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CAN'T STAY AWAY: WHAT HAPPENS TO SOCIAL DISTANCING AND VACCINATION RATES WHEN A FAR-RIGHT PARTY WINS SEATS ON YOUR LOCAL COUNCIL? CASE STUDY OF THE 2021 FINNISH MUNICIPALITY ELECTION

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Abstract: With Covid-19 as the backdrop, this paper takes advantage of a timely municipal election in Finland, where the Finn's party stole council seats from almost every other party in almost every municipality to study questions such as: Is there a link between votes for a populist party and social distancing or vaccination take-up? Will there be a post election difference in social distancing and vaccination rates in regions in which the Finn's party suddenly holds more seats in municipal councils, endowed with the power to influence Covid-19 restrictions and the organisations of vaccinations? Using Google mobility data, the paper finds that social distancing tended to be higher in regions with more Finn's party voters, even when controlling for demographic and time-specific variables. On the other hand, Finn's voters were associated with lower vaccination rates. Finally, a differences-in-differences specification finds that while there was no effect of mobility after the election in regions where Finn's gained more seats, there was a sizable and statistically significant difference in vaccination rates for every extra percent seat the party gained. Assuming causation, a back of the envelope calculation suggests that if there was no election there would have been 2,000 more vaccinations between June and December 2021.

Keywords: Social distancing, populism, vaccinations, Finland, differences-in-differences

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1 Introduction

Until vaccinations, social distancing measures were the main way to mitigate against the spread of Covid-19. In fact, many researchers (Qian and Jiang 2020, Leynard and Lo 2020) considered it the most effective non-pharmaceutical method to limit the spread of Covid-19, to be bolstered by other measures such as mask wearing, testing and contact tracing. Social distancing simply implies keeping a psychical distance away from others in order to prevent the spread of an airborne disease and a broad variety of measures fall under social distancing such as total isolation, cancellation of public events, working from home, or keeping 1.5 meters away from people in indoor spaces. Adherence to social distancing can be achieved through regulation, economic incentives, or self-adherence where people choose to adhere to protect oneself or for altruistic reasons, to protect others.

The demographic, social, and economical drivers behind the who, where, and why of social distancing has been a focal point of research and there has been a growing body of literature showing that partisanship in the United States is a significant factor explaining differences in compliance to mitigation efforts (Allcott et al. 2020; Barrios and Hochberg 2020; Gollwitzer et al. 2020; Kushner Gadarian et al. 2020: 1; Painter and Qiu 2020). Furthermore, Ansell et al (2021) explains the divide in social distancing compliance as a the divide between populists and non-populists with empirical evidence from Sweden, Denmark and the United Kingdom, extending it past the Republican and Democratic dichotomy. Similarly, this thesis will study support for a far-right party, the Finns party, in Finland but has a unique identification strategy that allows us to solve some of the issues of endogeneity, frequent and random occurrences of policy changes in the start of the pandemic, and study a new question.

Since around the world many far-right parties lost support in the polls or in Europe have been unaffected by Covid-19 (Wondreys and Mudde 2022) and due to timing of elections, there are not any studies on how far right parties gaining prominence and political power in your region effects compliance to social distancing and vaccinations. In contrast, Finland had a municipal election on June 13, 2021 where the Finns party, a far-right party, gained 5.3% voter share nationally and gained up to 13% of votes in some municipalities. Given the evidence supporting the strong link between populism and social distancing, one can question whether there is any cause for concern about far-right party gaining legislative powers over Covid-19 mitigation efforts and vaccinations resulting in a dead weigh loss for society. Might it change how locals respond to Covid-19 orders, perhaps undermining the credibility of the orders or perhaps locals will be converted into non compliers? Although, the mechanisms for the effect will be explained further, it is important to note that undermining the credibility of the orders might induce people to social distance more or less depending on their belief sets. For example, a person might social distance less as they would find the orders non-credible or more if they perceive that the chance of

getting ill will be higher since they find the order non-credible. Furthermore, the increase in prominence of the Finn's party, might give them a platform to amplify their views and convert more people into non-compliers.

The Finnish municipal elections provide a perfect case study for this question since municipalities are granted a wide range of powers including overseeing the practical organisation of social services, education, and health care services, as well as participating in a joint municipality body that decides Covid-19 restrictions and organizes vaccinations. Another objective of this paper is to provide evidence for how local politics can affect people's behavior. As suggested by the adage "all politics is local" (a quote attributed first to Byron Price), locals might care the most about the mundane decisions made in local politics because it affects their daily lives, all the way to their health, the most.

This thesis will use a difference-in-differences design to investigate whether a far-right party gaining prominence in local council will affect locals' compliance to social distancing and vaccinations. In specific, whether there was a difference in compliance to social distancing and vaccination take-up before and after the election in regions where the Finns party gained more seats on municipal council than in others will be tested. There is a potential real-world application of this thesis since the findings can be used by policymakers that wish to understand the drivers of social distancing and determine where there are likely more non compliers. The introduction of this thesis will proceed by covering background about these elections and the Finns party before discussing the possible channels for the effect in the framework of a literature review.

