

A photograph of a person with short blonde hair, wearing a dark jacket and dark pants, walking away from the camera on a paved path in a park. The path is flanked by trees and a building is visible in the background. The lighting suggests it's daytime with some shadows.

Who is left behind?

The impact of place on the possibility
to follow Covid-19 restrictions



Nordic Council
of Ministers

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Preface

Many already existing divides and inequalities in our Nordic societies have surfaced during the Covid-19 pandemic. While anyone is at risk of being infected, the pandemic is hitting communities along socio-economic lines where some disadvantaged neighbourhoods have been particularly exposed. The intention of this report is to contribute to the debate on social equality and the effects of inequality and segregation in Nordic cities, with a focus on neighbourhoods with a high share of residents with a foreign background.

We are grateful for all the local informants who have generously shared their knowledge and experiences to shed light on the situation in the case study areas in Stockholm – Järva and Malmö – Rosengård. Hopefully this work will be a piece in the puzzle to better understand the effects of structural barriers on residents in deprived neighbourhoods in general, and in times of crisis in particular. These barriers have made it difficult or even impossible for many residents to follow public recommendations during the Covid-19 pandemic.

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Photo: Ritzau/Scanpix

Summary

The coronavirus and the extraordinary times that have followed have been prominent in the media and policy debates. Coronavirus disease 2019 (Covid-19) has had social and economic effects, which have been widely addressed, particularly how it has struck ethnic minorities and other vulnerable groups. In the Spring of 2020, a disproportionate spread of the virus was noticed in the Nordics – as elsewhere – with certain geographical clusters of high infection rates. Several factors for these disparities have been suggested, most focusing on socio-economic descriptions such as income, education, occupation, living conditions, and comorbidities. All these aspects often coincide within certain residential areas.

It is well-known that geographical variations in health reflect socio-economic inequalities between areas, and that poor, low-income earners, and vulnerable groups, in general, suffer the most far-reaching consequences in times of crisis. With spatial segregation, many layers of inequality interact and create conditions impacting daily life in different ways, depending on where you live.

While the Nordic countries have long been champions of equality, the Covid-19 pandemic has put a new light on societal structural injustices inherent in our societies. The pandemic thus reveals and reminds us about the serious effects of segregation and unequal societies, and necessitates a closer look at the potential injustice involved.

This study aims to identify structural barriers involved in following recommendations from Public Health Authorities during the pandemic, especially in socio-economically vulnerable, low-income districts. Learning about these circumstances will help Nordic societies be better prepared for future challenges and crises.

Through the quantitative mapping of city district level in Oslo, Helsinki, Copenhagen, Stockholm, and Malmö, we aimed to outline relevant indicators relating to the increased risk of Covid-19 infection. Included indicators are annual income, share of residents with foreign background, share of inhabitants working in exposed occupations, and overcrowded housing conditions. Stockholm and Malmö were selected for an in-depth study on the sub-district level with more indicators, such as household sizes, educational level, car ownership, and spatial density.

To deepen the understanding of the conditions impacting possibilities to follow public recommendations for persons living in disadvantaged neighbourhoods, semi-structured interviews were conducted in Rinkeby-Kista, Stockholm and Rosengård, Malmö. These two sub-districts were selected because they share similar socio-economic characteristics, have a high share of the immigrant population, and have been disproportionately affected by the virus.

The Nordic strategies early shifted from containment to mitigation. Sweden responded somewhat later than its Nordic neighbours and took a less invasive approach based on guidelines and recommendations rather than imposing restrictions and lockdowns. The overall measures that were taken or advised to the public, however, did not differ much between the Nordic nations. The main focus was on social distancing, frequent handwash, avoiding public gatherings, self-isolation, working from home, and avoiding public transport systems.

The results from the case study on districts of Rinkeby and Rosengård in Sweden shed light on possibilities and barriers faced by people to follow the public recommendations in deprived areas. Several factors emerged, mainly revolving around limited possibilities to keep distance, stay at home, work from home, avoid using public transport, and access information and health services.

Possibilities to follow recommendations and guidelines to protect oneself and others cannot be seen in a vacuum when people face such varied challenges and different resources to cope with the pandemic.

Understanding recommendations and guidelines has not been reported to be an issue *per se*, even when language difficulties are at play. Most people have been able to obtain information about the pandemic, if not from Sweden, then from their country of origin or from international media. The early debates claiming that a lack of language sufficiency was to blame for the disproportionate spread in certain ethnic minority groups is not found to be the most urgent issue in the report.

Self-isolation is harder when living in multigenerational and crowded households, a factor that can be attributed to barriers accessing the general rental and housing market.

Working from home is impossible for front-line workers, many of whom have foreign background or low socio-economic status.

Staying at home when experiencing symptoms is hard when having an insecure working situation, such as gig work and hourly contracts.

Avoiding public transport and rush hours is difficult when not having the resources to use other means of transport or flexible working hours.

Accessing health services such as ordering polymerase chain reaction (PCR) tests online is difficult for individuals lacking bank ID, access to digital devices, or an internet connection. This also excludes undocumented migrants and homeless individuals. Language insufficiency and illiteracy pose another obstacle in navigating information from public authorities. Local actors, health-care providers, and organisations have, however, worked hard to ease access to information, health services, and support in the case areas.

The overall picture shows that citizens in the case areas indeed have understood and wanted to adapt and protect themselves against the virus, but their life situation – caused by socio-economic factors and segregation – have not always allowed them to do so, at least not to the same extent as better-off or wealthy individuals.



Photo: Ricky Molloy/norden.org

1. Introduction

Vulnerable groups are particularly susceptible to crises. In the light of the Covid-19 pandemic, this has become especially noticeable. While anyone runs the risk of being infected with the virus, the pandemic is hitting societies along socio-economic lines, concerning both the spread of the infection and the pandemic's economic impacts (Hansson et al., 2021). Although Nordic countries have long been international champions of equality, certain socio-economically disadvantaged neighbourhoods in the Nordics have been particularly exposed to a relatively high spread of Covid-19, during specific periods of the pandemic (Folkhälsomyndigheten, 2020e; Holmager et al., 2020; Imaijne, 2020; Lundkvist et al., 2020; Nordic Co-operation on integration, 2020; OECD, 2020).

While the geographic spread of the virus is irregular and has been difficult to foresee, some factors have emerged as reasons for the over-representation of persons infected by Covid-19 in some disadvantaged neighbourhoods. These factors are overcrowded apartments (Bartelink et al., 2020; Folkhälsomyndigheten, 2020e), intergenerational cohabitation (Florida & Mellander, 2020), lack of information due to language barriers (Lundkvist et al., 2020), an occupation with little possibilities for social distancing (Bartelink et al., 2020; Folkhälsomyndigheten, 2020d; Lundkvist et al., 2020), poor health or comorbidities (Biesalski, 2020; Blundell et al., 2020; Ssentongo et al., 2020; Townsend et al., 2020), disadvantaged neighbourhood (Florida & Mellander, 2020), low income (Bartelink et al., 2020), and more. As this current study and other studies show (Hansson et al., 2021), these factors often coincide within the same residential spaces. The pandemic thus reveals and reminds us about the serious effects of segregation and unequal societies, and it necessitates a closer look at the potential injustice involved.

Many already existing divides and inequalities in our societies, including the Nordic Region, have surfaced during the Covid-19 pandemic. The spring of 2020 revealed many pre-existing spatial injustices, adding yet another layer to the complex relationship of the many factors shaping spatial variations in the distribution of wealth and well-being. A wide body of literature has been produced on the disproportionate impacts of Covid-19 in terms of cases and deaths among less advantaged people and communities, ethnic minorities, and front-line workers (Bartelink et al., 2020; Florida & Mellander, 2020; Folkhälsomyndigheten, 2020d, 2020e; Lundkvist et al., 2020). This body of literature also concerns the spatial variations observed in the spread of the virus. It is well-known that geographical variations in health reflect socio-economic inequalities between

areas, and that poor, low-income earners, and vulnerable groups, in general, suffer the most far-reaching consequences in times of crises. The impact of socio-economic conditions on the risk of being infected with Covid-19 thus brings attention to the importance of *place*. With spatial segregation, many layers of inequality interact and create conditions for the populations that impact their daily life in different ways, depending on where they live.

A key objective of this study is to contribute to the Nordic debate on social equality and effects of inequality, with a focus on low-income areas with a high share of foreign-born residents that have been more affected by the Covid-19 outbreak. More specifically, we aim to identify structural barriers that pose difficulties for residents to follow public recommendations during the pandemic, and to find good practice examples of methods and measures that prevented the spread of Covid-19 in socio-economically vulnerable low-income districts. Learning about these circumstances will help Nordic societies to be better prepared for future challenges and crises.

The study focuses on the following key questions:

- **What are the potential explanations for the high infection rate of Covid-19 among individuals with a foreign background?**
- **How did socio-economic conditions in vulnerable city districts affect the ability of residents to follow the public recommendation?**
- **How could the general guidelines be made more relevant for these city districts?**

These questions guide the qualitative interviews and quantitative mapping that were carried out to deepen the understanding of the conditions that impact the possibilities to follow public recommendations for persons living in disadvantaged neighbourhoods. Oslo, Helsinki, and Copenhagen have each been mapped at city district level to outline relevant indicators relating to annual income, share of residents with foreign background, share of individuals working in particularly exposed occupations, and overcrowded housing conditions, as these are among the factors that have been identified as contributors to the disproportionate impact of Covid-19 in vulnerable areas. Stockholm and Malmö were selected for a study on the sub-district level with more indicators, such as household sizes, educational level, car ownership, and spatial density. In addition, semi-structured interviews were performed with the intention to deepen our understanding of the phenomenon. Two sub-districts were selected in Sweden, one in each city, since on-site case studies in the other Nordic countries seemed improbable without international travelling. Besides, Sweden has been the hardest hit of the Nordic countries. The first sub-district is Rinkeby in Järva, northern Stockholm. The virus hit Järva to a greater extent than other districts of Stockholm during the spring of 2020, where the period in focus is March to June 2020. The second sub-district is Rosengård in Malmö, with a particular focus on Herrgården. This district was less affected during the first wave, as was Malmö in general, but by the second wave and particularly by the end of October 2020 and onwards, there was a high increase in cases in Malmö and Rosengård in particular.

Due to the severity of the pandemic, the semi-structured interviews were conducted via video link in the two sub-districts, for a deeper investigation of the research questions. Twelve interviews were carried out with 14 persons in total in both cities. The interviewees are actors within the civil society and public sector, including the local city administrations, local health centres, and the housing sector. The selection of interviewees was made with the aim to give perspectives on several of the topics that have been identified as important for the disproportionate spread of Covid-19 in some residential areas: socio-economy, language skills and spread of information about Covid-19, housing conditions, conditions and occupations at the labour market, and public health situation. The interviews were conducted between December 2020 and March 2021. In addition to the quantitative mapping and the qualitative interviews, various studies and reports have been reviewed from the Nordics and beyond.

The administrative structure of the cities mapped is presented in Table 1.

The disposition of the report is as follows. In Chapter 2, the spread of the virus in the early phase of the pandemic is counted for in all the Nordic countries. The general guidelines adopted in the Nordic states early in the pandemic are also summarised. Chapter 3 covers socio-economic factors and spatial segregation in relation to Covid-19, including quantitative maps from Oslo, Helsinki, and Copenhagen. Chapter 4 includes quantitative and qualitative data from the Swedish case study areas concerning key attributes relevant for the spread of Covid-19. Finally,

Chapter 5 presents conclusions and recommendations.

	Stockholm	Malmö	Copenhagen	Helsinki	Oslo
Municipality	Kommun	Kommun	Kommune	Kaupunki	Kommune
District	Stadsdelsområde	Stadsdel	Bydel	Peruspiiri	Bydel
Sub-district	Stadsdel	Delområde			

Table 1: Administrative structure of the Nordic cities mapped.

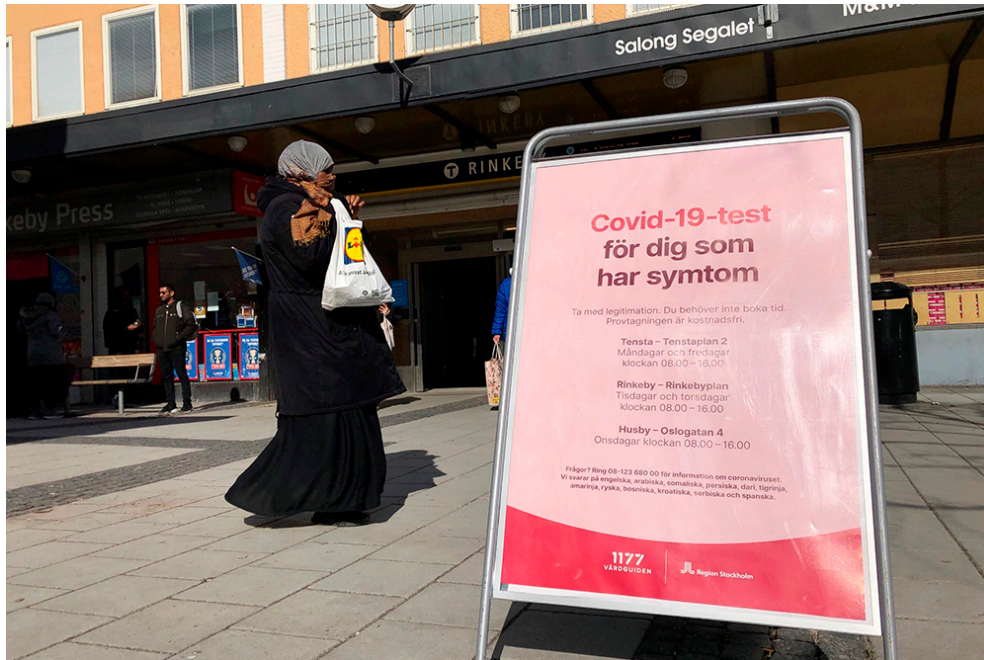


Photo: Hjördís Rut Sigurjónsdóttir

2. The spread and containment of Covid-19

Early spreading in the Nordic Region

The two first known cases of Covid-19 in the Nordic Region originated from Wuhan, China. The first was diagnosed in Northern Finland on 29 January 2020 (Niinimäki, 2020), and the second two days later in Sweden (Ludvigsson, 2020). By this time, community transmission was yet to occur.

The virus started to spread in the Nordic countries a month later, mainly via individuals returning from winter holidays in central Europe, in particular the epicentre in Northern Italy (Yarmol-Matusiak et al., 2021; and Holmager et al., 2020). The second case in Sweden and the first case in Iceland were confirmed on the 26 and 28 February, respectively, in persons returning from northern Italy (Gudbjartsson et al., 2020; Ludvigsson, 2020; The local, 2020). In Sweden, the virus thereafter mainly started to spread in Stockholm and the Jämtland-Härjedalen region, where Sweden's largest skiing resort is situated (Holmager et al., 2020).

Community transmission in the Nordics was seen at approximately the same time, perhaps due to the close geographical proximity and economic connections between the Nordic countries (Juraneck & Zoutman, 2020). Norway reported its 100th case on 4 March, Sweden on 6 March, and Denmark on 9 March (Juraneck & Zoutman, 2020). In Sweden, this led the Swedish Public Health Agency (Folkhälsomyndigheten) to update the risk of transmission from moderate to very high (The local, 2020), and in Denmark, the Health Authorities (Sundhedsstyrelsen) changed their primary response from trying to contain the virus through isolation and contact tracing, to a strategy of mitigation (Holmager et al., 2020).

When the World Health Organization announced a pandemic on 13 March 2020, a similar number of cases had been reported in Denmark, Norway, and Sweden (about 650) (Conyon et al., 2020), with most concentrated in the urban regions. At the beginning of March 2020, when Covid-19 had started to spread in Sweden, it mainly affected the capital (Holmager et al., 2020), and by the end of April, the Stockholm region accounted for approximately 40% of all national cases (Imajine, 2020). During the same period, large regional differences were also seen in Norway, with Oslo in the south more than seven times as hard hit as Nordland in the north

(Holmager et al., 2020). In April, the capital regions in Norway, Finland, and Denmark accounted for between 55% and 70% of the cases in each country (Holmager et al., 2020; OECD, 2020).

Iceland reported being free from community transmission in mid-May (Murdoch & Gottfreðsson, 2020). This was possibly an effect of the intensive containment efforts by the Icelandic health-care authorities, including mass screening and contact tracing (Gudbjartsson et al., 2020). At one stage, Iceland was performing more tests per capita than any other country (Murdoch & Gottfreðsson, 2020). In Finland, the outbreak peaked in the beginning of April (Moisio, 2020; Tiirinki et al., 2020) with the curve flattening in mid-April, and by mid-May more than half of Finland's health-care districts reported less than 100 cases, leaving large parts of the country almost untouched (Moisio, 2020).

While data on total cases is hard to compare between the Nordic countries, given that testing behaviour and policies have varied, data on Covid-19 mortality is more comparable. After the lockdown policy, the number of deaths was significantly lower in Norway, Finland, and Denmark compared with Sweden. This can be seen from a later snapshot on data from 29 May (see Table 2).

