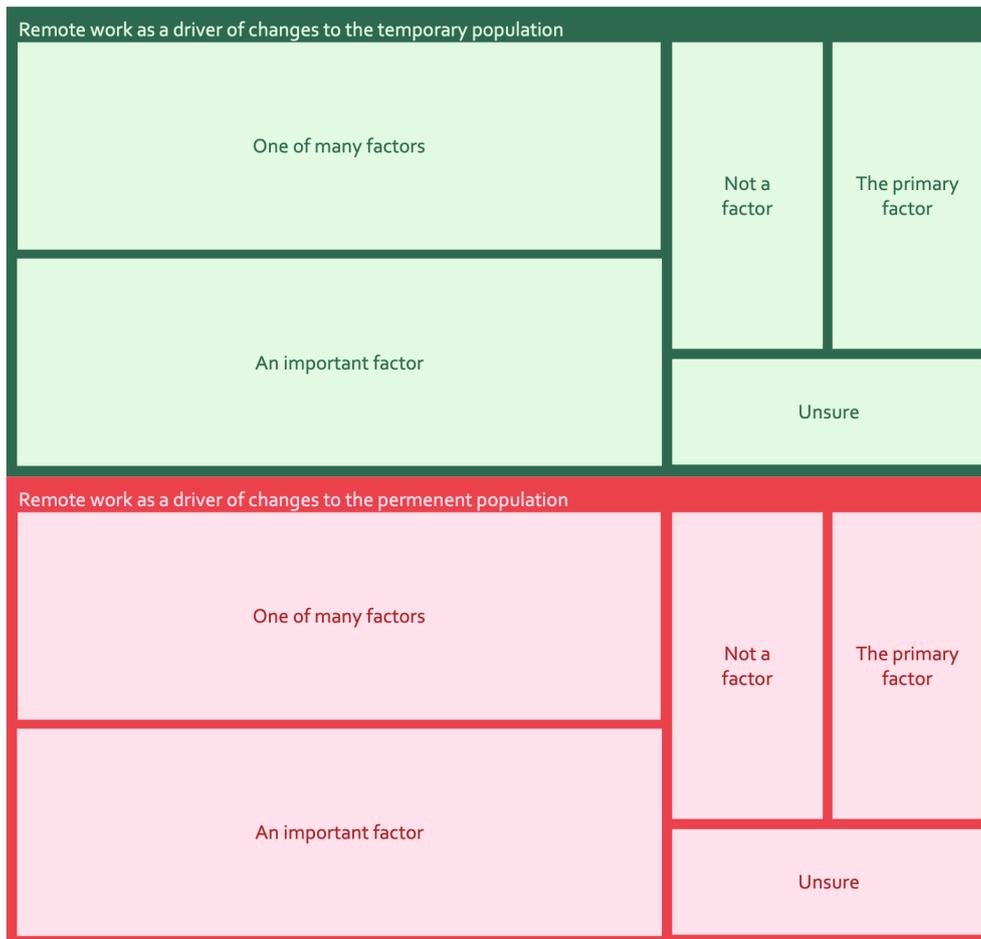


Figure 27. Degree to which survey participants consider increased opportunities for remote work as a driver of changes in the temporary and/or permanent population.

Participants were also asked about their expectations around how increased opportunities for remote work would influence population change in the future. Regarding the permanent population, most respondents (80%) expected increased opportunities for remote work to result in increased in-migration (see Figure 28). Most participants also anticipated changes to the temporary population, however many (35%) were unsure exactly how this would play out (see Figure 29).

We have tried to follow the research to understand what effects the pandemic would have on our population growth. Obviously, teleworking has enormous potential for population growth. Today we have a wide variety of living environments, with the potential to attract many new inhabitants.