1.1 Background

Populism is an ideology that can cross the political spectrum. The existence of left-wing populism as well as right-wing populism illustrates that there is no specific set of economic and political policies that pertain to populism. Instead, populism is characterized by Cas Mudde (2017) as an ideology that pins two groups of people against each other, a "pure people" on one side and "a corrupt elite" on the other. The Finn's party's brand of populism is cultural and social far-right populism that combines ethno-nationalism with populism. In the rhetoric of Cas Mudde, liberal institutions that favor pluralism and rights for minorities are portrayed as the "corrupt elite" that give special treatment, such as positive discrimination which the Finns party hopes to eliminate as an official party stance, to all types of minorities and immigrants. Thereby, liberal institutions are thought to disadvantage the "pure people", in this case everyday ethnic Finns.

The Finn's party is Finland's contribution to the what is sometimes categorized by some scholars (Mudde 2017) as European Radical Right Populist Parties (RRPP). RRPPs are the topic of lively scholarly discussions which are largely out of the scope

of this thesis. Some of those parties have been *in power*, such as in Austria (2000 - 2005, 2017-) and in Italy. By comparison, the Finn's party is more marginal and their support is somewhat volatile. It's votes reached its maximum at 19.1% in 2011 during the parliamentary elections, when it became the third largest party. On the municipal elections side, going into the elections being studied, the Finn's party had gathered 8.8% overall from the 2017 municipal elections, the prior comparable elections, leading them to be the 5th largest party nationally. The elections that are going to be studied in this thesis are the municipal elections on June 13, 2021, in which the Finns party gathered 14.5% votes overall, becoming the 4th largest party. Interestingly, a Taloustutkimus ¹ and a Helsingin Sanomat ² poll suggested it was the second largest party with 18% of the vote prior to the elections. A remarkable fact is that while the Finn's party gained voter share, every other party lost voter share, bar the National Coalition which gained a modest 0.7% nationally. The parties that were larger than the Finn's party are the National Coalition (21.4%), the Social democrats (17.7%), and the Centre party (14.9%). For the purposes of this thesis, it suffices to know that the other large parties are moderate. At the time of the elections, there were 297 municipalities, excluding autonomous Åland. In 6 of these municipalities (Hamina, Orimattila, Kihniö, Ylöjärvi, Kankaanpää and Hämeenkyrö) the Finn's party became the largest party.

Table 1: *Finn's party ranking in municipal councils*

	Number of Municipalities		
	2021	2017	Δ
Rank 1	6	0	+6
Rank 2	59	32	+27
Rank 3	112	50	+62
Rank 4	81	93	-12
Rank 5	22	68	-46
Rank 6	8	30	-22
Rank 7	1	4	-3
Rank 8	0	1	-1
No Presence	4	15	-11