Sweden	Denmark	Finland	Norway	Iceland
43,1	9,8	5,7	4,4	2,8

Table 2: Death rates of Covid-19 per 100,000 inhabitants on 29 May 2020. *Sources: (Conyon et al., 2020; Worldometer, 2021b, 2021a).*

According to Yarmol-Matusiak et al. (2021), the higher Covid-19 mortality seen in Sweden might be explained by the age distribution of the population or the age distribution in infections. A total of 13% of detected cases in Sweden were among people of the age 80 years or older, compared with between 5% and 9% in Denmark, Finland, and Norway. Care homes have also accounted for a major proportion of Covid-19 deaths in each nation. Up until 31 July 2020, 45% of Covid-19-related mortalities in Sweden were attributed to care homes, 60% in Norway, 35% in Denmark, and 44% in Finland (Yarmol-Matusiak et al., 2021). In the Organisation for Economic Co-operation and Development (OECD), the average share of deaths in care homes was 42% (Yarmol-Matusiak et al., 2021).

Differences in the cumulative incidence of Covid-19 in the Nordics

By 30 June, the cumulative incidence of Covid-19 infections in Sweden had reached 663 per 100,000 inhabitants (Folkhälsomyndigheten, 2021), while the corresponding numbers for the neighbouring Nordic countries were 511 in Iceland (Worldometer, 2021a), 221 in Denmark (Stewart, 2020), 167 in Norway (NIPH, 2020), and 131 in Finland (Worldometer, 2021b).

Guidelines to reduce infections

This section introduces some of the guidelines in the Nordics during the first period of the pandemic. It is not designed to be a comprehensive overview, rather to bring forward aspects relevant to our research questions. The Nordic countries adopted similar initial strategies of testing suspected cases and travellers with symptoms (Yarmol-Matusiak et al., 2021). As cases increased, however, testing strategies shifted to include high-risk groups and individuals with severe respiratory symptoms (Yarmol-Matusiak et al., 2021). At large, Sweden was a bit later than its Nordic neighbours in the introduction of many mitigation measures. Norway, Denmark, and Finland closed schools and workplaces, and many other services between 10 March and 16 March 2020, while Sweden took comparable measures between 21 March and 25 March (Yarmol-Matusiak et al., 2021).

Early on, Denmark tried to contain the virus by isolating cases through contact tracing, but as the majority of national cases came from community infection in early March, the strategy changed from containment to mitigation (Holmager et al., 2020). Denmark introduced strict measures to curb the spread of the virus (European Commission, 2020) including travel restrictions (Conyon et al., 2020). The prime minister announced on 11 March a country-wide shut-down of non-essential public sector services, and employees to stay at home with pay, taking effect two days later (Lindström, 2020). Private employers were urged to allow employees to work from home if possible (Lindström, 2020). This was further accompanied by a temporary closure of cultural venues such as libraries and museums (Lindström, 2020). The borders were officially closed to non-Danes and non-residents on 14 March (Nikel, 2020), and two days later, all public schools and day-care centres in Denmark were closed. On 18 March, Denmark banned public meetings of more than 10 people (Lindström, 2020) together with the closure of bars and restaurants, which were only allowed to sell takeaways, and reduced public transport services (European Commission, 2020). On 23 March, it was announced that the lockdown would remain until mid-April (Lindström, 2020). Denmark imposed a gradual reopening of society from mid-April, which started with childcare and schools, and by 2 June most businesses and restaurants had reopened, with some limitations (Holmager et al., 2020).

Norway introduced quarantines for everyone arriving at the country from 27 February except for arrivals from Finland and Sweden. After the first Covid-19 death reported on 12 March 2020, the Norwegian Directorate of Health (Helsedirektoratet) announced the closure of schools and kindergartens (with the exception for children of key workers), cultural and sports events, gyms and swimming pools, pubs, night clubs, and bars, if social distancing could not be maintained (Lindström, 2020). This was combined with travel bans (Indseth et al., 2021), and health-care professionals were prohibited from travelling abroad until 20 April (Lindström, 2020). By 19 March, overnight stays outside one's home municipality were banned, including in holiday homes (Ursin et al., 2020). Some measures were also mandated by law with potential sanctions. For example, people with symptoms of respiratory tract infection must stay at home until at least one day after feeling entirely well and at least three days after recovery from Covid-19. Home quarantine for 14 days for people who had travelled abroad and for people who had been in contact with an infected individual was implemented (Ursin et al., 2020). By 2 April, no more than five people were allowed in any gathering (Ursin et al., 2020). Taken together, these measures were the strictest and most invasive in peacetime (Cedefop, 2020). By the middle of June, however, the nation gradually started opening up, with travel allowed between the Nordic countries, public events allowed for 200 people, and fitness centres, pools, and waterparks reopened (Ursin et al., 2020).

Iceland initiated a ban on gatherings of more than 100 persons, together with the closure of universities and a statement that social distancing of at least 2 m should be maintained on 16 March (Gudbjartsson et al., 2020). Gatherings in Iceland were restricted to no more than 20 people on 24 March, followed by the introduction of self-isolation measures and a ban on visits to nursing homes and hospitals (Gudbjartsson et al., 2020). No shut-down period and no official border closure to non-residents were involved in the Icelandic strategy, but rather the aim was to

mitigate infection and keep numbers as low as possible (Murdoch & Gottfreðsson, 2020). By 24 April 2020, new quarantine rules also came to apply, with a mandatory quarantine for 14 days from arrival for everyone entering Iceland (The Directorate of Health & The Department of Civil Protection and Emergency Management, 2020). To keep the country open, everyone travelling to Iceland had to go through double screening, from mid-August and forward. Everyone was tested when arriving at the international airport and again after a 5–6-day quarantine. If people decided to skip the later testing, then a 14-day quarantine was valid (Government of Iceland, n.d.). From the beginning, testing has been profound, followed by tracing in case of infections where everyone close to an infected person is tested and quarantined.

The Finnish government declared a state of emergency on 16 March, imposing a series of measures (Tiirinki et al., 2020). These involved closing of all schools except for primary education; closure of most public facilities such as libraries, museums, and theatres; a ban on public meetings with more than 10 persons; and a ban on visits to hospitals and nursing homes, except to critically ill patients (Lindström, 2020). The borders were shut-down (Niinimäki, 2020) except for the return of Finnish citizens and people residing in Finland, from whom a two-week mandatory quarantine was required. Employees in the public sector were ordered to work from home if possible (Finnish Government, 2020a). In an attempt to prevent the spread of coronavirus, on 27 March 2020 the Finnish government decided to isolate the region of Uusimaa by preventing free movement between the region and the rest of the country for nearly three weeks. Residents were ordered to stay in the region, while residents of other regions were denied entry, with some exceptions (Finnish Government, 2020b). By 4 April, all restaurants in Finland were ordered to close until the end of May, with the exception of takeaways and delivery (Finnish Government, 2020c).

Sweden introduced less strict measures than its Nordic neighbours, which also were to a higher degree voluntary rather than compulsory (Conyon et al., 2020). The recommendation form has been attributed to the Swedish constitution (Ludvigsson, 2020), stating the citizens' right to move freely within and outside of Sweden (Regeringskansliet, 2012). While the Swedish Infectious Disease Act can restrict individuals, at this point it did not allow for a general lockdown (Ludvigsson, 2020). The Swedish constitution further stipulates that all municipalities in Sweden enjoy local self-government. Each municipality is responsible for local matters such as infrastructure, housing, business development, schools, and elderly care (Ludvigsson, 2020). This decentralised structure has also arguably impacted decision-making during the early phase of the pandemic (Ludvigsson, 2020).

The Public Health Agency of Sweden initially aimed to make recommendations that would be tolerable by the public for a prolonged period so that society could keep operating (Ludvigsson, 2020). Since the key examples in this report relate to the Swedish context, a synthesis of the most general recommendations in the first phase of the pandemic, which are applicable to this study, is specified as follows.

- Encouraging individuals to remain at home if having any influenza-like symptoms.
- Instructing individuals aged 70 years and above to limit social contacts.
- Encouraging employers to let the employees work from home when possible.
- Limiting the number of individuals allowed in public gatherings, first to 500, then to 50.
- Encouraging individuals to avoid social gatherings such as parties and weddings.
- Moving education in high schools and universities to distance teaching.
- Recommending individuals to avoid all non-essential travels, also between regions.
- Encouraging individuals to avoid public transport.
- Instructing restaurants and bars to make arrangements to secure social distancing and avoid crowding.

Authorities' actions supporting individuals to act according to the general guidelines were as follows.

- Various measures were taken to facilitate individuals to stay at home when at risk of infecting other persons, or when the situation requires, for example, taking care of children

in case of schools and kindergarten closure.

- Abolishing the sick-day deduction (karensdag), to facilitate individuals to remain at home even with minimal symptoms (Regeringskansliet, 2020).
- Making it possible for employees to remain at home for 14 days without a medical certificate (Flood, 2020).
- Introducing carrier allowance (smittbärarpenning) for employees that risk infecting others (Flood, 2020).
- Abolishing the requirement for a medical certificate from day eight for the care of a sick child (Flood, 2020).
- Making it possible for parents to get parental allowance if school or kindergartens closed (Regeringskansliet, 2020).
- All sectors were encouraged to display clear information, mark distances on the floors to avoid social crowding, and offer hand sanitiser.
- The public transport sector had to ensure (i) enough traffic to reduce the risk of crowding, (ii) limit the number of passengers per vehicle, and (iii) inform their passengers on how they can reduce the risk of spreading the virus.
- Information was published in various languages in addition to Swedish, including an available national help-line in languages such as Arabic, Somali, and Tigrinya.

We have here very briefly outlined the spread of Covid-19 in the Nordics in early 2020, and the general measurements taken by the Nordic nations in order to mitigate the impact of the virus and dampen its spread. Next, we examine how Covid-19 relates to spatial segregation and fundamental socio-economic and demographic characteristics, including ethnicity, disposable income, educational attainment, and occupation, in the specific setting of Nordic urban areas.



Photo: Hjördís Rut Sigurjónsdóttir

3. Socio-economic conditions, spatial segregation, and Covid-19

The previous sections have established the disproportionate impact of Covid-19 in terms of cases and deaths among, for example, less advantaged people and communities, ethnic minorities, and front-line workers in the Nordic Region. This section focuses on exploring potential explanations for this. It begins by identifying the socio-economic and socio-spatial factors that have been most influential in shaping individual and collective responses to the pandemic based on recent literature. It then explores how these factors interact in Nordic cities based on an extensive collection of maps at the neighbourhood level.

Socio-economic factors and Covid-19

Socio-economic factors include a broad range of aspects related to an individual's social and economic situation, such as income, education, and employment. Lower socio-economic groups tend to have poorer health, which can be explained in part by lower income, worse working and housing conditions, weaker social networks, and less access to health care (Bartelink et al., 2020). In the context of Covid-19, several socio-economic factors have been found to be relevant, including age, gender, health, economic situation, and income. Moreover, educational attainment, living conditions, and occupational circumstances are also important. From a demographic perspective, the symptoms of Covid-19 are more likely to be severe and more likely to be fatal for older people, men, and people with certain underlying health conditions (Blundell et al., 2020). The Covid-19 pandemic has been claimed to hit socio-economically vulnerable populations harder, with a higher mortality rate within this group, not least in Sweden. Within this group, many have an immigrant background (Hansson et al., 2021). Household economy impacts socio-economic aspects discussed in this report, such as housing situation and means of transportation. In addition, the household economy can be affected by factors such as language skills and labour market position.

Concerning income, the Nordic countries have a long history of welfare policies designed to counteract poverty and promote equality (Lundgren and Cuadrado, 2020). While income inequality remains below the OECD average in all countries, it has increased in many Nordic municipalities in recent years (Grunfelder, 2020). In the Global North context, poverty is most often understood as a relative concept – that is, when economic resources fall short of household needs (Smeeding, 2002). In Sweden, for example, the term 'low socio-economic standard' (låg ekonomisk standard) refers to a situation in which household disposable income is below 60% of the median (Gårdemyr, 2020). Living in poverty limits full participation in society and impacts individuals' well-being in a range of ways (Lundgren et al., 2020).

The symptoms of Covid-19 are more likely to be severe and fatal for men than for women, for the old than for the young, and for people with certain underlying health conditions than for those without (Blundell et al., 2020). In regard to the latter, there is, in other words, a socio-economic gradient in medical vulnerability to the virus, with lower-income individuals being more likely to have a health condition that makes them more vulnerable to the disease. While the number of total cases of Covid-19 continues to rise, related risk factors for mortality to the virus seem to become clearer. On a biological level, comorbidities found to possibly increase this risk include conditions that affect the immune system, cardiovascular disease, hypertension, diabetes, chronic kidney disease (Ssentongo et al., 2020), and obesity (Townsend et al., 2020). In general, these diseases follow a socio-economic gradient (Ssentongo et al., 2020), and many of these conditions are more prevalent among ethnic minority populations (Hutchins et al., 2009). By contrast, migrants, according to the healthy migrant paradox, in general have better health than natives, in spite of coming from poorer socio-economic conditions and facing more socio-economic disadvantages in the host country (Juárez & Revuelta-Eugercios, 2016).

The role of genetic or ethnic factors on human susceptibility to viruses have long been suspected, but conclusive evidence is not yet available (Zhao et al., 2015). While an increased frequency of autoimmune diseases can be seen as one departs northward from the equator (Demeke et al., 2019), immigrants from non-western countries show, in a Danish study, higher levels of infectious diseases such as tuberculosis, HIV, hepatitis B and C, as well as vitamin D deficiency, stomach and bowel diseases (Hanne Winther Frederiksen & Nørredam, 2013), and diabetes (Greve, 2016). It is hence hard to provide any conclusions on the role of comorbidities related to Covid-19 severity in ethnic groups, but it is likely that socio-economic factors play a vital role.

A Danish study showed that immigrants experience multiple barriers to service utilisation, including language, money, transport, and trust (Hanne Winther Frederiksen & Nørredam, 2013), while, somewhat counterintuitive, another study showed that immigrants make more frequent visits to hospitals and primary care units (Greve et al., 2020; Greve, 2016). Overall, this shows that immigrants as a group are very diverse and that barriers are likely to differentiate (Karlisdóttir et al., 2018).

Spatial segregation and Covid-19

Spatial housing segregation occurs when individuals with specific characteristics are concentrated in the same neighbourhoods and consequently separated from groups with other characteristics (R. Andersson & Holmqvist, 2019). This report relates to spatial housing segregation of socio-economic groups. Through this concentration, many layers of inequality interact and create conditions for the populations that impact their daily life differently, depending on where they live (E. Andersson, 2020). As an example, ethnic segregation often overlaps with socio-economic segregation. As Andersson and Holmqvist (2019) put it, immigration has impacted the class structure, where many low-income earners today are foreign-born. Research on neighbourhood effects discusses the impact that segregation has on individuals and whether individuals are affected by the socio-economic profile of the area in which they reside. Andersson and Holmqvist (2019) give the examples that an area's stigma can impact individuals' opportunities at the labour market, or that a deteriorated or unhealthy

physical environment can affect a person's health status.

In the context of Covid-19, characteristics of the residential area have been found to affect the risk of being infected and mortality rates, even when controlling for individual socio-economic factors such as income, education, and occupation (Bartelink et al., 2020). Aspects that have been found to increase vulnerability to infection and mortality include poor housing conditions (OECD, 2020), overcrowding (Florida and Mellander, 2020; Folkhälsomyndigheten; 2020a), population density (Brandén et al., 2020), and living in a multigenerational household (Florida and Mellander, 2020; Brandén et al., 2020).

Overcrowding that has been mentioned in the context of Covid-19 is typically more common in socio-economically disadvantaged areas (Lorentzen et al., 2020). In Sweden, these areas tend to be dominated by the rental apartment sector (Tunström & Wang, 2019). A general shortage in the Swedish rental market creates difficulties in finding appropriate housing for individuals and families, both concerning size and affordability. Low-income groups are the most affected by this situation as they lack the capital to enter the private housing market.

In Sweden, there are two main definitions of overcrowding. According to norm 2, overcrowding refers to a situation when more than two persons are living together per room, excluding kitchen and living room (Boverket, 2016). Norm 3, which Grander & Salonen (2020) state is a more commonly used definition, considers overcrowding when the number of people in a household exceeds the number of rooms (excluding kitchen and living room), with the exception of spouses or cohabiting adults. A total of 15% of people with foreign background in Sweden were found to be living in extreme conditions, in 2018–2019, according to norm 2, compared with 2% of people with Swedish background (Grander & Salonen, 2020). The situation for immigrants that had lived less than 10 years in Sweden was even worse, with almost 30% living in cramped conditions according to norm 2 (Grander & Salonen, 2020).¹ It can be assumed that the figures are even higher because many factors were not covered in official data such as 'mattress contracts' and children up to 15 years old not being included in the national measurements (Grander & Salonen, 2020). Refugee and asylum seekers' settlement policies in Sweden, allowing them to settle where they want if able to arrange housing, can partly explain the situation. Many move to larger cities where they have social contacts, while some lodge with relatives or end up in illegal subletting by necessity (Tunström & Wang, 2019). In segregated areas, large families often live in too small apartments or together with members of other families, sharing both kitchen and bathrooms (Lorentzen et al., 2020).

Poor housing conditions, overcrowding, and multigenerational living occur against a backdrop of more general housing inequalities, which likely make self-isolation much more difficult and increase opportunities for within-household transmission. Households and individuals that lack the capital to establish themselves on the housing market rely on 'mattress contracts' (madrasskontrakt) (Grander & Salonen, 2020) or on the second-hand rental sector since the housing queue for primary rental contracts takes many years. According to Grander and Salonen (2020), the share of people relying on this type of solutions has increased, particularly in the cities and marginalised areas.