- Survey participant, Sweden

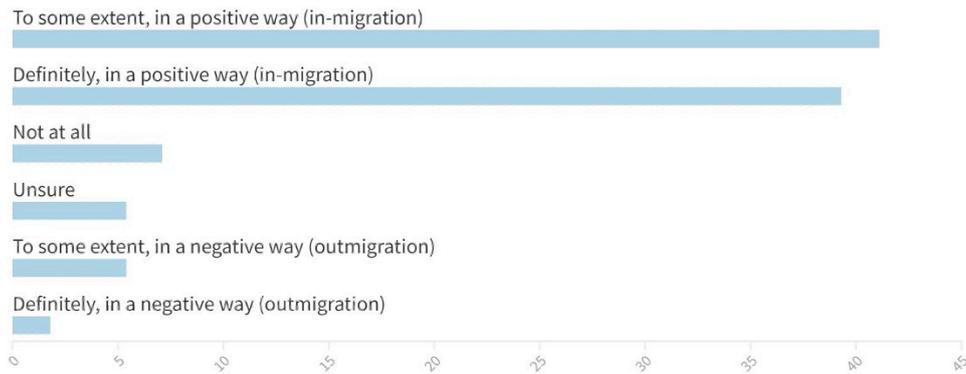


Figure 28. Participants' expectations regarding the influence of remote work on development of the permanent population in the future.

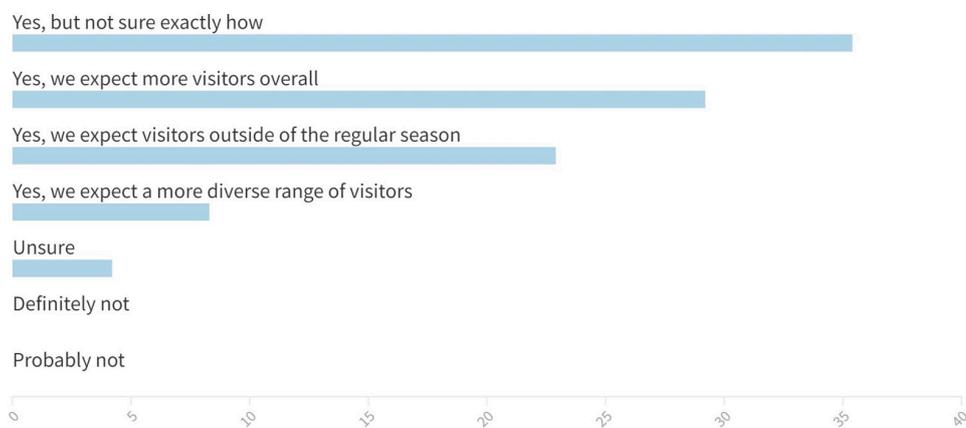


Figure 29. Participants' expectations regarding the influence of remote work on development of the temporary population in the future.

A small number of participants also noted the potential for location-independent recruitment to support skill development in different regions without necessarily leading to population growth. This perspective has been a less common in the discourse surrounding remote work since the pandemic. It could nonetheless be an important angle, particularly in light of existing skills shortages in some regions and the large industrial investments currently underway in some parts of the Region. Further research in this space will be important in ensuring a sustainable approach to this style of recruitment, particularly from a social and environmental perspective (e.g., avoiding "fly-in, fly-out" communities).

Location-independent recruitment helps companies in the region get the skilled workforce they need, but it does not increase the population of the municipalities. That is, also a negative effect on population development, but a positive effect on the vitality of companies.

- Survey participant, Finland

Planning strategies to address or promote change

Participants described different planning strategies that they have used to address changes in the permanent and temporary populations. Overall, responses were rather varied and context specific. There were, however, several strategies that came up repeatedly. Some of these strategies were very clearly related to supporting or promoting remote work. For example, the introduction or improvement of coworking spaces, establishment of projects designed to promote increased opportunities for remote work as a means to supporting local development, and general improvements to digital connectivity.

We see remote work and multilocality as a great opportunity, but it still requires a lot of measures.

- Survey participant, Finland

I am interested in marketing my municipality as an option for teleworking due to shorter distances in daily life, a high level of service and recreation / outdoor activities that [the municipality] can offer.

- Survey participant, Iceland

Other strategies were more general such as increasing the level of citizen dialogue (both physical and digital) and adjusting ongoing planning processes based on changes experienced during the pandemic (not specific to remote work). Finally, several suggestions were made that were specific to the temporary population such as increased garbage collection and new recycling facilities and promoting "workations".