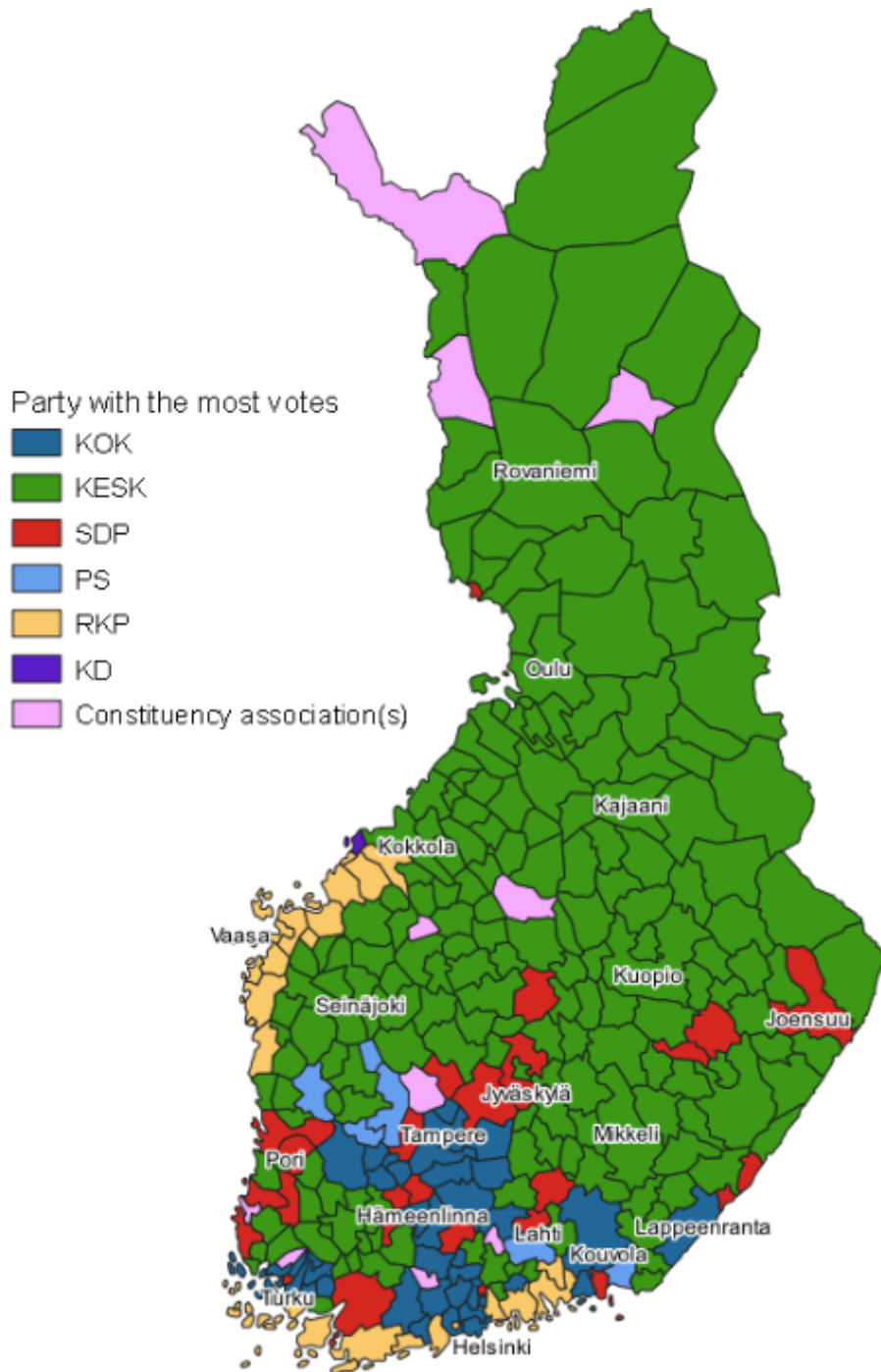
Note: Rank stands for how large the Finn's Party was in relation to the other parties by share of votes. For example, if it is the first largest party then the Rank will be 1.

An idiosyncrasy of Finland is that municipalities are bestowed with a relatively high amount of governing power. Finland has three levels of governance, state; regional, and municipal (European Commission of Regions). In terms of policy power, municipalities have a legislative body known as the municipal council which are responsible for the practical organization of health care, education, and social organizations. The organisation of vaccinations for Covid - 19 is included under the municipality's responsibilities. Covid - 19 restrictions, however, are dictated on a regional level (hospital regions), and each

¹<https://yle.fi/news/3-11974568>

²<https://www.hs.fi/politiikka/art-2000008032276.html>

Figure 1: The map shows the municipalities in Finland and the geographical distribution of where each party has the largest votes. PS is the abbreviation of the Finn's party.



municipality fits neatly into a single hospital region and contributes to a joint municipal decision making body. The highest decision making body in one of the 20 hospital districts is the Council who are elected by municipal councillors. Municipal councillors, by contrast, are elected by voters in municipal elections every four years. The number of municipal councillors to be elected are allocated according to which range of population tranches the municipality falls into, with the number of councillors ranging from 13 to 79. Councillors are free to form political alliances. The most senior persons in a municipality, depending on the municipality, are the mayor, city manager, or the chief executive, who serve differing roles. A mayor or city manager is elected from the council, while a chief executive is an elected member not from the municipal council. Most municipalities have chief executives that have chairpersons and vice chairpersons (European Commission of the Regions).

The elections occurred with the backdrop of the Covid - 19 pandemic but in June 13, 2021, the country was in between waves. Even though the country was in between waves, the official number of deaths in between the waves was higher than any week in 2020, bar 2 weeks. Mass vaccinations had already begun on December 27, 2020 and were progressing in a tapered way by making vaccines only available to certain segments of society, or available to certain age groups, subject to certain hospital districts. The first group to be vaccinated were front line ICU workers and healthcare workers and it wasn't until January 26, 2021 that ordinary 80 - 85 year old Finns were getting vaccinated. You can find the complete progression of vaccination policy in the Appendix. On the topic of Covid-19 vaccination policy, the official party line of the Finn's party was to reject vaccine skepticism however some party members have promoted vaccine skepticism in line with other RRPPs (Wondreys and Mudde 2022). Also, they voted against mandatory vaccinations. It was also shown in a poll ³ in August 2021, that only 50% of the Finn's party voters were planning to get vaccinated, while the national average was 77%. This thesis will check whether what was reported in the surveys translated to real life variation by testing whether there is a link between votes for the Finns party and rates of vaccinations.