Poor living conditions are more common among immigrant groups. In the OECD countries, immigrants are more likely to live in substandard accommodations and extended cohabiting families, and are twice as likely to live in overcrowded dwellings compared with those who are native-born (OECD, 2020). Alongside these conditions, immigrants are also over-represented in higher density buildings and neighbourhoods making social distancing more difficult (OECD, 2020).

1. The latest measurement on crowded living in Sweden – for the year 2018–2019 – showed extreme overcrowding according to the so-called norm 2 in 5% of the adult population, translating into approximately 420,000 people (Grander & Salonen, 2020). For norm 3, the percentage was 17.4%, translating into approximately 1.5 million people (Grander & Salonen, 2020).

Spatial segregation and spreading among foreign-born in Oslo, Helsinki, and Copenhagen

In most parts of the world, the virus has spread most rapidly in larger cities (Lundkvist et al., 2020). The Nordic Region was no exception, with the highest incidence found in the capitals, particularly in the early stages (Drefahl et al., 2020; Holmager et al., 2020; Moiso, 2020). Marginalised neighbourhoods, generally those with larger immigrant populations, were particularly hard hit, both in terms of incidence and mortality (Ludvigsson, 2020; Ursin et al., 2020).

Copenhagen – Denmark

In Denmark, a disproportionately high spread among its immigrant population was observed. Here, individuals from non-western countries make up 9% of the population but accounted for 26% of all confirmed cases by 2 October 2020 (Statens Serum Institut, 2020b). Over-representation of non-western immigrants was obvious by 7 May, with a cumulative incidence of 315 per 100,000 inhabitants compared with 112 for western immigrants and 128 for Danish nationals (Statens Serum Institut, 2020a). While these numbers could not be attributed to testing behaviour, regional differences were noted in Copenhagen region with particularly high rates of infection in the neighbouring municipalities, so-called vestengskommuner, where many immigrants live, such as Rødovre, Hvidovre, Glostrup, Albertslund, and Ishøj (Statens Serum Institut, 2020a). Ethnicities from some countries also appeared to have been particularly hard hit, such as from Kuwait (1,358 per 100,000), Morocco (1,051), Jordan (1,074), Pakistan (760), and Somalia (656) compared with 128 for Danish nationals (Statens Serum Institut, 2020a).

Copenhagen Municipality includes 10 districts (Map 1). The maps show the proportion of the population in each district with a foreign background² (Map 3), the average individual annual income (Map 2), the share of households with more than four people (Map 4), and the proportion of the population employed in commerce, transport, hotel and restaurant, and health-care sectors (Map 5).

As can be seen in Map 3, the districts with the highest shares of inhabitants with a foreign background are Brønshøj-Husum (36.0%) and Bispebjerg (34.0%) in the north-western part of the city. These are also among the districts with the lowest incomes (Map 2), and where residents are most likely to be employed in commerce, transport, hotel and restaurant, and health-care sectors (Map 5). Brønshøj-Husum, the district with the largest share of inhabitants with a foreign background, is also the district with the largest proportion of households containing more than four individuals. In general, the household size is relatively similar for the districts in Copenhagen, as seen in Map 4. The darker the colour, the higher the share. The municipal average is 4.0%, and the differences among districts are not significant. The only exception is Brønshøj-Husum (8.2%), which is the district with the highest population with a foreign background. However, when the statistic is not available for larger household (eight or more, for example), it is not possible to realise the share or location of households of a more uncommon size. Considering the living environment in Denmark, people of non-western origin are more likely to live in conditions with a higher risk of transmission, such as in cramped housing (Statens Serum Institut, 2020c) or living with extended families (Holmager et al., 2020).

Small differences among districts in Copenhagen are again observed in Map 5, which shows the share of labour force employed in commerce, transport, accommodation and food services, and health-care sectors in 2018. The darker the colour, the higher the share. Brønshøj-Husum and Bispebjerg have the highest share, over 31%, while the municipal average is 29.0%. When looking at the disposable income, the most central district has the highest income (269,205 dkk), among all the districts in 2015. The income is 54.3% higher than in Bispebjerg, which has the lowest income (174,600 dkk) in all the districts in 2015. Brønshøj-Husum and Bispebjerg are also the two districts with the highest population with foreign background in Copenhagen.

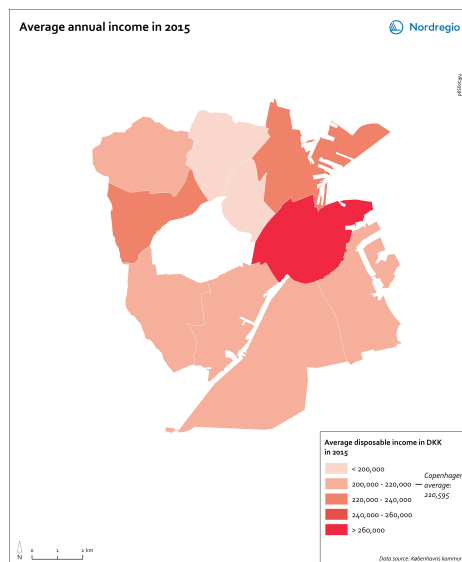
Statens Serum Institut, responsible for the Danish preparedness against infectious diseases, has suggested several causal factors for observed disparities, mainly socio-economic and behavioural factors (Statens Serum Institut, 2020c). Another factor might be that people of non-western

2. In Denmark, foreign background is defined as individuals who were either born outside Denmark or have two parents who were born outside Denmark.

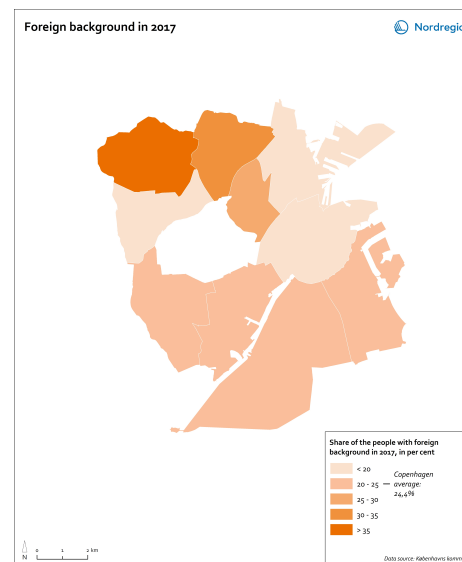
origin are more likely to be employed in sectors where the risk of transmission is high, such as in health, transport, and hospitality (Holmager et al., 2020), and to a lesser extent have the possibility to work from home (Statens Serum Institut, 2020c). Difficulties in understanding restrictions and recommendations have also been discussed in the Danish context. The daily press conferences with the prime minister and health authorities were broadcasted on national television, and the official state website only had information on the new Covid-19 rules available in Danish (European Commission, 2020).



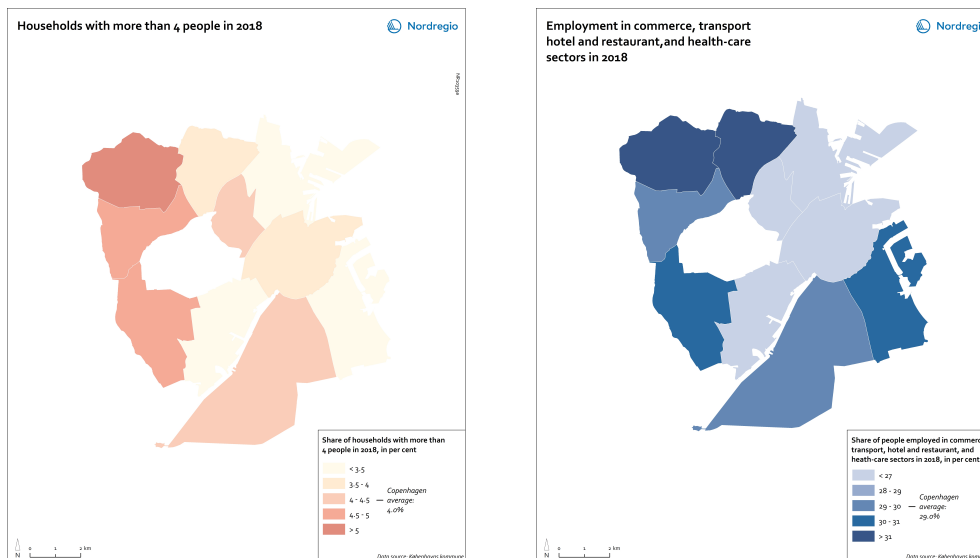
Map 1: Districts in Copenhagen. *Source: Københavns kommune*



Map 2: Average annual income in 2015 in Copenhagen. The darker the colour, the higher the income. *Source: Københavns kommune*



Map 3: Foreign background in 2017 in Copenhagen. The darker the colour, the higher the share of the foreign-born populations. *Source: Københavns kommune*



Map 4: Households with more than four people in 2018 in Copenhagen. The darker the colour, the higher the share of larger households. *Source: Københavns kommune*

Map 5: Employment in commerce, transport, hotel and restaurant, and health-care sectors in 2018 in Copenhagen. The darker the colour, the higher the share in these labour market sectors. *Source: Københavns kommune*

Helsinki – Finland

Most of the Covid-19 cases in Finland have been centred around the Uusimaa health-care districts, which include the capital Helsinki and cover about 31% of Finland's total population (Moisio, 2020). This was the case especially in the early phases of the pandemic, and by the end of April 2020, the capital region accounted for 69% of all confirmed cases in the country (OECD, 2020). Still, in March 2021, approximately 59% of all Covid-19 cases had been reported in the Uusimaa region (Yle Utiset, 2021).

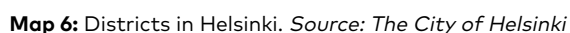
In the city of Vantaa, neighbouring Helsinki, where there is a relatively large international labour force, there have been large infection clusters on construction sites with many workers from abroad. There are especially many workers from Estonia, who are not always part of Finnish social security (Helsingin Sanomat, 2021b) (Helsingin Sanomat, 2021).

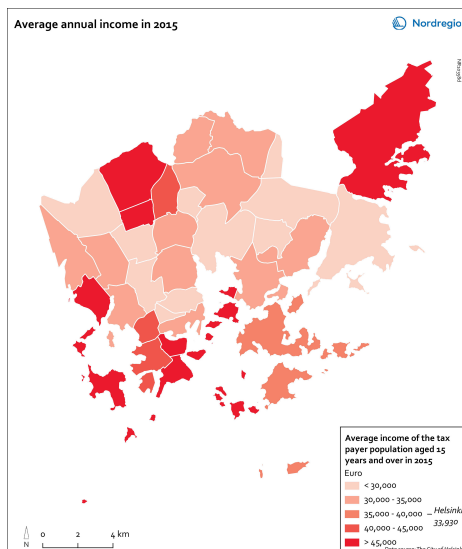
The City of Helsinki consists of 34 districts (Map 6). Specific areas with below-average income levels had higher rates of infection (Moisio, 2020), and particularly hard hit were the eastern parts of the Helsinki area, with its higher share of residents with immigrant backgrounds (Nordic Co-operation on integration, 2020). This discloses the same uneven pattern of Covid-19 infection that has been seen in some other urban areas elsewhere in the Nordic context. By December 2020, the National Institute for Health and Welfare (THL) reported that a fourth of all confirmed coronavirus infections in the country had been among individuals with foreign backgrounds while representing about 8% of the population (Helsingin Sanomat, 2020). At the end of February 2021, the general pattern remained, and the highest incidence of Covid-19 cases was found in the eastern and north-eastern suburban districts (YLE, 2021).

The maps show the proportion of the population in each district with a foreign background³ (Map 8). The districts with the highest share, in 2017, are Jakomäki (31.6%) and Mellunkylä (28.8%), while the city average is merely 14.9%. These are also the districts with the lowest average disposable incomes (Map 7) and with the largest proportions of their populations

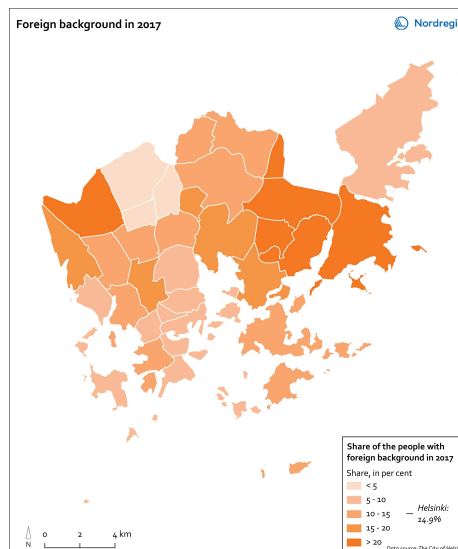
3. In Finland, foreign background is defined as individuals who were either born outside Finland or have two parents who were born outside Finland.

As the pandemic has progressed, the proportion of coronavirus infections has increased among residents with foreign backgrounds. While residents with a foreign background constituted around one-third of all coronavirus infections in the hospital district of Helsinki and Uusimaa in the Autumn of 2020, in March 2021, it was reported that this proportion had increased to around 40–50% (Helsingin Sanomat, 2021c). The main reasons for this are found to be structural, where working in professions in which distance working is not a possibility and overcrowded housing arrangements are mentioned as possible key explanations (Helsingin Sanomat, 2021a).

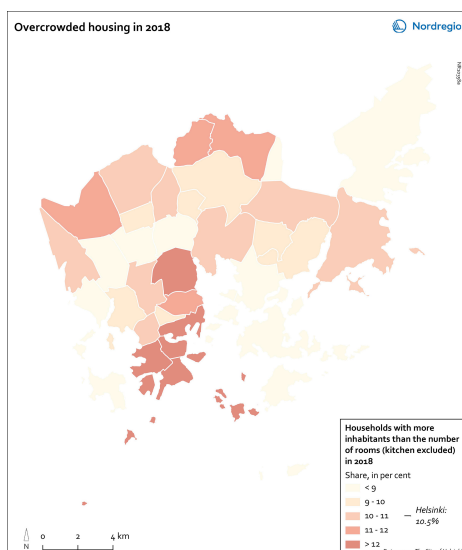




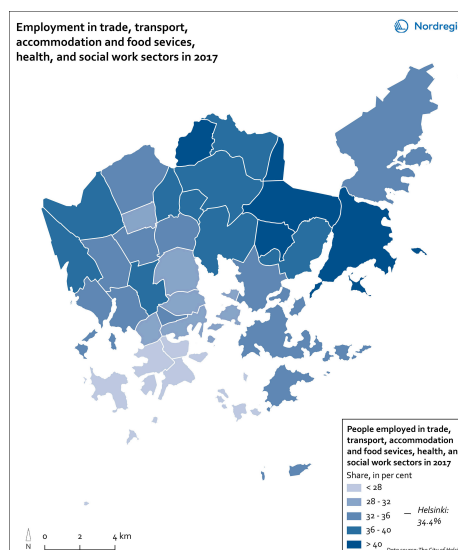
Map 7: Average annual income in 2015 in Helsinki. Darker colours represent higher values, and lighter colours lower values. *Source: The City of Helsinki*



Map 8: Foreign background in 2017 in Helsinki. The darker the colours, the higher the share of the foreign-born population. *Source: The City of Helsinki*



Map 9: Overcrowded housing in Helsinki in 2018. *Source: The City of Helsinki*



Map 10: Employment in trade, transport, accommodation and food services, health, and social work sectors in Helsinki in 2017. *Source: The City of Helsinki*

Oslo – Norway

Immigrants born outside of Norway were over-represented in regard to Covid-19 infection and hospitalisation, specifically individuals born in Pakistan, Somalia, Turkey, Eritrea, and Iraq (Skogheim et al., 2020). Despite making up only 18.5% of the population (Statistic Norway, 2021), individuals with immigrant background accounted for 30% of confirmed cases by 18 October (Indseth et al., 2021), and by 5 November 2020, 47% of hospitalised cases in Norway were born abroad (Skogheim et al., 2020).

Some population groups were more affected than others. For example, among immigrants from Somalia, the cumulative incidence was eight times higher, and rates of hospitalisation 15 times higher than among the native-born population by October 2020 (Indseth et al., 2021). Disproportionately high case numbers were also found among immigrants from Pakistan, Iraq, Afghanistan, and Iran (Indseth et al., 2021).

Oslo city consists of 18 districts, two of which are forested and hilly areas surrounding Oslo – Østmarka and Nordmarka (Map 11). With few inhabitants, Marka is a major recreational area for the population of Oslo, and development in the area is, for the most part, prohibited. The maps show the proportion of the population in each district with a foreign background⁴ (Map 13), the average individual annual income after tax and negative transfers (Map 12), the share of households with over five people (Map 14), and the proportion of the population employed in trade, transport, health, and social work sectors (Map 15). Darker colours represent higher values, and lighter colours lower values.

The districts with the highest shares of persons with a foreign background are Stovner (59.1%), Søndre Nordstrand (56.6%), Alna (54.7%), Grorud (51.7%), and Sentrum (50.7%). The districts with the lowest shares of persons with a foreign background are Marka (12.0%) and Vestre Aker (17.9%).