4. Conclusions

This report sought to build on the first report in the series, Nordic knowledge overview, by deepening the analysis at the local and regional level. It addressed the following questions:

- What are the potential effects of remote work and multilocality in the Nordic countries for different types of regions and municipalities?
- What data is most useful for understanding the trends associated with increased remote work and multilocality in Nordic regions and municipalities?
- What challenges and opportunities may be associated with increasing remote work and multilocality in Nordic regions and municipalities?

Our findings highlight the difficulties in understanding the spatial effects of increased remote work through statistical data alone. Internal migration data provides some insight into the movements of Nordic citizens within their respective countries and is freely available (though in varying levels of detail) from all Nordic Statistical Institutions. The most marked trend during 2020 and 2021 was a large increase in internal outmigration from the capital regions and municipalities. Although destination preferences among out-migrants were consistent with pre-pandemic trends, some regions still experienced greater proportional increases in the number of in-migrants than others. Popular tourist destinations and regions with high concentrations of second homes stand out here. Zooming in on the situation in Denmark, it is evident that young families make up the most significant number of out-migrants from Copenhagen. This group were most likely to move to other municipalities within the capital region or, to a lesser extent, municipalities within the adjacent region.

Importantly, internal migration data does not provide any indication as to how many of these out-migrants continued to work in the capital regions / municipality following their moves. It is thus difficult to ascertain the extent to which these migration trends can be attributed to increased remote work. Thus, although migration statistics are highly reliable, their explanatory power is somewhat limited when it comes to addressing specific questions about the changing nature of work post-pandemic. The higher level of detail provided in the Danish data does allow for somewhat more targeted analysis. Making such data freely available in all Nordic countries would be highly useful in supporting more detailed statistical analysis of migration trends at the Nordic level.

When it comes to understanding changes to the temporary population, so-called

activity data can provide useful insights. Our analysis of two sub-regions in the popular second home region of Etelä-Savo, Finland, using Google Mobility Data clearly highlights the seasonal changes in activity level. Year-to-year changes are more difficult to analyse without specific local knowledge, however the patterns in the data do appear to align with what one might have expected during the pandemic. This suggests that the data may be somewhat reliable, even in less populated areas. Even in the smaller subregion, it was still possible to identify the overall trend, despite gaps in the time series.

When combined with other types of data and local knowledge, this could have great potential as a way of understanding fluctuations in activity levels in a region. One major limitation in our case, however, was the lack of a seasonally representative pre-pandemic baseline. As a result, it is difficult to draw any conclusions regarding potential longer-term effects of the pandemic on the temporary population in the region based on this data alone. Despite this, if Google were to continue making these data sets available in the long-term, they could be useful in increasing our understanding of the phenomenon of multilocality.

Surveying local and regional actors about their experiences can provide a deeper and more nuanced understanding of the implications of remote work for regional and local development and planning. Overall, participants in our survey were more likely to report positive changes in their permanent or temporary populations (i.e., more people moving in or spending time in the municipality / region). This was generally seen in a positive light, generating opportunities for long-term economic growth, maintaining public services, and revitalising the community. Participants also reported challenges, particularly related to increased housing demand and pressure on public services and infrastructure.

Though increased remote work was clearly seen as playing a role in the changes observed, it was not the only factor at play and there was a degree of uncertainty evident about what the future holds. Despite this, many respondents reported proactive planning responses to supporting or promoting increased remote work in their municipalities and regions. Interestingly, the experiences of regional and local actors were quite similar between the countries. They were also consistent with the theory and discourse found in the international literature and national policy contexts of the first report.

Overall, this second report supports the central finding of the first – that there is great potential for Nordic cooperation in developing strategies to address the challenges and make the most of the opportunities associated with increased remote work for Nordic regions and municipalities. For national policy makers, understanding the nature of the changes that have occurred since the pandemic, and the degree to which these changes relate to increased remote work, is a real challenge. At the local and regional level, the nature of the challenges and opportunities experienced appears to be fairly similar between the countries. Collaboration at both levels could be incredibly valuable in strengthening both national and local efforts to make the most of the opportunities increased remote work offers for Nordic people, places, and planning in the long term.