2 Literature Review

There are, in some cases counteracting, channels for which the treatment of increased political power of a far-right party could affect social mobility and vaccinations. This paper hypothesizes that the main channels that the effect can take place is through converting locals into populists or non-compliers through campaigning or press attention after the election, through making locals perceive that there are more non compliers around them, changing their personal calculations about the private benefits of social distancing, or through affecting the credibility of the municipal councils who, after all, oversee the practical organisation of vaccinations and healthcare. The reason the effects maybe coun-

³<https://www.hs.fi/politiikka/art-2000007788942.html>

teracting is that if people, for example, look at the election results and see that there are more populists in their municipality than they previously thought, given their reputation for being un-vaccinated and not social distancing, might reformulate their beliefs about how many people around them are likely to be sick and if they are sick less likely to stay at home. Hence, it might induce more people to actually stay at home because the perceived private benefits of staying at home are higher. The credibility channel may also yield opposing results. On one hand, it may induce far-right supporters to be more compliant with orders, while on the other hand inducing others to comply less. These channels will be further explained in the section below.

2.1 Partisanship in Covid-19 Mitigation Compliance

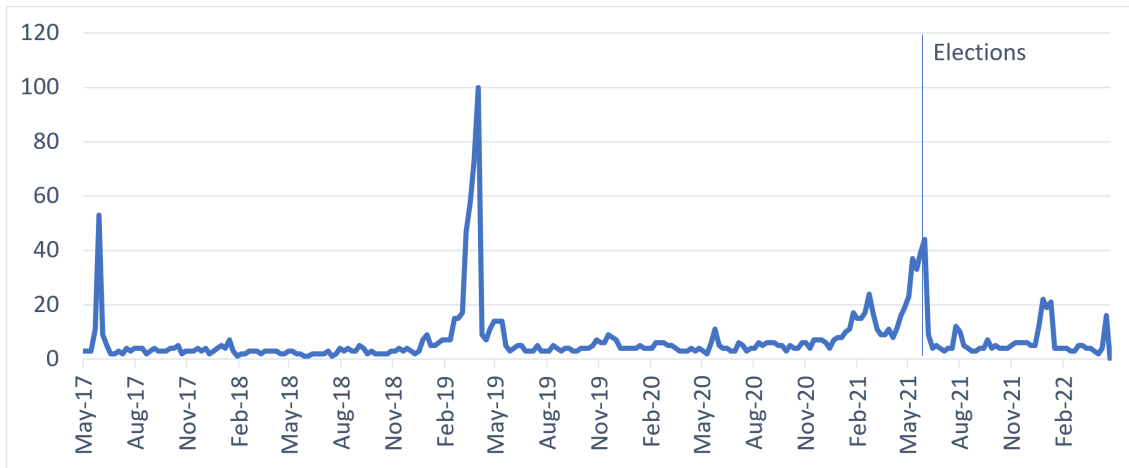
In the early days of the pandemic, studies were published linking partisanship in the United States with non-compliance to Covid - 19 mitigation efforts and orders. These early studies used differences-in-differences designs using survey data that rely on self reporting and death and case statistics which maybe subject to endogenous reporting (Painter and Qui 2020, Alcott et al. 2020, Gollwitzer 2020). Alcott et al.'s working paper indicated that there was a difference in the beliefs, behaviours, Covid-19 cases, and deaths between Republicans and Democrats in the United States of America between the start of the pandemic and June 2020. Also, Republicans tended to believe that Covid-19 was less severe and reported lower social distancing. Alcott et al.'s early estimate for the dead weight loss of partisanship in Covid-19 on public health to be USD 2.7 bn per year. The association between partisanship and Covid-19 compliance should not be underestimated, Gollwitzer finds that partisanship was more strongly associated with social distancing than several other factors, including COVID-19 cases, population density, median income, and racial and age demographics when looking at mobility data gathered from smart phone Global Positioning Systems (referred henceforth as GPS) data. Ansell et al. (2021) found a consistent correlation in Europe; showing a strong link between sub-national variation in votes in the nearest election for a populist party or idea (Brexit in the case of Britian) in Britian, Sweden, and Denmark and lower physical distancing (as measured with Google Mobility data for workplaces).

In summary, studies linking political identification and social distancing demonstrate that there is a significant difference in how areas with higher populist support social distance less than other areas both sub-nationally and internationally, robust to demographic and geographic controls. The aforementioned studies all use differences-in-differences empirical identification strategies, similar to this thesis, however this thesis does have some advantages compared to other studies. Firstly, this thesis will not rely on self party identification through surveys or potentially outdated voter data since the Finnish municipal election occurred in the middle of the pandemic and hence voter data is relevant and

pertains to the output variable moments. Secondly, prior studies indicate how voter preferences are linked to sub-national or international differences but not how regions will change, or not change, over time with political power of the far-right changing. Studying changes in the same region will allow us to postulate about new linkages without concerns about voter preferences being endogenous with unobserved regional variables. These new linkages will be discussed in the following subsections.