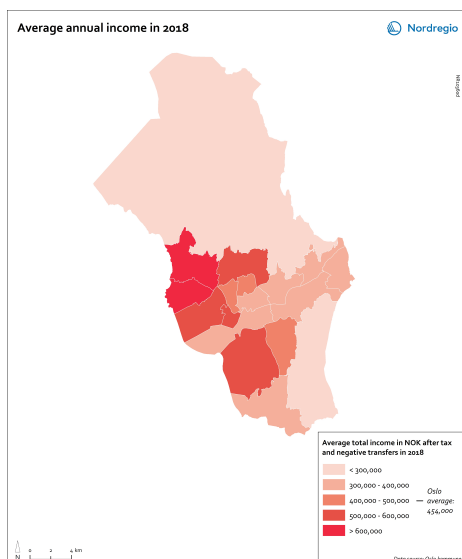
Map 12 shows the average annual income in 2018 in Oslo. Apart from Østmarka and Nordmarka with the lowest income of 215,000 NOK, the districts with a low income around 350,000 NOK can be found in Søndre Nordstrand and the eastern part of Oslo, that is, Stovner, Grorud, and Alna. These districts also have the highest share of foreign-born. Ullern and Vestre Aker, situated in the western part of Oslo, have the highest income level, over 600,000 NOK, in 2018.

The household size varies between districts in Oslo Municipality, as presented in Map 14. The share of relatively large households with more than five people is highest in Stovner and Vestre Aker, which is over 4%. Alna has a share of 2.6%. For the rest of the districts in Oslo, the share is below 2%, and there is no single household with more than five people in Sentrum in 2020. When it comes to employment by branch, Map 15 shows the employment in trade, transport, health, and social care sectors in Oslo in 2018. In total, Grorud, Nordstrand, Stovner, Alna, Vestre Aker, and Søndre Nordstrand have a relatively high share of around 50% of residents working in these branches. It is worth noting that the share of residents working in the health and social care sector is considerably high in Vestre Aker, which is 46.9%. The districts in central Oslo and Marka, for example, Sentrum, have a lower share of residents working in these sectors.

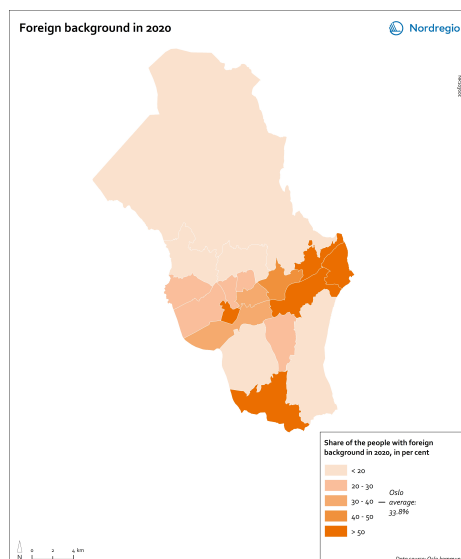
4. In Norway, foreign background is defined as individuals who were born either outside Norway or in Norway and have two parents who were born outside Norway.



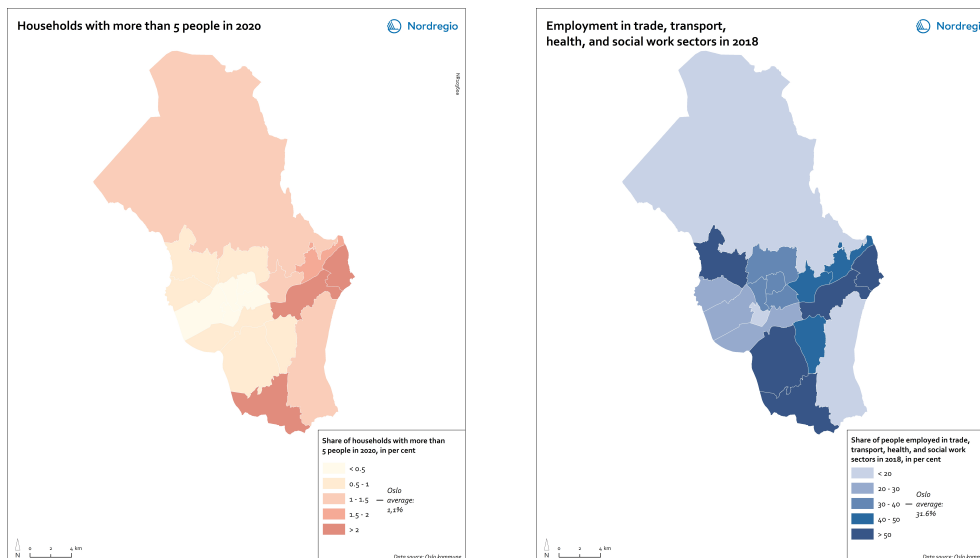
Map 11: Districts in Oslo. *Source: Oslo kommune*



Map 12: Average annual income in 2018 in Oslo. The darker the colour, the higher the income. *Source: Oslo kommune*



Map 13: Foreign background in 2020 in Oslo. The indicator of foreign background comprises individuals either born abroad or having both parents from abroad. The darker the colour, the higher the share of the foreign-born population. *Source: Oslo kommune*



Map 14: Households with more than five people in 2020 in Oslo. The darker the colour, the higher the share. *Source: Oslo kommune*

Map 15: Employment in trade, transport, health, and social work sectors in 2020 in Oslo. The darker the colour, the higher the share. *Source: Oslo kommune*

It is interesting to look at the maps in the context of differences in the cumulative incidence of Covid-19. Until the end of August 2020, higher cumulative incidence was particularly seen in some certain districts of Oslo. Particularly hard hit were low-income districts with a high share of foreign-born population such as Stovner (88 per 100,000), Alna (83), Grorud (70), and Søndre Nordstrand (69). The average in all of Oslo was 53 during the same period (Skogheim et al., 2020). The two hardest-hit districts, Stovner and Alna, are also districts with the highest share of foreign population and among the districts with the lowest annual income, as demonstrated by the maps. Furthermore, they are also the districts with large household sizes and a high share of the population working in front-line jobs.

In total, the highest rates of Covid-19 in Norway were found among people of working age and persons with low education and low income who may have faced more barriers to being able to follow official advice on social distancing. Immigrants are over-represented in both the low-income and low-education groups (Indseth et al., 2021). Other factors have also been linked to higher incidence among groups with a foreign background. One is living in small apartments or in larger households that make social distancing challenging (Indseth et al., 2021), and another is that many have occupations where they are more exposed to the virus and have fewer possibilities to work from home such as in health care, service, and public transport (Nordic Cooperation on integration, 2020). Comorbidities have also been brought up as an underlying factor in connection to Covid-19 severity. People in Norway originating from South Asia and the Middle East, as well as women from Somalia, also tend to have a higher prevalence of obesity, diabetes, and cardiovascular disease (Indseth et al., 2021), all of which are comorbidities that have been shown likely to increase the severeness of Covid-19 infection.

When investigating the dissemination of Covid-19 information in two city districts of Oslo – both with an immigrant population of about 40% (Skogheim et al., 2020) – it was found that the size of the immigrant population and the countries of origin impacted the efficacy of the information channels. Using already established channels and working with 'ambassadors' were shown to be specifically successful (Skogheim et al., 2020). The surge in Covid-19 among Somalis was, for example, brought to a halt in late March to early April 2020, conceivably due to joint efforts of the government and the Somali-Norwegian community (Indseth et al., 2021). These efforts to reach out to the immigrant population, for example, with translated information campaigns and by reaching out to community leaders (Indseth et al., 2021) were by the autumn of 2020

complemented with more targeted information activities to specific parts of the population, for example, with dialogue and direct meetings (Skogheim et al., 2020). The attempt to offer evacuation housing for those in cramped households seems not to have worked as intended. Skogheim et al. (2020) stated that the “quarantine hotels seem a well-preserved secret” since local organisations interviewed for the study did not know about this possibility.

Stockholm and Malmö – Sweden

In Sweden, 32% of cases during most of the first wave (13 March to 7 May) were found in the immigrant community, while this group only makes up for 19% of the population. A study by Folkhälsomyndigheten (2020a) showed a substantially higher incidence in certain ethnic groups, such as people from Turkey (753 in 100,000 inhabitants), Ethiopia (742), Somalia (660), Chile (624), Iraq (600), Lebanon (533), Iran (522), Finland (515), and Eritrea (477), compared with Swedish nationals (189). Mortality rates have also been disproportionately high, particularly among people over 40 years of age coming from countries such as Syria, Iraq, and Somalia, from where many refugees have arrived in the last decade. The death rate was 220% higher, for the same group, in March–May 2020 as compared with the average in 2016–2019 (OECD, 2020).

In Stockholm, the first Covid-19 cases were concentrated in the more affluent parts of the city (for example, Bromma, Norrmalm, and Östermalm), potentially transmitted by returning ski tourists. These districts all have a relatively high average annual income (Bromma being the highest in Stockholm) and are among the areas with the lowest shares of the foreign-born population. Thereafter, rapid transmission of the virus occurred in Rinkeby-Kista and Spånga-Tensta (Figure 1), which are among the areas with lowest average annual income and highest shares of the foreign-born population. By the end of April 2020, the cumulative incidence of Covid-19 was considerably higher in Rinkeby-Kista (760 per 100,000) and Spånga-Tensta (590) than in Stockholm County in general (309) (see Figure 1). The share of individuals who are foreign-born or have foreign-born parents is considerably higher in Rinkeby-Kista (83%) and Spånga-Tensta (60%) than in Stockholm county (30%) (Stockholms Stad, 2020).

Cumulative incidence of COVID-19 in the districts of Stockholm from March to June 2020

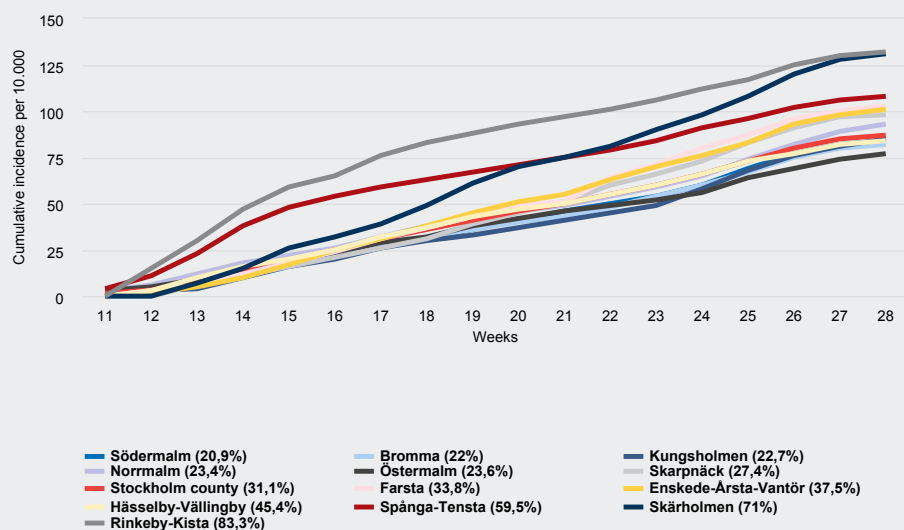


Figure 1: Covid-19 cumulative incidence per 10,000 inhabitants per week for the districts of Stockholm municipality. The graph shows cumulative incidences per 10,000 inhabitants to make it easier to visualise the trend. Share of foreign-born – or individuals with two foreign-born parents – shown in brackets (Folkhälsomyndigheten, 2020b, 2020c; Stockholms Stad, 2020).

Cumulative incidence of COVID-19 in the districts of Stockholm from November to December 2020

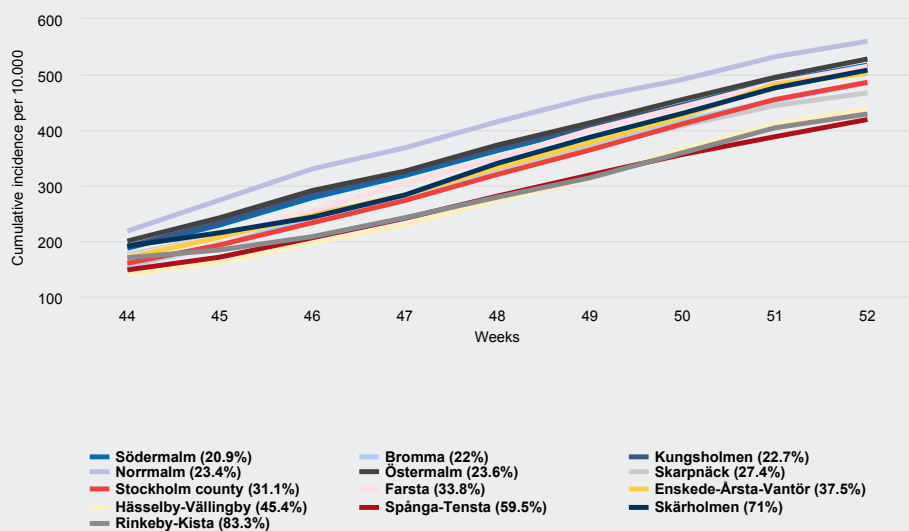


Figure 2: Covid-19 cumulative incidence per 10,000 inhabitants per week for the districts of Stockholm municipality. The graph shows cumulative incidences per 10,000 inhabitants to make it easier to visualise the trend. Share of foreign-born – or individuals with two foreign-born parents – shown in brackets (Folkhälsomyndigheten, 2020b, 2020c; Stockholms Stad, 2020).

Cumulative incidence of COVID-19 in the districts of Malmö from March to June 2020

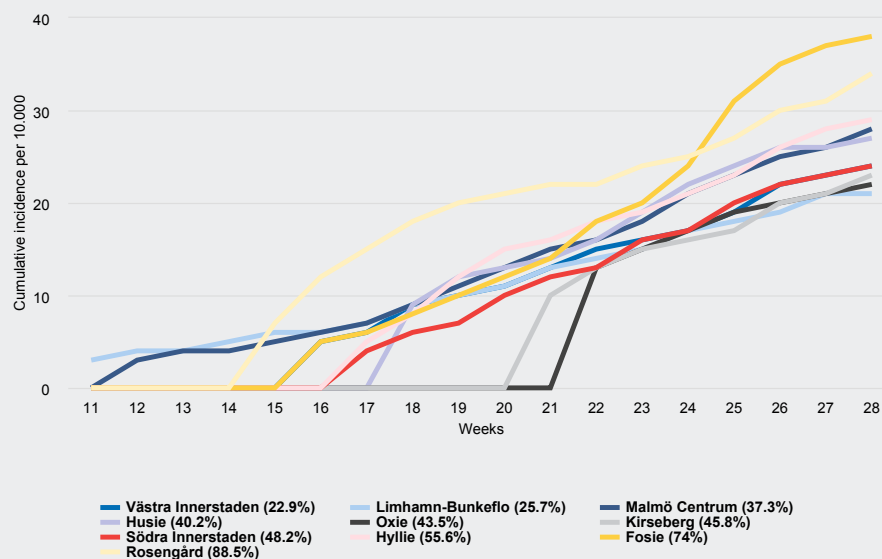


Figure 3: Covid-19 cumulative incidence per 10,000 inhabitants per week for the Malmö's districts. The graph shows cumulative incidences per 10,000 inhabitants to make it easier to visualise the trend. Share of foreign-born – or individuals with two foreign-born parents – shown in brackets (Folkhälsomyndigheten, 2020d; Malmö Stad, 2019).

Cumulative incidence of COVID-19 in the districts of Malmö from November to December 2020

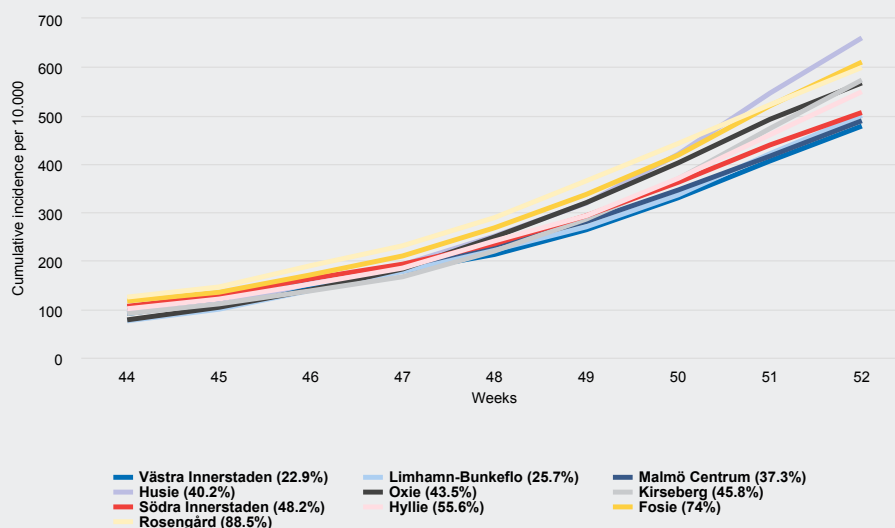


Figure 4: Covid-19 cumulative incidence per 10,000 inhabitants per week for the Malmö municipality districts. The graph shows cumulative incidences per 10,000 inhabitants to make it easier to visualise the trend. Share of foreign-born – or individuals with two foreign-born parents – shown in brackets (Folkhälsomyndigheten, 2020d; Malmö Stad, 2019).

Overall, the districts with a higher share of the foreign population, such as Rinkeby-Kista, Spånga-Tensta, and Skärholmen in the south of Stockholm, also show a higher cumulative incidence throughout the first wave of the pandemic. However, by early November (week 45) of 2020, the cumulative incidence of Covid-19 was for the first time lower in Rinkeby-Kista than in Stockholm Region as a whole, and the district, together with Spånga-Tensta, remained one of the least affected districts in Stockholm municipality for the remainder of 2020 (Figure 2).

The proportion of the population testing positive for Covid-19 antibodies has also been found to be higher in Spånga-Tensta (30%) and Rinkeby-Kista (19%) than in other parts of Stockholm (for example, Norra Djurgårdsstaden, 4.1%) (Lundkvist et al., 2020) during the first wave of the pandemic.