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Annex: Survey questions

Welcome!

Remote work, distansarbete, hjemmearbejde, etätyö, fjarvinna – no matter what you call it, it is difficult to ignore the significance of this topic in discussions about the future of work since the onset of the COVID-19 pandemic. Early evidence suggests that increased remote work is here to stay – even once the pandemic subsides. At Nordregio, we are interested in the impacts of this for Nordic people, places, and planning and we need your help! This survey aims to understand how the pandemic has affected the numbers of people migrating to, or spending time in, different Nordic regions and municipalities. We are particularly interested in:

- the challenges and opportunities associated with changes in the temporary and/or permanent population,
- how municipalities and regions are responding to these changes, and
- your perceptions about whether these changes are likely to be maintained into the future.

The survey will take between 5 – 15 minutes to complete, depending on the extent to which you experienced changes to your temporary or permanent populations during the pandemic.

This survey is part of the Nordregio project Remote work: Effects on Nordic people, places and planning 2021-2024, funded by the Nordic Council of Ministers under the Nordic Co-operation Programme for Regional Development and Planning 2021-2024. It has also received funding from the Finnish Chairmanship of the Nordic Council of Ministers under the direction of the Nordic Ministers for Regional Development. The results of the survey will inform publications of the project which will be publicly available. Names of specific municipalities or regions may be used where appropriate. Please contact us if you would prefer your municipality or region not to be named in any publications. If you would like to know more about the project contact linda.randall@nordregio.org or visit Nordregio's website.

Question

Response

Which of the following best describes your work role?

- a. Regional planner
- b. Municipal planner
- c. Local or regional political representative
- d. Researcher
- e. Representative of a national agency
- f. National policy maker
- g. Other, working at the national or supranational level (e.g., Nordic, EU, OECD)
- h. Other, working at the regional or local level (please state)

Which country / territory are you from?

- a. Denmark
- b. Finland
- c. Iceland
- d. Norway
- e. Sweden
- f. Åland
- g. Faroe Islands
- h. Greenland
- i. Outside of the Nordic Region

In which municipality / region do you work?

Free text response

Which of the following BEST describes your impression of migration patterns WITHIN your region / municipality during 2020 & 2021? (please tick all that apply)

- a. People were more likely to move to less densely populated areas close to the city / town / regional center (e.g., suburbs, urban fringe)
- b. People were more likely to move to rural or remote parts of the municipality / region
- c. People were more likely to move to the more central or built-

(note: we are interested in your overall impression here rather than something precise)

- up parts of the region / municipality
- d. There were no big changes regarding living preferences within the municipality / region during 2020 & 2021
- e. Unsure

Optional comment

- a. MANY MORE people than usual MOVED IN to the region / municipality in 2020-2021.
- b. SLIGHTLY MORE people than usual MOVED IN to the region / municipality in 2020-2021.
- c. A SIMILAR NUMBER of people as usual MOVED IN to the region / municipality in 2020-2021.
- d. SLIGHTLY MORE people than usual MOVED OUT of the region / municipality in 2020-2021.
- e. MANY MORE people than usual MOVED OUT of the region / municipality in 2020-2021.

- a. Increased housing demand
- b. Rising property prices
- c. Pressure on or demand for physical infrastructure (e.g., roads, public transport)
- d. Pressure on or demand for digital infrastructure (e.g. broadband)
- e. Pressure on public services
- f. Increased demand for natural resources (e.g., water, heating)
- g. Unsure
- h. Other, please describe

Response options: Very challenging, somewhat challenging, not challenging

Optional comment

- a. Combatting population decline
- b. Combatting population ageing
- c. Creating a livelier city center
- d. Livelier rural community
- e. Long-term economic growth
- f. Maintaining public services
- g. Attracting more private services and businesses
- h. Addressing skills shortages in the region
- i. Other, please describe

Response options: Most important, less important, not important

Optional comment

- a. Yes (please describe below)
- b. No

Please describe any new initiatives / strategies / planning response, providing links where possible

- a. The population will continue to grow more quickly than pre-pandemic in the coming years
- b. Population growth will continue but at a slower rate than experienced in 2020-2021
- c. Population development will return to pre-pandemic rates

Which of the following BEST describes your impression of permanent residents MOVING IN OR OUT of your region / municipality during 2020 & 2021?