2.2 Reinforcement, Mobilisation, Conversion, and Amplification Channel

Figure 2: Google Searches for Perussuomalaiset in Finland



Winning municipality seats could also mean that the far-right party had particularly effective messaging through traditional forms of media, social media, and other campaigning methods that resonated with people in those municipalities. The act of campaigning, itself, might have resulted in changing the ideas of people, causing them to vaccinate less and social distance less. Furthermore, in areas that the Finns party became one of the largest parties, they are likely to have a bigger platform, through traditional forms of media and social media, to spread their views, including promoting distrust between individuals. The effects of campaigning are sometimes split into three categories in academic literature (originally delineated by Lazarsfeld et al. 1948) known as (1) reinforcement or strengthening a voters prior beliefs, (2) activation or persuading an aligned person to cast a vote, and (3) conversion to change the political beliefs. Reinforcement voters are unaffected by the campaign, and vote according to prior beliefs. Campaigns are shown to increase voter turn out (Gerber and Green 2000; Holbrook and McClurg 2005; Hillygus 2005; McClurg and Holbrook 2009) persuading, activating, or mobilising those who are aligned with the party views to cast votes. More relevant to this argument is the ability to convert voters. This thesis will not perform an analysis of how effective the Finn's party

was at converting voters however it will test for whether an effect can be observed one month prior to the elections. One month prior to the election, the instances of searches for "Perussuomalaiset" on Google, the Finnish name for the Finns Party, rose towards a local maximum, which was reached on election day. The start of the unusually high searches for "Perussuomalaiset" seem to coincide with the date of the official confirmation of candidates, May 16 2021.

2.3 Private Benefits and Altruism in Social Distancing

Egorov et al. (2022) lay out a theoretical framework where individuals social distance for either private benefits or altruistic reasons, for the benefit of others. The researchers argue that those living in ethnically diverse areas will care less about protecting others and instead will be more motivated by private benefits. Although one might assume that means less social distancing, it should be noted that it might produce the opposite effect whereby those who are healthy decide to stay at home more because they distrust those who are sick to stay at home. Therefore, there is a delicate calculation, where locals weigh up the probability that they will get infected with the benefits of not social distancing. Egorov et al. find empirical evidence from Russia and the United States to show that those living in ethnically diverse areas social distanced more in the start of the pandemic. Interestingly, the researcher use a instrumental variable design and instrument for the date of the first case using historic migration patterns to deal with potential endogenous reporting of the first case in different regions in Russia. This paper hypothesizes that there may be a similar theoretical framework for those that support far-right parties.

On a individual level in comparative European studies, it has been shown that anti-immigrant sentiment relates to far right support (Ivartsflaten 2007, Kai 2008) although Cochrane (2014) shows that far-right party support alone does not link with anti-immigrant sentiment but mixed with unemployment it does. One can extrapolate a hypothesis that the level of anti-immigration sentiment relating to far-right party support might lower others willingness to social distance for altruistic reasons and increase their willingness because they do not trust others who are sick to do so. On the topic of trust, research has demonstrated that there is a link between low social trust on a neighbourhood level and support for far-right parties (Berning and Ziller 2017), although others have shown inconclusive results between social trust and support for far-right parties (Coffé et al, 2007; Jesuit et al, 2009; Rydgren, 2009, 2011; Poznyak et al, 2011). The Finn's party stands for ethno-nationalism and nativism and emphasizes distrust in others, especially minority groups, which could mean that people that support the Finns party would be less likely to comply with social distancing to protect others and need to be motivated by private benefits. It is notable that the municipal elections were on July 13th, 2021 which was in between waves so people would tend to be less worried about others

being sick around them than they would during an elevated rate of infection, although deaths were higher than in the prior official "wave".

Perhaps a more straight forward application of the framework in Egorov et al. (2022) is simply that after the election, locals will re-calibrate their beliefs on how many populists live around them. As mentioned before, only 50% of the Finn's party voter reported that they would get vaccinated and populists have a reputation for not social distancing. Therefore, the perceived private benefits of staying at home are now higher since locals perceive that there are more un-vaccinated and less social distancing locals.

2.4 Credibility Channel

The idea of a credibility channel is borrowed from Painter and Qui (2020) who find that Democrats are more likely to social distance in Democratic states and Republicans in Republican states. Overall, they find that Republicans social distanced less, but misaligned Democrats (Democrats who live in Republican states) social distanced the least. Therefore, after an election, local people may feel more compelled to comply with decisions of local leaders who represent their same political views. On the other hand, mis-aligned voters who do not support a far-right party may comply less if the Finn's party is now the largest party in their municipality. In the Finnish municipal elections, the Finns party did not have a majority in terms of voter share in any of the municipalities, maxing out at 35% in the Kihniö municipality, therefore misaligned voters should out-number the Finn's party voter base in any given municipality. Unless higher compliance of the Finn's party voter base compensates for the mis-aligned voters complying less, the credibility channel should lead to lower compliance with Covid-19 restrictions in regions where the Finn's party gained in prominence.