While Stockholm was most severely affected by the virus early on, other parts of the country followed somewhat different patterns. Malmö, for example, saw much lower mortality rates than Stockholm and also lower than Copenhagen, just 40 km away (Ludvigsson, 2020). As in Stockholm, the first cases in Malmö were concentrated in high-income areas, such as Limhamn-Bunkeflo and Malmö Centrum (Figure 3). However, once the virus entered Rosengård, the second week in April (week 15), the district with the highest share of the foreign-born population (88.5%) and lowest annual income in Malmö City, it had a quick local spread. Similarly, Fosie, the district with the second-highest share of the foreign-born population (74%), had a rapid increase in cumulative incidence at a later stage of the first wave (around week 25).

Even though the situation in Malmö was less severe than in Stockholm during the spring of 2020, differences between districts could still be detected. While cumulative incidence per 100,000 was 50 in Malmö as a whole by the end of April, it was three times as high in Rosengård, at 150 (see week 17, Figure 3). However, both numbers are considerably lower than those of Stockholm (309) and Rinkeby-Kista (760), where the pandemic was peaking.

A large proportion of early Covid-19 cases in Sweden affected ethnic minorities (Ludvigsson, 2020), which was rather straightforward in Stockholm early in the pandemic when comparing districts according to the share of the foreign population and Covid-19 cumulative incidence. Although the epidemic was not as severe in Malmö as in Stockholm during the first wave, the same trend occurred regarding the association between the foreign population's share in a district and Covid-19 cumulative incidence (see Figure 3).

During the second wave of the pandemic, Rosengård and Fosie continued to be among the worst affected districts in Malmö (Figure 4), which stands in contrast to Rinkeby-Kista being one of the least affected districts in Stockholm municipality at the time. During this period, the number of cases per week was also much higher, in general, than during the first wave. This can be seen for all districts of Malmö, as the vertical axis in Figures 3 and 4 shows. Another district that does stick out by the end of the year is Husie that has the oldest population.

We have here outlined socio-economic, demographic, and socio-spatial factors that have been addressed as shaping individual and collective responses to the pandemic, and how these factors interact in the Nordic setting. The maps presented for Oslo, Helsinki, and Copenhagen in this chapter show how the addressed indicators tend to accumulate in the same neighbourhoods. The neighbourhoods where the share of people with a foreign background is high, the income level is low, the households are often larger, and higher share works in health-care and service and transport sector. We have also described the characteristics of the spread of Covid-19 in the city districts of Stockholm and Malmö during 2020, and we see that neighbourhoods with similar characteristics as the other Nordic cities have been hit hard during the pandemic. Next, we present the maps for Stockholm and Malmö, together with findings from the qualitative interviews.

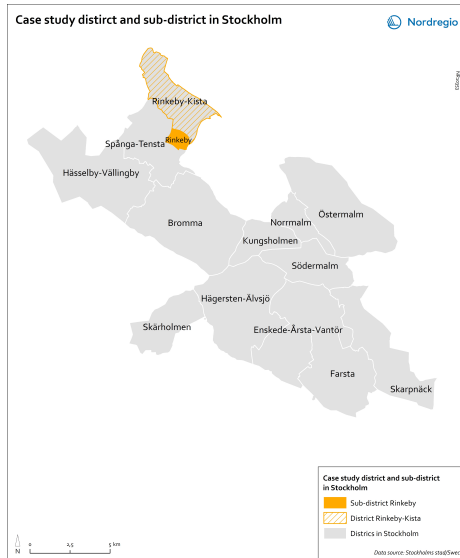


Photo: Ricky Molloy/norden.org

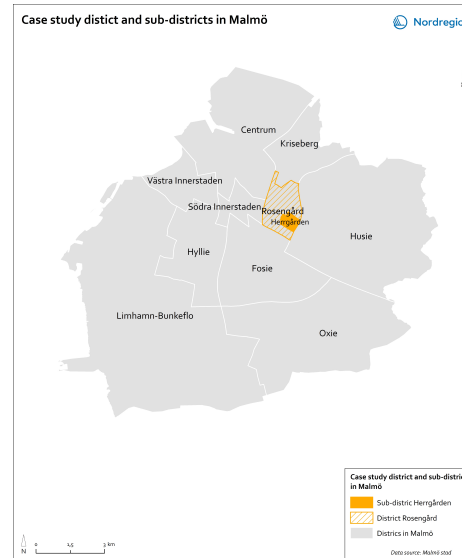
4. Socio-spatial factors and Covid-19 guidelines: Learnings from two Swedish districts

This chapter focuses on the case studies conducted in Sweden for a more in-depth understanding of possibilities or barriers faced by people in deprived areas following the public recommendations, during periods when the corona pandemic was on the rise. For this, two city districts in Sweden with similar social conditions were selected for semi-structured interviews along with mapping of district-level statistics. A series of maps highlighting socio-economic differences within the City of Stockholm and the City of Malmö is presented, where some maps are similar to those included in the previous section, while others have been added to provide a more comprehensive picture of the case study areas. The case study areas are Rinkeby-Kista in Järva in northern Stockholm (Map 16) and Rosengård, close to the central parts of Malmö (Map 17). The specific focus in both cases is how the socio-economic and socio-spatial conditions in these districts affected people's ability to follow Swedish Public Health Authorities recommendations and what can be done differently in a similar situation. Unless otherwise indicated, the data presented in this section is from the interviews.

Looking back, it is apparent, especially in the case of Rinkeby-Kista in Stockholm, that the community spread of the coronavirus occurred much faster than expected and before the authorities realised the seriousness of the matter. Various speculations have arisen about why the spreading was so rapid. People who have roots abroad tend to travel back for visits, engage in religious and social activities often in close proximity to fellow citizens, and have a tradition to care for their loved ones within the families. However, there seemed to be a general uncertainty among the residents where they or those they knew got infected. Some ideas considered taxi drivers, driving Alp travellers from the airport, had limited basis to understand so early in the pandemic that cold symptom could be Covid-19. However, contact tracing did not reach far before it stopped due to the estimation that there was a general spread of the virus in society.



Map 16: Case study district and sub-district in Stockholm. *Source: Stockholms Stad/Sweco*



Map 17: Case study district and sub-district in Malmö. *Source: Malmö Stad*

The case study areas

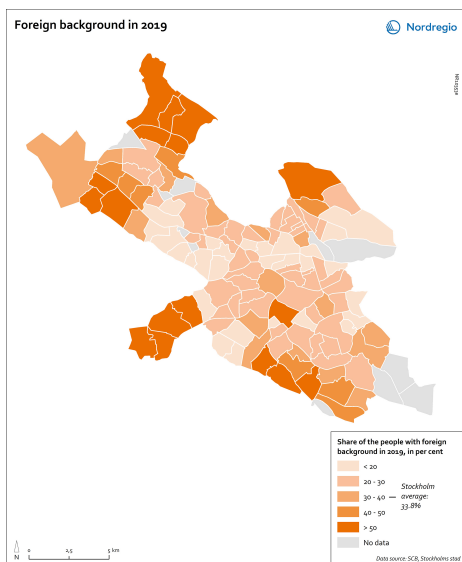
Rinkeby-Kista, one of the 13 districts of Stockholm City, is noted for its high concentration of immigrants and people with immigrant ancestry, 83.9% in the district as a whole and 91.5% in Rinkeby sub-district compared with the average of 33.8% in Stockholm City (Map 18). Rinkeby-Kista attracted attention early in the pandemic due to disproportionately high infection rates and deaths in the district. The Rinkeby-Kista case focuses particularly on the sub-district of Rinkeby, a typical million homes program suburb (*Miljonprogramsförort*) characterised by high-density housing. Regarding Rinkeby, the focus is on the pandemic's first wave, as this was the most significant period of the pandemic in Stockholm. Interviews were conducted between 10 December and 25 January. Interviewees included an infection nurse working in the local health-care centre, the district director and the manager for security-crime prevention, three actors from civil society organisations, and CEO from an umbrella organisation for real estate owners in Järva.

Rosengård, one of the ten districts of Malmö City, shares many characteristics with Rinkeby-Kista. The district has long been a destination for immigrants, with the share of the population with foreign backgrounds being 88.5% in Rosengård and reaching 95% in one of its sub-districts, Herrgård, in 2019 (Map 19). Located in central Malmö, Rosengård is a well-known million homes program area. The situation regarding the pandemic was quite different in Malmö when compared with Stockholm, with a relatively lower number of infections during the first wave. Therefore, attention in the Rosengård case is on the second wave and focuses specifically on the sub-district of Herrgård. Interviews were conducted between 25 January and 4 March. Interviewees included two nurses working in the district, two civil society actors, a civil contingency planer in Malmö city, and head of administration and property manager from the largest real estate company in Rosengård.

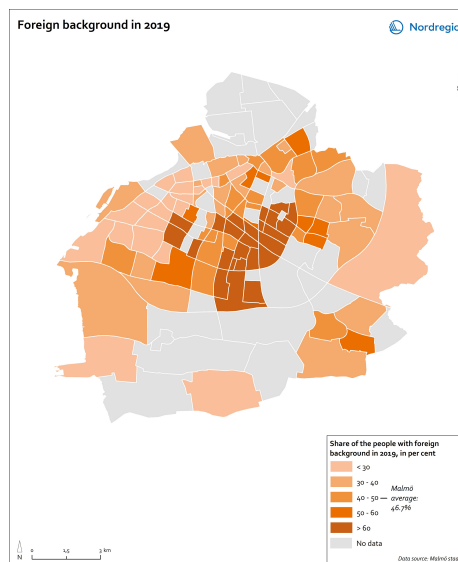
Alongside the high shares of those with a foreign background, Rinkeby and Herrgård also have similarities regarding income (Maps 20 and 21).⁵ Data from Stockholm Region indicates that income is the socio-economic factor most strongly correlated with the risk of dying because of Covid-19 (Bartelink et al., 2020). An investigation from Dagens Nyheter, using data from Statistic Sweden and Socialstyrelsen, also demonstrates that the likelihood of dying from

5. Analysis of statistical data until 30 June 2020.

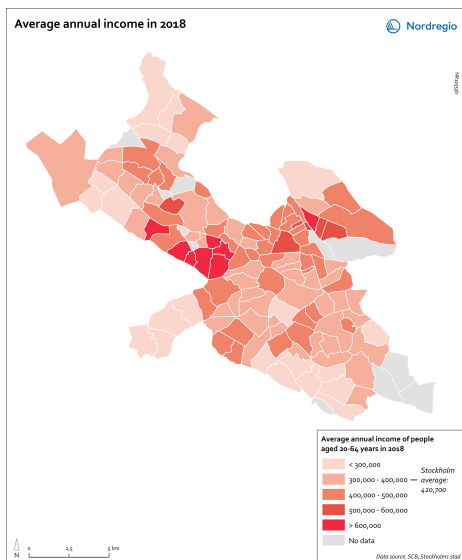
Covid-19 (age group 50–64 years) is much higher for low-income earners than for those with higher income levels. It is 280% higher for those who earn less than 10,000 SEK a month, compared with those who earn between 30,000 and 40,000 SEK (Dagens Nyheter, 2021). Map 20 shows the average annual income for people aged 20–64 years old in 2018 in Stockholm. Rinkeby had the lowest average income level in Stockholm City, 223,700 SEK, in 2018. While the highest average income was found in a sub-district of Bromma (Södra Ängby – 994,500 SEK), and the municipal average was 420,700 SEK. Map 21 shows the average annual income for people aged 20–64 years in 2018 in Malmö. Herrgårdén had the lowest average income level, 248,047 SEK, in 2018. The highest average income in Malmö was found in a sub-district of Limhamn-Bunkeflo (Bellevue – 912,268 SEK), and the municipal average was 375,215 SEK.



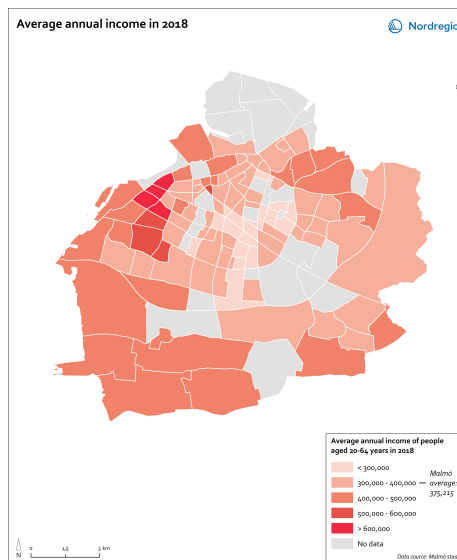
Map 18: Foreign background in 2019 in Stockholm. The darker the colour, the higher the share.
Source: SCB and Stockholms Stad



Map 19: Foreign background in 2019 in Malmö. The darker the colour, the higher the share.
Source: Malmö Stad

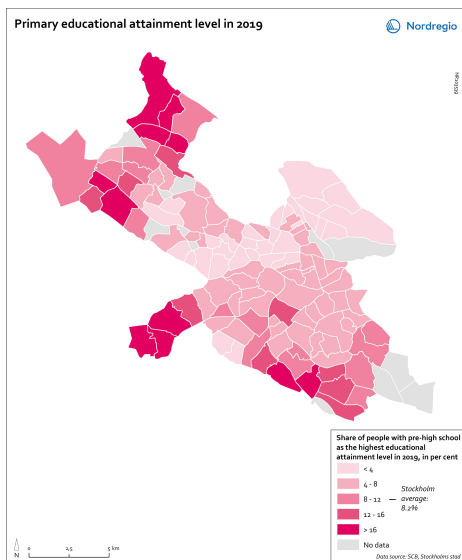


Map 20: Average annual income in 2018 in Stockholm. The darker the colour, the higher the income. *Source: SCB and Stockholms Stad*

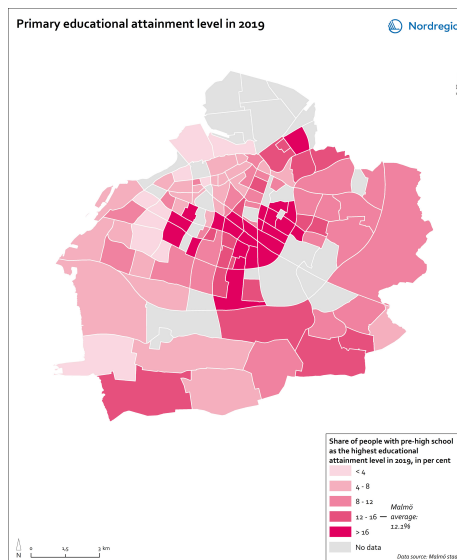


Map 21: Average annual income in 2018 in Malmö. The darker the colour, the higher the income. *Source: Malmö Stad*

A low level of education has been associated with higher incidence and mortality in Covid-19 (Bartelink et al., 2020; Dagens Nyheter, 2021). The risk of dying from Covid-19, with pre-high school as the highest education level, is much higher (248 per 100,000) than compared with those who have secondary education (151) and those who have at least three years of tertiary education (101.1) (Dagens Nyheter, 2021). Maps 22 and 23, respectively, demonstrate how the population is divided by educational level in Stockholm and Malmö. They show the share of people with pre-high school as their highest educational attainment level (primary educational attainment level) in 2019. The highest share is seen in Rinkeby (33.9%), while the average share for Stockholm Municipality is 8.2%. As shown in Map 23, the highest share of people with primary educational attainment in Malmö Municipality can be found in Herrgårdén (39.2%), while the average in Malmö Municipality is 12.1%.



Map 22: Primary educational attainment level in 2019 in Stockholm. The darker the colour, the higher the share. *Source: SCB and Stockholms stad*



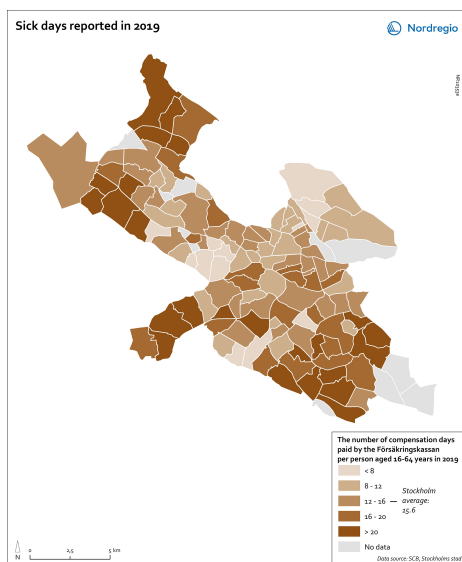
Map 23: Primary educational attainment level in 2019 in Malmö. The darker the colour, the higher the share. *Source: Malmö Stad*

As demonstrated in the maps, there are large variations regarding socio-economic factors between sub-districts in Malmö and Stockholm. Rinkeby in Rinkeby-Kista and Herrgård in Rosengård both have the lowest income level and the lowest educational levels. Two interviewees from the civil society in Rinkeby also touched upon this, suggesting that the companies and businesses in Kista, being the IT and business hub of the district, and the mixed housing forms in that part of the district play a significant role in the socio-economic variation between these sub-districts. Both of these structural factors (that is, employment and housing) are related to education and can contribute to a lower socio-economic status in Rinkeby compared with Kista, and even more so compared with other districts and neighbourhoods in relatively short geographical proximity, such as Bromma.