(note: we are also interested in the temporary population (e.g., tourists, second home users) but will ask about this later in the survey)

What have been the main planning challenges associated with the in migration experienced during the pandemic? (choose as many as apply to you)

What are the main opportunities for your region / municipality as a result of the in migration experienced during the pandemic?

Have you implemented any new initiatives / strategies / planning tools in response to the in migration experienced during the pandemic? (e.g., development of coworking spaces, new working groups, citizen dialogues)

What are your future expectations for migration in your region/municipality?

What have been the main planning challenges associated with the outmigration you experienced during the pandemic? (tick all that apply to you)

- d. Many of those who in-migrated during the pandemic will leave, slowing population growth or causing overall outmigration
- e. Unsure
- a. Maintaining transport services
- b. Maintaining other public services
- c. Skills shortages
- d. Empty houses / buildings
- e. Loss of tax revenue
- f. Other, please describe

Response options: Very challenging, somewhat challenging, not challenging

What (if any) new initiatives / strategies / planning tools have you implemented in response to the population decline experienced during the pandemic?

Free text response

What are your future expectations for migration to / from your region / municipality?

- a. The population will continue to decline more quickly than pre-pandemic in the coming years
- b. Population decline will continue but at a slower rate
- c. Population development will return to pre-pandemic rates
- d. Many of those who outmigrated during the pandemic will return, slowing population decline or resulting in overall population growth
- e. Unsure

Please briefly describe or link to any evidence on which you based your answer:

To what extent do you attribute the changes in migration experienced in your municipality / region during the pandemic to the increase in working from home? (choose the response that best describes your impression)

- a. Not a factor
- b. One of many factors
- c. An important factor
- d. The primary factor
- e. Unsure

Please briefly describe or link to any evidence on which you based your answer:

Do you expect increased opportunities to work from home to influence population development in your municipality in the future?

- a. Definitely, in a positive way (in-migration)
- b. Definitely, in a negative way (outmigration)
- c. To some extent, in a positive way (in-migration)
- d. To some extent, in a negative way (outmigration)
- e. Not at all
- f. Unsure

Optional comment:

BEFORE the onset of the COVID-19 pandemic in 2020, did you get many visitors in your municipality / region (e.g., tourists, second home users)?

- a. No
- b. Some visitors (seasonal)
- c. Some visitors (year-round)
- d. Many visitors (seasonal)
- e. Many visitors (year-round)

BEFORE the onset of the COVID-19 pandemic in 2020, where did your visitors usually come from? (choose as many as apply to you)

- a. Nearby municipalities / regions
- b. The same country
- c. Other Nordic country/countries
- d. Other non-Nordic country/countries

Answer choices: Most, many, some, few, none

Regarding SECOND HOMES, what is the situation in your municipality / region?

- a. Second homes are uncommon in my municipality / region
- b. We have a large number of second homes in my municipality / region
- c. We have some second homes in my municipality / region

What changes did you observe with regards to second home use in your municipality / region during 2020 and 2021? (choose as many as apply to you)

- a. Second home use INCREASED in line with seasonality (i.e., there were more second home users during the times when second home use is most common).
- b. Second home use INCREASED off-season (i.e., there were more second home users even during the times when second home use is less common).
- c. Second home use remained FAIRLY SIMILAR to what is usually experienced.
- d. Second home use DECLINED.
- e. Unsure

Optional comment

Alongside second home use, were you aware of any changes regarding other types of visitors to your municipality / region during 2020 and 2021?

- a. Number of international tourists
- b. Number of domestic tourists
- c. Domestic tourists as a proportion of all tourists
- d. Visitors outside of the regular tourist season
- e. Number of longer stays
- f. Return visits from the same people
- g. Number of domestic visitors combining work and recreation
- h. Number of international visitors combining work and recreation

Answer choices: Decreased, stayed the same, increased, unsure, not relevant

Optional comment

Were you aware of any changes regarding other types of visitors to your municipality / region during 2020 and 2021?