3 Data

In order to study the question at hand, two panel data sets were created, one for vaccination data and one for mobility data. This data will be used to process preliminary regressions searching for linkages between Finn's party support and social distancing and vaccinations, and a differences-in-differences design to study the main question at hand; whether social distancing and vaccinations rates were changed in area where the Finn's party gained more votes after the election.

3.1 Mobility Panel Data

The first panel has daily Google mobility data across sub-regions, combined with aggregated election data, and other variables. The mobility indicator being used is daily sub-regional smartphone geo-location data from Google mobility which was used in similar papers (Allcott et al. 2020; Gollwitzer et al. 2020; Ansett et al. 2021).

In Finland, mobility data is available for different place categories; residential, parks, workplaces, and transit stations. Mobility is measured in two ways, as duration spent in the location or as number of visitors. For the residential category, $Mobility_t^{Residential}$ the average duration of users in the place of residence is measured, therefore a higher number in this category should be interpreted as more social distancing. All data is measured daily and presented based, according to the baseline average for the first weeks of January (January 3, 2020 - February 6, 2020). Although data for 2022 is available, there was a county election in January 2022 which would undermine the results and hence only the 2021 data points are studied.

$$Mobility_t^{Residential} = \frac{Duration_t^{Residential} - (Baseline\ Duration)^{Residential}}{(Baseline\ Duration)^{Residential}} \times 100$$

The daily mobility data point in the residential category is capped by the simple fact that there are 24 hours in a day. Since Google mobility does not share the numerical value of the baseline data points, it is not possible to calculate the maximum mobility data point nor is it possible to solve for the actual duration.

For all other categories, $Mobility_t$ figures are measured as number of visitors compared to the number of visitors in the baseline. The baseline was the median number of visitors from January 3, 2020 and February 6, 2020.

$$Mobility_t = \frac{(\#\ of\ Visitors)_t - Baseline\ \#\ of\ Visitors}{(Baseline\ \#\ of\ Visitors)} \times 100$$

Note, that there are some gaps in the data, since Google does not publish a daily result if the data did not reach their quality standards. Due to gaping holes in the data for parks and transit stations, no analysis was conducted on those data sets. Holes in the data are also why some regions are excluded from the analysis.

3.2 Inbound Tourism Control Variables

An important control variable is the instances on inbound tourism since tourists can affect the number of visitors to an area. This paper uses monthly sub-regional data on nights spent by tourists from Statistics Finland but transforms it to be consistent with output data. Firstly, the sub-regional population figure was found for 2021 and then multiplied with the amount of days in the month to estimate the amount of nights spent by residents. Then the nights spent by tourists in that region in January 2020 was added to form a baseline number of nights spent. The headline figure was then estimated by dividing the nights spent by tourists in that particular month, m , in that particular region, r , by the baseline figure.

$$Nights_{m,r} = \frac{Nights_{m,r}^{Tourists} + Population \times Days\ in\ Month_m}{Nights_{Baseline,r}^{Tourists} + Population \times Days\ in\ Month_m} - 1$$

The above result is an indicator estimating the amount of people in the sub-region in a given month compared to the baseline and because it varies across regions and time, it is itself a panel data set. One limitation is that the indicator does not account for outbound tourism, or the amount of people leaving the sub-region. Willingness for outbound travel, however, is also a form of non social distancing and a post election change in greater travel is relevant. The issue arises that outbound travel will register as lower mobility in the mobility indicators.

3.2.1 Data Aggregation

The election data was aggregated to fit the mobility data. The elections were on a municipal level, with voter share varying between 35% and 0% (5.6% standard deviation), and the Finn's party rank ranged between being the 1st largest party or not existing in the municipality. On the other hand, the smallest geographic unit for the mobility data is the economic sub-regional level, where every municipality is under the umbrella of a single economic sub-region. There were 293 municipalities at the time of election and 69 sub-regions, excluding the Aland region and related municipalities (please see the Appendix if you wish to see the key matching municipalities, sub-regions, and hospital districts). The number of votes and elected councillors for each party were aggregated on a sub-regional level and used as variables in the differences-in-differences regression against the output which is mobility data. The disadvantage of aggregating on a regional level is that some of the variation is lost, however the loss of variation is acceptable. For comparison, the votes for the PS party range from 28% to 3% (4.5% standard deviation) on the sub-regional level, less variation than on the municipal level but not significantly so. The advantage of aggregating the voter data in such a way is that it does not add bias into the data points

and there is limited loss of interpretability.

3.3 Vaccination Panel Data

The second panel data set has weekly vaccination data across the 20 hospital districts, which was combined with aggregated election data. The municipal level election data was aggregated into hospital district level. The need for this aggregation arises from the fact that municipal level vaccination data is not available. Furthermore, hospital districts were governed by a joint municipal body, hence the aggregation of municipalities is equivalent to replicating the joint municipal body which leads to more straight forward interpretations.