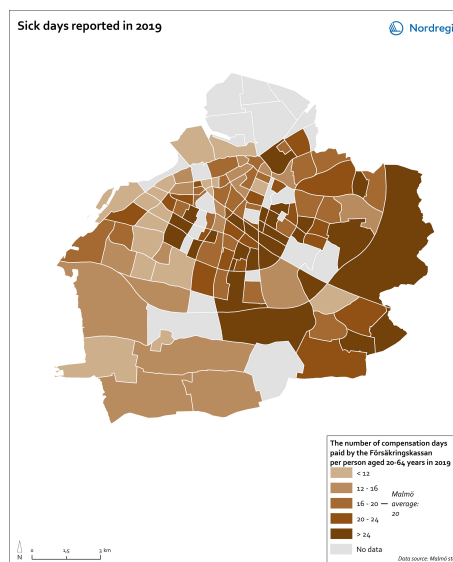
Health is closely related to social context and is affected by the conditions in which one lives, works, grows, and ages. The factors identified by health-care professionals regarding general health in the areas were comorbidities, different underlying issues such as high blood pressure and overweight, and smoking.

This goes hand in hand with the literature stating that geographical variations in health reflect socio-economic inequalities and that low-income earners and vulnerable groups, in general, suffer the most consequences in times of crises (Bartelink et al., 2020; Florida & Mellander, 2020; Folkhälsomyndigheten, 2020d, 2020e; Lundkvist et al., 2020).

The number of sick days in an area might give an appreciation of its inhabitants' health status. Reported sick days to Swedish Social Insurance Agency (Försäkringskassan) in 2019 indicate poorer health in the two case sub-districts than in many other areas of the two cities, see Maps 24 and 25. This reporting gives a picture of the overall health status of the working-age population before the corona pandemic. Most reported days are in Skärholmen (29.3), Husby (27.2), and Rinkeby (25.3), while the Stockholm average was 15.6 in 2019 (Map 24). Map 25 presents the same indicator for Malmö but for the age group of 20–64 years. Most reported days among the ten districts in Malmö are in Rosengård (29), where the sub-district Persborg had 46 days in 2019. The Malmö average was 20 days in 2019.



Map 24: Sick days reported to the Swedish Social Insurance Agency (Försäkringskassan) in 2019 in Stockholm. The darker the colour, the more the sick days. *Source: SCB and Stockholms Stad*



Map 25: Sick days reported to Försäkringskassan in 2019 in Malmö. The darker the colour, the more the sick days. *Source: Malmö Stad*

Individuals and families in Sweden are expected to have the ability and resources for a certain level of self-care at home, promote health, prevent diseases, and cope with illness without the support of a health-care provider. However, emerging from the interviews with health-care professionals in both districts, the ability and resources needed to perform self-care are lower than generally assumed. The focus on self-help became problematic when people could not afford resources such as painkillers, thermometers, and supplements to counteract dehydration.

According to the interviewees, the general expectation towards the health-care centres in these districts is high, and the pandemic has caused an extra strain on their units. This is in line with a study in Denmark showing immigrants making more frequent visits to hospitals and primary care units than the rest of the population (H. W. Frederiksen & Nørredam, 2013; Karlsdóttir et al., 2018). Even though the reasons behind this can be multiple, it can indicate that the residents in Rinkeby and Rosengård have trust in the district health-care centres that possess, among other things, language competencies.

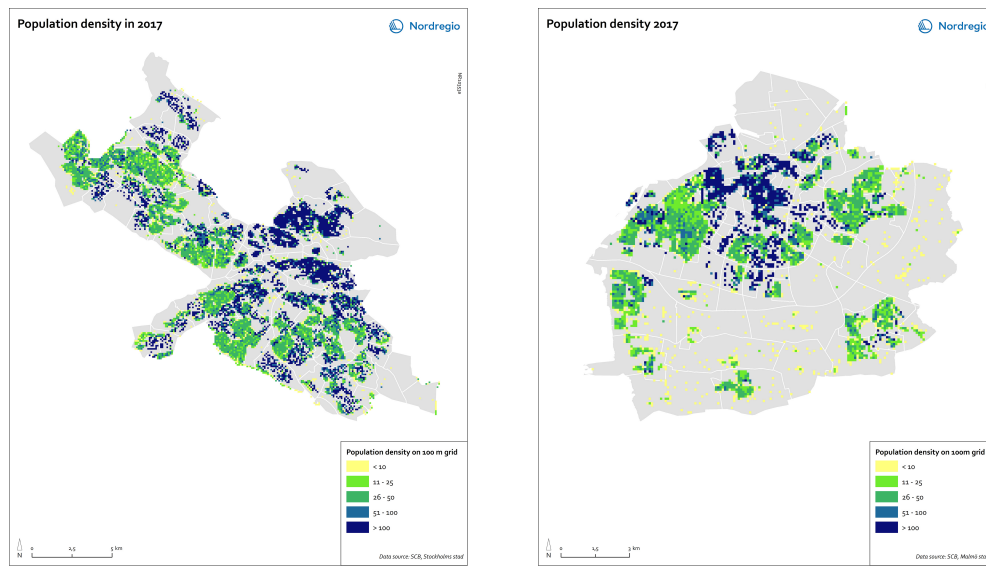
To meet the increased pressure on the health-care centre in Rosengård, telephone service in different languages was introduced. Both in Rosengård and Rinkeby, the health-care centres opened special receptions for patients with Covid-19 symptoms to meet their needs. An aspect brought up from the health-care centre in Rosengård was that more cooperation and systematic exchange of experiences between health-care providers would have been helpful to deal with the situation they faced.

'Keep a distance from other people'

Perhaps the most central recommendation throughout the pandemic has been to keep a distance from others wherever possible. This has been more difficult in cities in general and is further challenged by factors such as population density and overcrowding (Florida and Mellander, 2020; OECD, 2020). Maps 26 and 27 show the number of people per 100 m grid in 2017 in Stockholm and Malmö, respectively, clearly stating that both districts are dense. As a suburban district, the population density in Rinkeby-Kista is higher than in the neighbouring districts and comparable with the districts in the inner city of Stockholm Municipality.

Rosengård, neighbouring the former city district Centrum, is located centrally in Malmö and has a population density similar to the districts in the inner city.

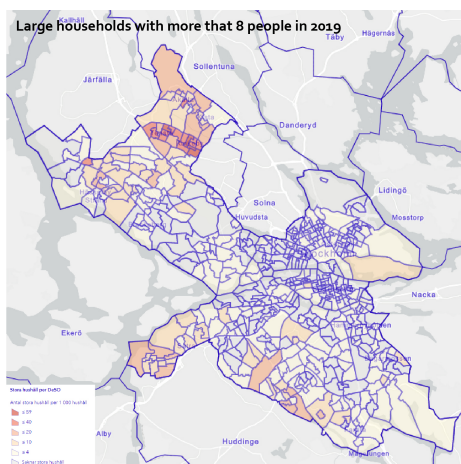
From the interviews, it was found that the number of people in the sub-district stores and services did not decrease so much during the pandemic. The stores were noticed to be comparatively crowded, at least concerning the situation, as were squares and some public places, which can be explained by the dense population in the area. Here, socio-economic conditions arguably play a role, making it hard for people with lower economy to be able to, for example, order food online. People still need to get out to buy necessities, and not everyone has other choices than to go to the nearby stores.



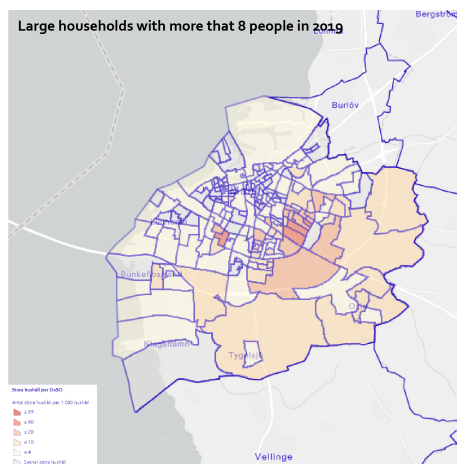
Map 26: Population density in 2017 in Stockholm. The more bluish the colour, the more people live in the grid. *Source: SCB*

Map 27: Population density in 2017 in Malmö. The more bluish the colour, the more people live in the grid. *Source: SCB*

The housing conditions in Rinkeby-Kista and Rosengård differ significantly from the districts in the inner city, as presented in Maps 28 and 29, respectively. The maps show the number of large households (household with more than eight people) per 1,000 households on demographic statistical area (DeSO) level in 2019 in the two municipalities. Both Rinkeby-Kista and Rosengård stand out in the maps, showing that people in these two districts tend to live in larger households than people in other districts in these two municipalities.



Map 28: Large households with more than eight people in 2019 in Stockholm. The darker the colour, the larger the households per 1,000 households. *Source: SCB*



Map 29: Large households with more than eight people in 2019 in Malmö. The darker the colour is, the larger the households per 1,000 households. *Source: SCB*

Urban structure and overcrowded apartments can make it harder for many residents in Rinkeby-Kista and Rosengård to follow the Public Health Authorities' recommendation. A relatively high share lives in a cramped condition in these neighbourhoods. However, it is hard to get an accurate picture of the situation for various reasons. The association of real estate owners in Rinkeby does not know the number of people living in their rental apartments. Rules on confidentiality prevent the social service from verifying a secondary lease contract before providing housing support. This mode reinforces inaccurate registration, and neither real estate owners nor authorities seem to have any other way to ensure proper registration.

Housing shortage contributes to overcrowding. It is hard to get an apartment in Stockholm on the so-called primary tenancy. The housing queue in Stockholm in 2020 was nine years on average (Bostadsförmedlingen, n.d.). "As it is now, people cannot get an apartment in the manner expected, by waiting in a housing queue, because no one leaves their apartments. People rent the apartments on the black market instead of losing it", says Ulf Malm, from the Real Estate Owners in Järva. He adds that the black rental market, with higher prices, creates even more significant overcrowding, which Lorentzen et al. (2020) and various interviewees in this study testify as being extensive. The situation in Malmö is broadly similar to Stockholm. However, the queuing time for primary tenancy in Malmö is a bit more favourable than in Stockholm, with a three-year average waiting time. Still, there is a problem with overcrowding. MKB Fastighets AB, the largest real estate company in Malmö, has information that indicates that 28% of the population lives in overcrowded⁶ apartments in Herrgårdens (north), where the situation is the worst.

There are also examples where people prefer living together despite exceeding the standards of overcrowding. However, voluntary or not, it is hard to isolate oneself in a cramped household if someone shows symptoms related to Covid-19. Many recommendations focus on the home to avoid infections but not how to go about in overcrowded apartments, at least not at the beginning of the pandemic. "There are no apartments available. Very many live together, and then there is no possibility of isolating oneself or one of the family members. That does not work in Rinkeby" (Interview: 4). An attempt was made to manage the overcrowding in Stockholm by offering 'evakueringsboende' or evacuation accommodation. Rinkeby was the first place where this was introduced following advice from the civil society. The solution was directed towards

6. Overcrowding based on norm 2 that includes a maximum of two residents per room. In addition, there should be a kitchen and a living room.

people living in a 'risk household', that is, if someone in the home was assessed as being in a Covid-19 risk group. However, the effort to counteract the overcrowding was not successful, and only 15–20 persons took advantage of this possibility. Some blame the poor utilisation on the system's complexity and inaccessibility, which assumes that the user has certain resources. One month's stay cost 5,000 SEK, which was stated to be too expensive for most residents even though it was possible to apply for financial support afterwards. Also touched on was that people were hesitant to withstand all social contact with families during the stay. At least this experience prevented authorities in Malmö from trying the same arrangement.

Another aspect that could have been helpful regarding the overcrowding is if tests would have been available for everyone with the slightest symptoms, regardless of whether they were due to coronavirus. Trying to isolate oneself if necessary under challenging circumstances without knowing whether one is infected is even more complicated. Only those who went to the hospital due to symptoms during the first wave were tested, leaving many in uncertainty. It had to be assumed that everyone with the slightest symptoms had Covid-19.

'Stay home if you have symptoms'

Another factor that may influence how likely it is that a person will 'work from home if they can' or 'stay home if they have symptoms' is job security. In Sweden, 760,000 employees have time-limited contracts, and 300,000 persons are self-employed (Odeberg, 2020). Out of those with time-limited employment, 50% work on contracts called 'allmän visstid'.⁷ 'Allmän visstid' is an unsecured condition since the contracts can be very short (from one hour) and uncertain if they will be extended. This type of employment gives the employer a flexible position, enabling them to employ on-demand without fulfilling the basic principles of employment protection (Odeberg, 2020), while the employee lacks security. If an employee has a booked schedule only for a week ahead, the employee will be compensated by the social security system for being sick for that week only.

Time-limited contracts and part-time contracts are more than twice as common among workers in the health-care and education sector as in the labour market in general. Among the workers in the health-care sector, including assistant nurses, care assistants, and care keepers (undersköterskor, vårdbiträden och skötare), 30% work on 'allmän visstid'. Among the education sector workers, including nannies, workers in after-school centres, and student assistants (barnskötare, fritidsledare och elevassistenter), 40% work on allmän visstid contracts (Odeberg, 2020). These insecure and short contracts can also lead to stress. If the employer's expectations are not fulfilled, the employer might not extend the contract.

The concept 'gig economy' is used for services carried out on a day-to-day basis by daily wage earners instead of employees with secure contracts (Finnveden, 2020). This form of work is more common among men who are young and from a foreign background. It is also more common in bigger cities in Sweden, especially in Stockholm (Forte, 2020). The union for transport workers reported, for example, bicycle couriers to be a vulnerable group during the pandemic, being part-time workers with deficient possibilities to get reimbursed for being on sick leave (Green, 2020). These contracts, often three months or shorter, stress the couriers to keep performing even when sick (Green, 2020). In Sweden, salaries are first and foremost regulated through collective agreements, but that applies to very few working in the gig economy (Forte, 2020). This means that most do not have unemployment rights, sick-leave compensation, holiday pay, or parental leave (Forte, 2020). On top of this, individuals that work illegally in Sweden do not benefit from any security at all connected to their work, meaning that they do not get any sick compensation from the employer nor unemployment insurance (Skatteverket, n.d.). This was of crucial importance to many persons during the pandemic.

It is difficult to get statistics about how many persons in a district have jobs that exclude them from employment rights, such a sick compensation or unemployment benefits. However, since

7. Other types of time-limited contacts could be, for example, as a substitute.

the share of foreign-born in Rinkeby and Herrgård is above 90% – an over-represented group in the gig economy – it is likely that some are engaged in this form of employment. This adds another layer to insecure conditions and limits the possibility of following the recommendation to remain at home, especially with mild symptoms. Furthermore, an insecure labour market position can discourage people from claiming their rights. This was highlighted in an interview with a health-care professional referring to patients showing text messages from their bosses, pushing them to come back to work, although not feeling well. People felt pressure to go back to work, particularly those working in elderly care or with hourly contracts, making people feel they might lose their job if they do not "take one for the team" (Interview: 4). This behaviour of employers can possibly be traced to a sudden strain when many employees had to stay home from work for more extended periods.

"In the best of worlds, you receive payment when you need to stay at home, but that requires working in the part of the labour market that offers that", said one interviewee (Interview: 5). This discussion resurfaced in the study pointed out that it does not matter if authorities ask people to stay home with the slightest symptoms, "there are still people who need to get to work and might not get any compensation if staying at home" (Interview: 1). Also pointed out was that information about the comprehensive safety net (skyddsnät), such as retrieving unemployment benefits (A-kassa) if losing one's job, and the temporary abolishment of the qualifying day (karensdag) when being sick, which was aimed to facilitate for people to follow recommendations, "did not reach Järva" (Interview: 1). It is also worth noting that many things can be ongoing in people's lives simultaneously. As the Järva district director stated: "If you face many challenges in life, it is harder to follow the recommendations, and it is a challenge for many households, no matter how much information one receives".

'Work from home if you can'

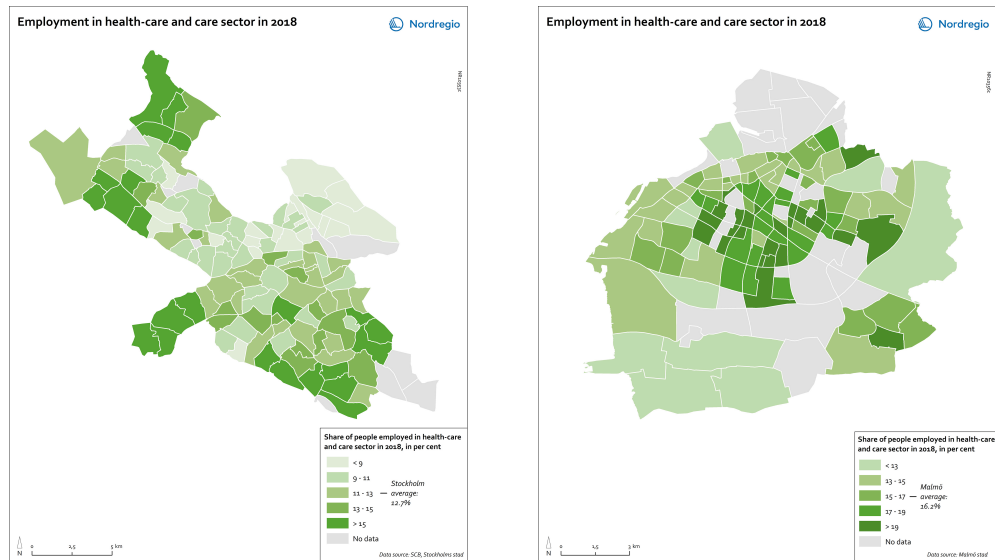
One important recommendation has been to work from home when possible. This recommendation reduces social contact at the workplace and eliminates the use of public transport. Working from home is, however, not possible in all cases. Research has shown that individuals in occupations that require a presence at the workplace of more than 50% of the time hold a higher risk of being in Covid-19 inpatient care (Bartelink et al., 2020). The risk is even higher for persons within the health-care sector (Bartelink et al., 2020). Table 3 demonstrates the relative risk for selected occupations based on a report by the Swedish Public Health Authority (2020). Taxi drivers, pizza bakers, and bus and tram drivers were found to be at the highest risk (Folkhälsomyndigheten, 2020d).⁸ Other studies have shown that while bus and taxi drivers have a higher risk of mortality, this effect is mediated by other individual factors (Billingsley et al., 2020).