- a. Number of international tourists
- b. Number of domestic tourists
- c. Domestic tourists as a proportion of all tourists
- d. Visitors outside of the regular tourist season
- e. Number of longer stays
- f. Return visits from the same people
- g. Number of domestic visitors combining work and recreation
- h. Number of international visitors combining work and recreation

Answer choices: Decreased, stayed the same, increased, unsure, not relevant

Optional comment

What have been the main planning challenges associated with increased second home use and/or changes in tourism during the pandemic?

- a. Increased housing demand
- b. Rising property prices
- c. Pressure on or demand for physical infrastructure (e.g., roads, public transport)
- d. Pressure on or demand for digital infrastructure (e.g., broadband)
- e. Pressure on public services
- f. Increased demand for natural resources (e.g., water, heating)
- g. Conflicting interests between visitors and permanent residents
- h. Other, please describe

What are the main opportunities for your region / municipality as a result of increased second home use and/or changes in tourism during the pandemic?

Response options: Very challenging, somewhat challenging, not challenging

Optional comment

- a. Combatting population decline
- b. Creating a livelier city center
- c. Creating a livelier rural area
- d. Long-term economic growth
- e. Maintaining public services
- f. Attracting more private services and businesses
- g. Other, please describe

Have you implemented any new initiatives / strategies / planning tools in response to the changes to the temporary population experienced during the pandemic? (e.g., development of coworking spaces, new working groups, citizen dialogues)

Response options: Most important, less important, not important

Optional comment

- a. Yes (please describe below)
- b. No

Please describe any new initiatives / strategies / planning response, providing links where possible (no need to repeat if you have already described these in the previous section).

To what extent do you attribute the increased second home use and/or changes in tourism experienced in your municipality / region during the pandemic to the increase in working from home? (choose the response that best describes your impression)

- a. Not a factor
- b. One of many factors
- c. An important factor
- d. The primary factor
- e. Unsure

Please briefly describe or link to any evidence on which you based your answer:

Do you expect increased opportunities to work from home to influence second home use and/or tourism in your municipality in the future? (choose as many as apply to you)

- a. Yes, we expect more visitors overall
- b. Yes, we expect visitors outside of the regular season
- c. Yes, we expect a more diverse range of visitors
- d. Yes, but not sure exactly how
- e. Probably not
- f. Definitely not
- g. Unsure

Optional comment

Which data sources do you use to understand changes in the temporary population? (please provide links where possible)

Free text response

Is there anything else you would like to share about the effects increased remote work on your municipality / region?

Free text response

Please indicate if you are willing to be contacted by a Nordregio researcher about this topic. If you prefer not to be contact welcome to skip the question (note: We will not share your contact details with anyone nor use them for any other purpose than those stated here)

- a. Yes, please send me a copy of the report
- b. Yes, I would be happy to discuss the situation in my municipality / region further
- c. Yes, all of the above

If you ticked any of the boxes above, please provide your email address:

Thank you for taking the time to respond to this survey!

This survey is part of the Nordregio project Remote work: Effects on Nordic people, places and planning 2021-2024, funded by the Nordic Council of Ministers under the Nordic Co-operation Programme for Regional Development and Planning 2021-2024. It has also received funding from the Finnish Chairmanship of the Nordic Council of Ministers under the direction of the Nordic Ministers for Regional Development. The results of the survey will inform publications of the project which will be publicly available. Names of specific municipalities or regions may be used where appropriate. Please contact us if you would prefer your municipality or region not to be named in any publications. If you would like to know more about the project contact linda.randall@nordregio.org or visit Nordregio's website.

Text displayed to disqualified respondents:

Thank you for your interest in our project! This survey is specifically designed to capture the experiences of those working at the local and regional level. If you have any information you would like to share that you think could be useful to us welcome to add comments or links in the box below. If you would like to discuss the project further, contact linda.randall@nordregio.org or visit Nordregio's website.

About this publication

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