Vaccination data will be presented as the sum of first, second, and third doses of those above 18 years old per 100 people in each hospital district.

3.4 Control Variables

A summary statistics table can be found below with averages and standard deviations of some chosen control variables, for the different sub-regions, that will be used in the regression. All demographic variables and election data were found on Statistics Finland while Covid-19 case data was found on THL, the Finnish hospital districts website.

Table 2: Table of Summary Statistics

Statistic	Mean	Std.	Min	Max
Urbanisation (2020)	72	14	44	97
Population (2021)	83,497	202,920	4,981	1,591,131
Unemployment (2020)	13%	3%	6%	19%
Average Age (2021)	46.7	3.6	38.3	54.3
% in Bottom 10% Income Earners (2021)	10%	2%	7%	17%
% in Top 10% Income Earners (2021)	10%	1%	6%	13%
% Foreign Born (2021)	5%	2%	2%	14%
Covid Cases per person (2021)	0.128	0.041	0.055	0.241
% Seats for Finns (2021)	15%	4%	4%	28%
Delta % Seats	6%	3%	-1%	12%
Rank of Finns (2021)	3.3	1.1	2	6

4 Methodology

4.1 Preliminary Regressions: Is far-right party support linked with lower social distancing and vaccinations in Finland?

Before proceeding with the main identification strategy, this thesis will conduct preliminary regressions for discovery purposes. Whether voting for the Finn’s party is associated with lower social distancing and lower vaccination rates in Finland will be tested. The findings will contribute to the growing body of literature linking partisanship with social distancing in the United States (Allcott et al. 2020; Barrios and Hochberg 2020; Gollwitzer et al. 2020; Kushner Gadarian et al. 2020: 1; Painter and Qiu 2020) and linking populism support with social distancing in Europe (Ansell et al. 2021).

The regression model specification is below; $Y_{r,t}$ is the output which is the mobility indicator of choice, $Y_{r,t-1}$ is the mobility indicator lagged one level, r stands for the sub-region, t stands for the date, $\chi_{r,t}$ is the matrix of control variables that vary over the cross section, and α_0 is some constant. Note that standard errors will be clustered on a sub-regional level since the mobility samples are collected on a regional level and the thesis wishes to extrapolate to a population level. This justification for clustering echoes Abadie et al.’s 2017 paper called *When should you adjust standard errors for clustering?*.

$$Y_{r,t} = \alpha_0 + \delta Y_{r,t-1} + \beta_1 \%Votes_r + \chi_{r,t} + \varepsilon_{r,t}$$

A second regression will be performed using daily fixed effects, α_t , and sub-regional fixed effects, α_r which means there will be no need for the matrix of control variables $\chi_{r,t}$, and standard errors will not be clustered on a regional level. The sub-regional fixed effects will absorb time-invariant variation within the regions while the day fixed effects will absorb the common trend of mobility over time.

$$Y_{r,t} = \alpha_0 + \delta Y_{r,t-1} + \beta_1 \%Votes_r + \alpha_t + \alpha_r + \varepsilon_{r,w}$$

Durante et al.’s (2021) study of civic capital and it’s relationship with social distancing during Covid-19 uses a similar design with time and geographic fixed effects and a one period lag for mobility indicators. The use of a single lagged output was deemed appropriate a Woolridge test for auto-correlation specific to panel data, where the null hypothesis (H0) that there was no first-order auto-correlation was rejected for all three measures of mobility.

Measure of Mobility	Woolrigde Test Statistic	Result
Retail, Recreation	F(1, 47) = 253.5	H0 Rejected
Work	F(1, 62) = 1397.0	H0 Rejected
Residential	F(1, 53) = 328.0	H0 Rejected

The challenge arises in deciding how many lags, q , to use in the AR(q) process. Previous studies using mobility indicators (Durante et al. 2021, Ansell et al. 2021) settled with a single lag which seemingly holds in this case as the coefficients on ordinal lags were increasingly smaller in magnitude after the first lag and had limited changes in the statistical significance of the variable of most interest as well as the R-squared.

The difference in this paper compared to others (Ansell et al. 2021, Greenstone and Nigam, 2020, Durante 2021) was that others included dummy variables for policy changes, as well as there interactions with policy variables and the control variables, which omitted from this thesis for various reasons. Firstly, the data sets are strategically limited to observations in 2021, because there were few policy interventions. Policy interventions may be random in regions or endogenous, either of which may confound the analysis. The main interventions in Finland in 2021 related to restricting international travel, which is sufficiently controlled for in the monthly tourism indicator. Other interventions include limiting the amount of people in gatherings which tended to happen after July 30, 2021 which was decided on a municipal level. Most significantly, all gatherings were prohibited on December 29, 2021 nationwide, which is dealt with by excluding those dates. A full list of policy interventions, courtesy of the University of Oxford’s *Covid-19 Governance Response Tracker* can be found in Appendix.