Occupation	Number of cases/number of persons employed in the occupation in Swedish population	Median age when diagnosed	Relative risk
Taxi drivers	83 / 12,475	53	4.8
Pizza baker	34 / 5,521	49	4.5
Buss and tram driver	140 / 23,319	56	4.3
Interpreter	16 / 4,033	58	2.9

Table 3: The relative risk for different occupations of being infected by Covid-19. The table is adapted and simplified from Folkhälsomyndigheten (2020b).

8. For statistical reasons and due to health-workers being more tested than the general population, these were excluded in the analysis (Folkhälsomyndigheten, 2020:d).

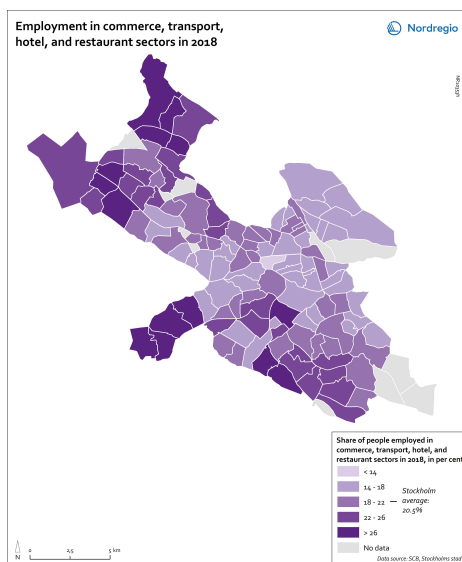
Working in different occupations entails varied exposure to the risk of being infected by Covid-19. In Maps 30–33, it is apparent that a relatively high share of the population in Rinkeby and Herrgårdén works in the sectors that have the most risk of infection, inpatient care, and a higher mortality rate (bus and taxi drivers). In both Rinkeby (Map 30) and Herrgårdén (Map 31), a fifth of the workforce (20.4% and 21.3%, respectively) work in the health-care sector, while the average in Stockholm was 12.7% and in Malmö 16.2% in 2018. Employees in the health-care sector were at higher risk of needing inpatient care, according to Bartelink et al. (2020).



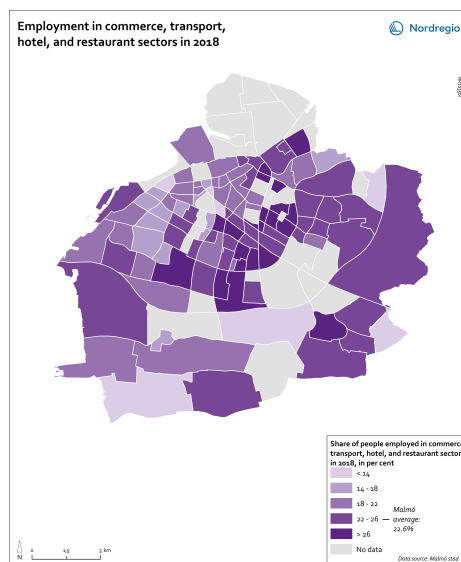
Map 30: Employment in health-care and care sector in 2018 in Stockholm. The darker the colour, the higher the share. *Source: SCB and Stockholms stad*

Map 31: Employment in health-care and care sector in 2018 in Malmö. The darker the colour, the higher the share. *Source: Malmö Stad*

Transport (bus, tram, and taxi drivers) and restaurant workers were included in the occupational sectors at higher risk of infection identified by Folkhälsomyndigheten (2020d). Maps 32 and 33, respectively, display the share of labour force employed in commerce, transport, hotel, and restaurant in 2018 in Stockholm and Malmö. Rinkeby was among the sub-districts in the capital with the highest share of the labour force employed in these sectors, with 30.8%, while the city average was 20.5%, in 2018. The percentage for Herrgårdén was 29.8%, the highest of all the sub-districts in Malmö. The average for Malmö as a whole was 22.6%. It is clear that the workforce in Rinkeby and Herrgårdén, to a relatively great extent, works in occupations that have been at risk in different ways during the pandemic.



Map 32: Employment in commerce, transport, hotel, and restaurant sectors in 2018 in Stockholm.
Source: SCB and Stockholms Stad



Map 33: Employment in commerce, transport, hotel, and restaurant sectors in 2018 in Malmö.
Source: Malmö Stad

Various interviewees confirmed that many in the neighbourhoods have limited possibilities to work from home. Also, many hold a job in crucial societal professions such as social and health care, elderly care, or service and transport. As one of the interviewees put it: "almost all bus drivers are from here. You always recognize them" (Interview: 1). Another example of increased exposure concerning one's work is taxi drivers picking up Covid-19 tests from private houses when testing became more accessible. The taxi drivers arguably faced excess vulnerability, meeting many infected people when delivering and picking up the tests. "Many taxi drivers live in Järva, and the question is how good training they received before performing the job" (Interview: 1). As mentioned above, some ideas that emerged in the interviews were also related to the general uncertainty among residents about where or by whom they had got infected and that taxi drivers driving Alp travellers from the airport might have been one source of transmission early in the pandemic.

Another perspective brought up in both cities was the high unemployment in Rinkeby-Kista and Rosengård, a factor that has the potential to minimise exposure to social contact. Both case study districts have a considerably lower employment rate than the municipal average, as listed in Table 4. The indicator measures the share of gainfully employed (förvärvsarbetande)⁹ among the population aged 20–64 years. In 2018, the share of gainfully employed in Rinkeby-Kista was 21% lower than the Stockholm average, and the share of gainfully employed in Rosengård was 35% lower than the Malmö average. Less than half of the residents aged 20–64 years in Rosengård were gainfully employed in 2018. However, it only takes one in a crowded household to be exposed for Covid-19 for the other members to be at risk as well.

9. Everyone who pays salary, fees, other remuneration, or benefits that constitute taxable income from employment must report control information. The definition is the same as in the Labor Force Survey (LFS): for wage earners, one must have worked at least one hour a week during November. For self-employed persons, income from active business activities during the year is counted instead. Even those who are temporarily absent from employment during the measurement period, for example, polyglandular autoimmune syndrome, are considered gainfully employed. People with very low incomes are not counted as gainfully employed ('Registerbaserad arbetsmarknadsstatistik').

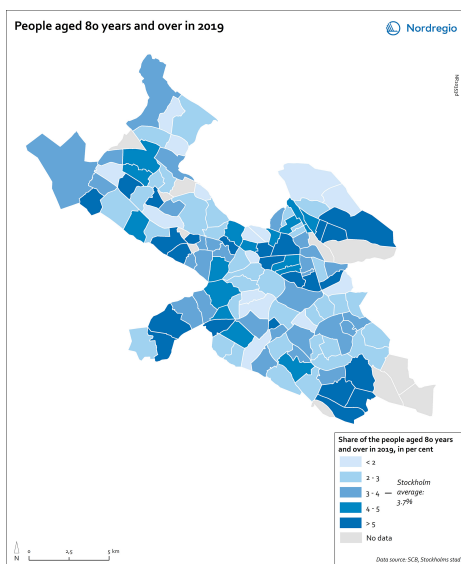
Municipality	Municipal average	Case study district
Stockholm	79.8%	63.2% (Rinkeby-Kista)
Malmö	68%	44% (Rosengård)

Table 4: The share of gainfully employed (förvärvsarbetande) in the population aged 20–64 years in 2018. *Source: Stockholms stad and Malmö stad*

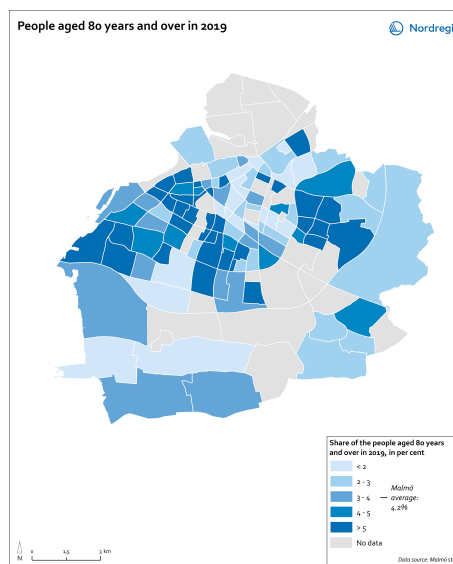
'Limit contact with persons aged 70 years and above'

The corona pandemic has had different effects in different age groups: 99% of those who died due to Covid-19 in the spring were over 50 years old (Bartelink et al., 2020). People over 80 years old are among the most vulnerable group, and approximately 15% of those infected will die (Vally, n.d.). The share of people aged 80 years and over by district in Stockholm and Malmö is shown in Maps 34 and 35. Rinkeby-Kista has a relatively low share (2.3%), while the share in Stockholm Municipality is 3.7%. Östermalm has the highest share of the old population in 2019 (5%). Like Rinkeby-Kista, Rosengård has 2.3% of people aged 80 years and over. In the sub-district, Herrgården, it is only 1.0%. The average in Malmö City was 4.2%, and 7.6% in Hyllie, with the highest share of the older populations.

Although many indicators related to Covid-19 match the characteristics of Rinkeby-Kista and Rosengård, the age composition is favourable, as these statistics show. The high share of the population being of foreign background can entail that many families' oldest generations live in the country of origin. "We don't have the elderly that can be seen in other parts of the city, the 80–90-year-old. Our patients often return to their home countries when they get older" (Interview 7), an interviewee from the health-care centre in Rosengård explained. However, multigenerational households are possibly more common than in many other places, which might increase exposure to the older members of the family.



Map 34: People aged 80 years and over in 2019 in Stockholm. The darker the colour, the higher the share. *Source: SCB and Stockholms Stad*



Map 35: People aged 80 years and over in 2019 in Malmö. The darker the colour, the higher the share. *Source: Malmö Stad*

'Avoid public transport'

Public transport is generally a source of virus transmission (Almlöf et al., 2020). While the Covid-19 pandemic has changed travel behaviour and reduced the use of the public transport system throughout the world, this reduction has not necessarily been uniform (Almlöf et al., 2020). In Sweden, public transport ridership decreased by 70% nationwide by April 2020, but still many citizens relied on public transport as their primary or only means of transport. The variations in public transport use in Sweden during the pandemic have been attributed to socio-economic status.

Being a high-income earner in Stockholm, being above 65 years old, and being Swedish-born all increased the likelihood to stop using public transport during the pandemic. Simultaneously, people living in impoverished or rural areas continued using public transport to a much larger extent (Almlöf et al., 2020). In other words, and according to these findings, it seems like those with means stopped using public transport to a much higher degree than those with lower socio-economic status. However, another recent study contradicts this picture, showing that mobility change does not differ across areas with different socio-economic characteristics (Dahlberg et al., 2020). In any case, it is fair to expect that persons that do not own a car are more dependent on public transport.

Early in the pandemic, the public health authorities recommended people to avoid public transportation if possible. It was known that not everyone could avoid this mode of transport, but it was considered necessary that as many as possible would reduce overcrowding for those who cannot. In Sweden, the ridership decreased significantly where low socio-economic status might have played a role, according to at least one study (Almlöf et al., 2020), which receives support in the interviews.

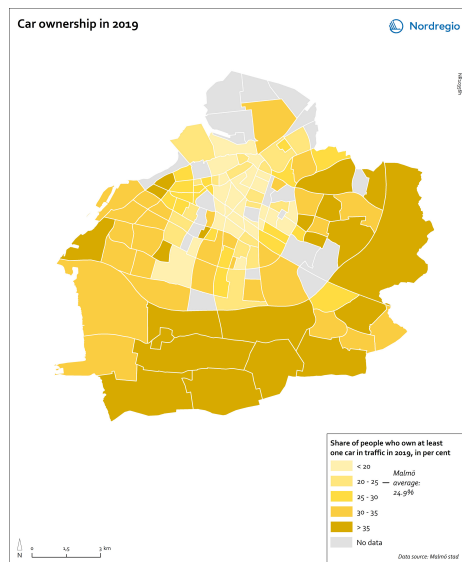
In Rinkeby, buses were congested and few have access to alternative means of transport. Stockholm Region, the responsible authority, confirms that there were many complaints about congestion made by the bus drivers¹⁰ and that they responded by increasing the frequency of buses on one of the more frequently used bus lines. Still, the perception among users was that many trips were cancelled during the period. This, together with measures to protect bus drivers by closing off the front of the bus (not in the early beginning), further pushed congestion. As shown in Maps 30–33, a large share of workers in the district holds front-line jobs, which cannot be worked from home. Also, a part of the workforce has to commute long ways to get to their workplace, forcing those travelling with public transport to sit in enclosed spaces for long periods. Slow repairs were also noticed in the subway station in Rinkeby, such as a broken escalator and an elevator, further pressing congestion. One of the interviewees complained about cramped buses to the public transport provider but got the advice to avoid travelling during rush hours, which is not an option for everyone. In Malmö, the situation has been similar in some ways, with many travelling in buses during rush hours. However, some measures were implemented in the autumn to limit the number of people on each bus, and mask use became more common.

Biking can be an alternative to public transport, for example, when commuting to work, but this depends partly on distances – where your workplace is located and where you live – season and weather, and habits regarding bike use in general. Arguably, one's financial situation also plays a part. In two of the interviews, it was stated that the custom to use a bike as a means of transport in Rinkeby is not so widespread. The reasons discussed are a mix of lack of resources (not owning a bike), lack of experience of riding a bike, and lack of custom to use bikes as a means of transport. Folkets Hus attempted to encourage cycling in summer 2020 by erecting a bicycle workshop without much success. Even though introducing biking for the residents might be a valid measure, it will not happen overnight.

Another way to avoid public transport is using a private car. It is, however, not available for all. Although car ownership statistics are not available at the district level in Stockholm, it can be inferred that the situation does not differ significantly between Rosengård and Rinkeby. The neighbourhoods have similar statistics or trends regarding many other factors under

10. As the most, 379 cases of congestion were reported by bus drivers. This was during the autumn 2020. Congestion in this regard concerns when more than 50% of the seats were occupied. Source: Region Stockholm, Personal communication 20210403.

investigation, and the interviewees in Rinkeby verify that car ownership is not the norm in the district. The status of car ownership in Malmö is visualised in Map 36. It shows the share of people who have at least one car in traffic in 2019, and might work as an indicator of the possibility to avoid public transport. In general, people living in the inner city own fewer cars than those residing in a suburb. Rosengård stands out as district with the lowest share of inhabitants owning at least one car (15.8%). The share in Herrgård is 11.0% in 2019. On average, 24.9% of the people living in Malmö own at least one car.



Map 36: Car ownership in 2019 in Malmö.
The darker the colour, the higher the share.
Source: Malmö Stad

Further considerations: Access to information

In addition to the indicators presented above and set out in maps, access to information has been cumbersome in the discussion. A foreign background has been connected to higher infection rates in different studies (OECD, 2020; Statens Serum Institut, 2020c), where lack of language knowledge, for example, in Denmark, has been specified as accountable (European Commission, 2020). The studies mention that people do not understand health authorities' recommendations well enough on how to reduce the risk of infection. Although language translation and dissemination of information or lack thereof are recognised as contributing factors, they have been rejected because the explanation cannot be that simple. Not least by members of the communities who pointed out as having more difficulties in digesting the information from the authorities (Kriskommittén, 2020).

The association of property owners in Järva received the first request to reach out to residents in Rinkeby on the evening of March 19. The police asked property owners to disseminate information to prevent infection spread to their clients. The issue was declared urgent, and the association was asked to put up posters in their building's stairwells in as many languages as possible and to send emails to residents. Posters attached to print were in different languages (Somali, Persian, English, Arabic, Spanish, Russian, Finnish, Polish, and Swedish). The posters contained messages to stay at home if you are ill, protect the elderly and those seriously ill, how to avoid getting sick, and when and where to seek medical assistance. Another poster included information on how to wash hands properly. A few days later, the information mentioned above was requested to be repeated since several patients seriously ill due to Covid-19 turned out to be

in the neighbourhoods in Järva. MKB real estate (MKB Fastighets AB) in Malmö had a similar role in their front.

The shortage of dissemination of Covid-19 information in different languages and peoples' inability to understand Swedish authorities' recommendations and follow Swedish media were prominent in the discussion after the spread of infections in Rinkeby-Kista turned out to be severe. This explanation is not consistent with the conducted interview data. The participants emphasise that, while most foreign-born in the districts follow news from their own home countries rather than Swedish news, the main message on hand hygiene, social distance, and staying at home if experiencing symptoms was similar worldwide, no matter what source of information one used. Besides, many also did receive the information from Swedish sources. "It was probably the same information everywhere, no matter what source people were using" (Interview: 4). When contacting the local health-care centres, it was apparent that most were well aware that they could have Covid-19 when they had a fever or respiratory symptoms. By contrast, the softer restrictions in Sweden compared with many other countries might have given rise to the perception that the situation was less serious in Sweden.

Some shortcomings regarding language translation and information spreading were pointed out and suggested that a more effective way could have been to involve representatives from the district and ethnic groups in the whole process — both to create the material and to plan the dissemination of information, instead of only being involved in the outreach. How words and terms are presented can make a difference, for example, in regard to what underlying disease actually involves. Learning from Stockholm that had an earlier outbreak, Malmö focused on working with different groups and channels in Rosengård, such as the Somali association and the religious communities, to better reach out to the residents and spread the information.

The district director in Rinkeby-Kista conveyed that mistrust towards authorities did once again prove to be an essential factor standing in the way of success. Covid-19 underlines that authorities must find other methods to reach out to the residents. Local authorities have been aware of the lack of trust long before the pandemic but have not succeeded in tackling the issue. "You notice that many people believe in different things, and if you, for example, are illiterate, you believe in what you hear. Many here are also from war-torn countries where the governments might have spread a lot of disinformation in general. So it is sometimes hard to get people to trust us, that there is nothing behind and that the information is meant to help them" (Interview: 11).

The civil society organisation stands, for example, closer to the residents than authorities, and the employees at Folkets Hus feel that they have the people's trust. With a less formal and more compassionate way of meeting people, they are sure that they could have complemented the formal information from authorities – coming from above. "You get tired of it. I think that can happen to anyone [...]. We have various channels and people understand in different ways. For some, it is through discussion; for others, it is social media. For some, it is about repetition" (Interview: 1). It was emphasised that different methods need to be used to raise interest, where the neighbourhood public space can play a role. "It is easier to take in the information from us when we meet out and about. It is more difficult when the message comes from the authorities that are used to criticize us. You can't read, you are illiterate, you have not integrated" (Interview: 1). The civil society did many unassigned tasks, but was unable to cover everything needed due to a lack of resources. This issue was also raised in Malmö, where the Citizen Office (Medborgarkontoret) in Rosengård was closed two years ago. A unit that is believed to have been functional during the pandemic. "We have tried to supplement and fill the gap it left, but it has been a huge loss for the neighbourhood" (Interview: 9). Emphasising that the service desk opened to replace it is not adequate and is insufficient compared with such units in other parts of Malmö.

Further considerations: Digital exclusion

Access to digital tools and skills has been and is highly relevant to keep updated on information from the public authorities—a field where it seems to be plenty of room for improvement. Different actions show that authorities are well aware that the digital system must be developed further to not be exclusive. The Nordic Council of Ministers has focused on digitalisation in recent years. A shared agreement has been signed between the Nordic ministers and the Baltic ministers to become the world's most sustainable and integrated region. The focus is on developing and using advanced digital technologies "in an ambitious, innovative, secure, and ethical manner to tackle large societal challenges, such as the green transition and pandemics" (The Nordic Council and the Nordic Council of Ministers, n.d.). The declaration says that it must be ensured that new digital technologies are socially inclusive, human-centric, and used ethically. An important part of digital inclusion is to increase equality by tackling gender gaps, skills gaps, ability gaps, and age bias.

A Norwegian study states that the dissemination of translated information to the immigrant population is complicated because finding the information requires good skills in the Norwegian language (navigating public websites), in addition to digital skills (Skogheim et al., 2020). Hence, the authors note that translated information should be as few clicks away as possible. The same study argues that also for well-integrated immigrants, it can be helpful to be able to read the information in their first language to increase the understanding of the content.

Digital access to the health-care system can work as an exclusionary factor for certain groups in society. Both the civil society actors and health-care professionals became aware that many in the neighbourhood had difficulties accessing assistance through phone and ordering Covid-19 PCR tests. Criticism is against the system that assumes everyone has the digital resources, which have become the traditional way of navigating the system in Sweden. This leaves out undocumented people, homeless people, those who do not have mobile bank ID, and individuals that for some reason do not have Wi-Fi or electronic devices needed to access the system. This also leaves out a group of people that lack trust in authorities or are dealing with mental illnesses. To counteract this, the health-care centre in Rinkeby erected an entire tent to increase accessibility, and the health-care centre in Rosengård opened special facilities, with a different entrance, in the building. In both cases, it was their initiative that stemmed from understanding their group of patients.

Special receptions were also arranged despite the regional authority's recommendations to refer to 1177, which had the task to coordinate the health care. It was up to 1177 to decide if people should stay at home or seek health care and order a corona test, but for that, a mobile bank ID was needed. "Many do not have mobile bank ID, it is not easy for everyone to use it, even though it is easy for others. It is not only the language. It costs to have a telephone, computer, and Wi-Fi at home and it affects how people seek health-care" (Interview 4). Besides, for those dealing with mental illnesses, this process may arouse worry and anxiety. In Malmö, the municipal authorities have made an extra effort to find and help homeless people in this situation by opening meeting spots in the city for them to get information and help. This was, however, only available for symptom-free individuals.

The digital barriers were also apparent when an effort was made to investigate the spread of Covid-19 in Rinkeby. Letters were sent to residents to offer antibody tests, but to participate one needed to open a web browser, use a bank ID, and book an appointment. According to the informants, this can explain poor participation. The digital barriers observed in the study also arouse concerns about how those with restricted access to digital platforms will participate in the vaccination process.

Learning from the experience in Stockholm, authorities in Malmö have tried to follow the municipality's development, demonstrating a smaller share of the population testing for Covid-19. At the same time, a higher percentage of those who got tested turned out to be positive than the average. Different factors are considered: too limited accessibility, such as difficulties involved in finding places to pick up tests, getting a symptom-free person to pick up the test for you, or not having a car. To respond to these issues and increase accessibility, the

municipality decided in December 2020 to erect a 'walk-in' reception in Rosengård, opened in March 2021 (Interview: 8). In later stages, the accessibility was increased in Stockholm, with mobile drop-in test receptions in different neighbourhoods. The pilot was tested in Rinkeby and Tensta in January and March 2021, and the units were increased from one to four, covering 15 different places in the city (Region Stockholm, 2021).

This chapter has focused on the case studies conducted in Sweden, giving a more in-depth understanding of possibilities or hindrances faced by people in deprived areas to follow the public recommendations. Several barriers have emerged, such as limited possibilities to keep distance, staying at home, working from home, avoiding public transport, and accessing information and health services. We now turn to conclusions, recommendations, and final remarks.



Photo: Johnér.se

5. Discussion and conclusions

While the Nordic countries have long been champions of equality, the Covid-19 pandemic has put a new light on societal structural injustices inherent in our societies. In Copenhagen, Oslo, Helsinki, Stockholm, and Malmö, districts with a high share of residents with an immigrant background and a low socio-economic status have tended to have high infection and mortality rates of Covid-19. The pandemic thus reveals and reminds us about the serious effects of segregation and unequal living conditions on citizens' ability to cope with and survive a pandemic. As stated earlier, this study aims to identify structural barriers involved in citizen's ability to follow recommendations from Public Health Authorities during the pandemic, especially in socio-economically vulnerable, low-income districts. Learning about these barriers – and effective measures taken to mitigate them – will help Nordic societies be better prepared for future challenges and crises.

First, our findings from the in-depth study in Rinkeby and Rosengård do not support the claims that **language barriers and lack of integration** are the reasons for the higher spread of infections among ethnic minorities. The shortage of information spreading in different languages and peoples' inability to understand the messages from Swedish authorities have been highlighted repeatedly as a serious problem. This is rejected by the interviewees, who argue that this is a much too simplified explanation of the situation. Even though some residents do not follow Swedish media daily, the risks inherent in Covid-19 and the main measures to protect oneself are similar worldwide, such as wash hands, stay home when having symptoms, and social distancing. However, the softer approach in Sweden could have caused some residents to feel that the situation was less severe in Sweden than in many other places. There are examples of inadequate translation and complicated or technical wording in certain recommendations, but this is believed to be inferior compared with the structural barriers involved. Skogheim et al. (2020) who investigated dissemination of information in Oslo found that using already established channels in districts with a high share of immigrant population and working with 'ambassadors' was a successful way to share information.

The structural barriers appearing more strongly in the Nordic city districts with high immigrant population demonstrated in the quantitative part of the study and came through in the interviews will be further discussed below – in relation to each key recommendation from the Health Authorities.

Structural barriers against public recommendations

Stay home if you are feeling sick. Work from home if you can.

1. Overcrowding appears as an obvious barrier against residents' ability to follow the public recommendation to reduce the virus's spread and avoid infection of Covid-19. The home has been central in this context: *Stay home if you are feeling sick. Work from home if you can.* These recommendations are presented as essential to minimise the risk of getting infected or protect others. The privilege involved in these recommendations is not available for all. Those living in cramped housing might not have the ability to work from home, even if they hold a job that can be performed from a distance. Also, it is hard to isolate if sick in a cramped household and prevent infecting other household members.

Overcrowding is a well-known problem in many socio-economically deprived areas. However, it is an unresolved problem where the real-estate owners have limited opportunities to monitor the number of people living in their apartments. The problem of overcrowding is perhaps not an issue that will be resolved in times of crisis but must be recognised as a barrier during infectious pandemics like Covid-19. Clearly, it is an unresolved structural problem that needs to be addressed.

In theory, 'evakueringsboende' (evacuation housing) could be powerful aid by the public authorities for overcrowded households. It was attempted in Rinkeby but proved unsuccessful, possibly due to the required bureaucracy and the assumption that the user has certain resources. One month's stay cost 5,000 SEK, and the offered reimbursement was retroactive. Residents were also hesitant to avoid all social contact with families during the stay. The experience from Rinkeby prevented authorities in Malmö from trying the same arrangement. Similar solution also seems to have failed in Norway, according to Skogheim et al. (2020), who state that "quarantine hotels seem a well-preserved secret" since local organisations interviewed did not know about this possibility.

Although it is understandable that a municipality cannot easily and suddenly arrange housing, it should also be viewed in the light that there is a lot at stake. Such an effort has the potential to equalise people's status in socio-economically disadvantaged areas, where many work in crucial occupations that keep the society running during the pandemic.

Solutions for more accurate registration and monitoring of tenants are needed to be implemented to understand how extensive the problem of overcrowding is, even though it is a difficult task. Then actions are needed to meet the problem without leaving those in the most disadvantaged position out in the cold.

2. Some jobs cannot be performed from home – and not in the gig economy: These recommendations work best for 'white-collar' jobs, or reversely do not apply to many jobs, for example, health care, elderly care, and the service sector. They also do not work for all types of contracts. Evidence implies that **some occupations are more exposed** to Covid-19 and even linked to higher mortality rates, like transport (Billingsley et al., 2020; Folkhälsomyndigheten, 2020d). In all the Nordic cities investigated in this study, more disadvantaged urban areas, with a high share of foreign-born population, also have a relatively high share of the workforce in exposed occupations, such as health care, services, and transport. Recommendations such as *Work from home if you can or avoid using public transport* do not work for employees in these occupations. Furthermore, the nature of these jobs involves many social contacts that further increases the exposure.

Efforts to facilitate people to *stay home with the slightest symptoms* do not cover all, and perhaps less who live in deprived areas. These include measures involved in abolishing sick-day deduction remaining at home for 14 days without a medical certificate, and abolishing a medical

certificate from day eight when caring for a sick child. However, to be eligible for these, one needs to work in the part of labour market that offers these rights. That leaves out many working on an hourly basis, gig workers, and others in an insecure working situation. Even though we do not have an accurate picture of how many people in these districts have jobs that exclude them from employment rights, such as sick compensation or unemployment benefits, according to Forte (2020), **people who are foreign-born are over-represented in the gig economy** and our data shows that residents in Rinkeby and Rosengård are overrepresented in the types of occupations that have comparably high share of "visstidsanställning", as in the health care sector.

Staying home with symptoms, according to recommendations, was not always well received from the employers' side, who even put pressure on their employees to show up for work. This was highlighted in an interview with a health-care professional referring to patients showing text messages from their bosses, pushing them to come back to work, when not feeling well. In an insecure work situation, or where the fear of losing one's job is imminent, such pressure can prevent people from staying home.

Avoid public transport, especially during rush hours

3. Public transport is a necessity: The recommendation to *avoid public transport, especially during rush hours*, is not feasible for everyone. To avoid public transportation, people need access to specific resources such as cars, bikes, or the opportunity to avoid travelling by *working from home*. **Car ownership is less common** in studied districts than in many other districts, and biking is not a standard transport mode. Public health authorities have also emphasised that those who can avoid it should do so for the sake of those who cannot. However, many interviewees described crowded buses and even noticed cancelled trips instead of extra resources to meet these neighbourhoods' needs. This was especially noticed in Rinkeby.

4. The digital barrier: Last but not least, according to our findings, **digital platforms**, and systems used to manage the situation around Covid-19, have proven to be an excluding factor for some. The system assumes that everyone has a mobile bank ID, access to digital devices, digital competencies, and an internet connection, which is not the case. Undocumented people and homeless people also stand outside the system. Those who have access can also face difficulties navigating the digital interface for different reasons. The health-care centres in Rinkeby and Rosengård, where the staff knows its clients, reacted to this by opening special reception, despite general instruction on directing people first to 1177. This study found evidence of effective locally-driven initiatives. It is worth noting, however, that these were not established according to any broader strategy or guidelines, and, as such, may not exist in other districts with similar characteristics. In later stages, the accessibility was increased, with mobile drop-in test receptions in different neighbourhoods in Stockholm and with a drop-in test reception in Rosengård.

Concluding remarks

In all the Nordic cities included in this study, higher spread of Covid-19 among the population with foreign background has been noted. The maps also visualise how socio-economic factors, which can be interpreted as barriers to avoid getting infected, also accumulate in the same districts. The in-depth studies in Sweden, Stockholm and Malmö, give a deeper understanding of the barriers involved that have been listed above. We believe that the findings can be attributed to some extent to the other cities that have districts with similar characteristics. These districts might need special attention during crisis like the corona pandemic due to the structural barriers many of the residents' face.

We agree with many of our interviewees that even though everyone has responsibility, a greater responsibility to follow the public recommendation is on social groups with more resources. That is to create more space for those who face challenges living up to these recommendations. It is challenging for most to change their lives according to the recommendation. However, it is even more so for those already facing multiple challenges in their daily lives. The overall picture is that

most people want to adapt and protect themselves and others, but some face more structural barriers. We can perhaps even talk of a 'white-collar quarantine', in which the wealthy can more easily work from home, avoid public transport, afford to stay at home when sick, and live in spacious households. Simultaneously, low-income groups are left on the front line, in important occupations, and struggling to isolate the sick in large and cramped households, leaving them excessively vulnerable to infection.

These inequalities are likely to be further exaggerated post-pandemic. First, the unprecedented unemployment rate caused by the pandemic is likely to further accelerate inequalities, as is the lack of competition due to market consolidation. Blundell et al. (2020) have also highlighted how the rise of digital work poses an obvious risk that any benefits that can arise from this situation can largely bypass low-income groups given their occupation tends to be less amenable to remote working.

The civil society actors have played an important role in the case study areas by disseminating information and providing support to the residents' despite limited resources. Their potentials to bridge the gap between the residents and authorities, with their knowledge and abilities to meet people, could have been utilised earlier and better to meet different groups in society. Authorities' recommendations have, however, been much focused on 'white-collar' jobs, and a learning from this could be to take different groups in society into account when creating recommendations.

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Interview list

STOCKHOLM (RINKEBY)

Interview	Name	Workplace	Titel	Date
1	Fardosa Omar, Helena Hede	Folkets hus, Rinkeby	Project Manager / Activity Coordinator & Project Manager	2020-12-09 and 2021-01-19
2	Ulf Malm	Fastighetsägarna, Järva	CEO	2020-12-10
3	Åsa Eriksson	Yalla-trappan, Rinkeby	Operation manager	2020-12-10
4	Lisa George-Svahn	Rinkeby Vårdcentral	Specialist in infectious diseases and infection control manager	2021-01-18
5	Susanne Leinsköld, Per Granhällen	Stadsdelsförvaltning, Rinkeby-Kista	District director / Manager Security, crime prevention	2021-01-12

MALMÖ (ROSENGÅRD)

Interview	Name	Workplace	Titel	Date
6	Anna Rydén	Yalla-trappan, Rosengård	Project manager	2021-01-25
7	Faria Karim	Rosengårdskliniken, Rosengård	District nurse	2021-02-08
8	Lina Ringberg	Malmö Stad	Civil contingency planner	2021-02-19
9	Muna Mohamud	Folkets Hus, Rosengård	Activity director	2021-02-22
10	Mats Nilsson, Patrik Jönsson	MKB Fastighets AB, Malmö	Head of administration / property manager	2021-02-24
11	Malin Dock	Kryddgårdens vårdcentral, Rosengård	Nurse	2021-03-04

About this publication

Who is left behind? The impact of place on the possibility to follow Covid-19 restrictions

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Nordic co-operation

Nordic co-operation is one of the world's most extensive forms of regional collaboration, involving Denmark, Finland, Iceland, Norway, Sweden, the Faroe Islands, Greenland, and Åland.

Nordic co-operation has firm traditions in politics, the economy, and culture. It plays an important role in European and international collaboration, and aims at creating a strong Nordic community in a strong Europe.

Nordic co-operation seeks to safeguard Nordic and regional interests and principles in the global community. Shared Nordic values help the region solidify its position as one of the world's most innovative and competitive.

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