Next, the panel data set with vaccinations is analysed to test the hypothesis that there is a negative correlation between votes for the Finn’s party and the rate of vaccinations. The regression model specification is below; $Y_{h,w}$ is the output which is vaccinations per 100 people, $Y_{h,w-1}$ is the mobility indicator lagged one level, h stands for the hospital district, w stands for the week, α_0+ stands for some constant. The constant is different from zero, since there were some vaccinations in the first week and hence a no constant rule is not imposed.

$$Y_{h,w} = \alpha_0 + \delta Y_{h,w-1} + \beta_1 \%Votes_h + \alpha_w + \varepsilon_{h,w}$$

The use of lagged variables was deemed appropriate by a Woolrigde test for auto-correlation specific to panel data, which rejected the null hypothesis that there was no auto-correlation ($F = 44.665$, $p=0.000$). Weekly fixed effects will absorb the common trend of mobility through time, and were included. On the other hand, hospital district fixed effects were not included since they would likely absorb the effect of the variation in votes. Next, instead of using first differences, a regression where the output, $Y_{h,w}$, is the

cumulative number of vaccinations per 100 people, is performed. The cumulative number of vaccinations follows an upwards trend which is quasi-linear until week 52, which is what the data set is limited to. Analysing the first difference data, it seems that the cumulative data follows a quasi-quadratic increase up-to week 26, a quasi-quadratic decline until week 46, and then a quasi-quadratic rise afterwards. However, the cumulative data can also be satisfactorily approximated by a single linear time trend, δ , without significant loss of explanatory power or statistical significance.

Figure 3: Cumulative first, second, and third doses per 100 people

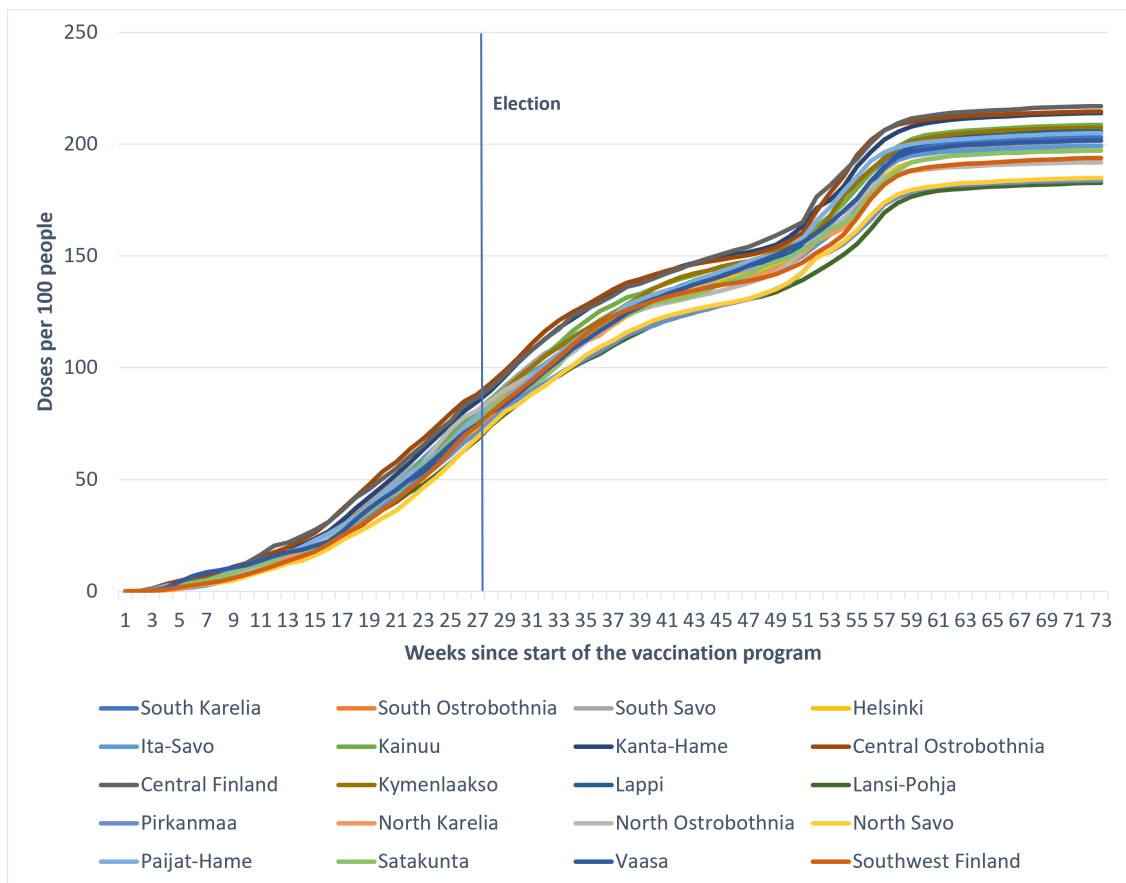
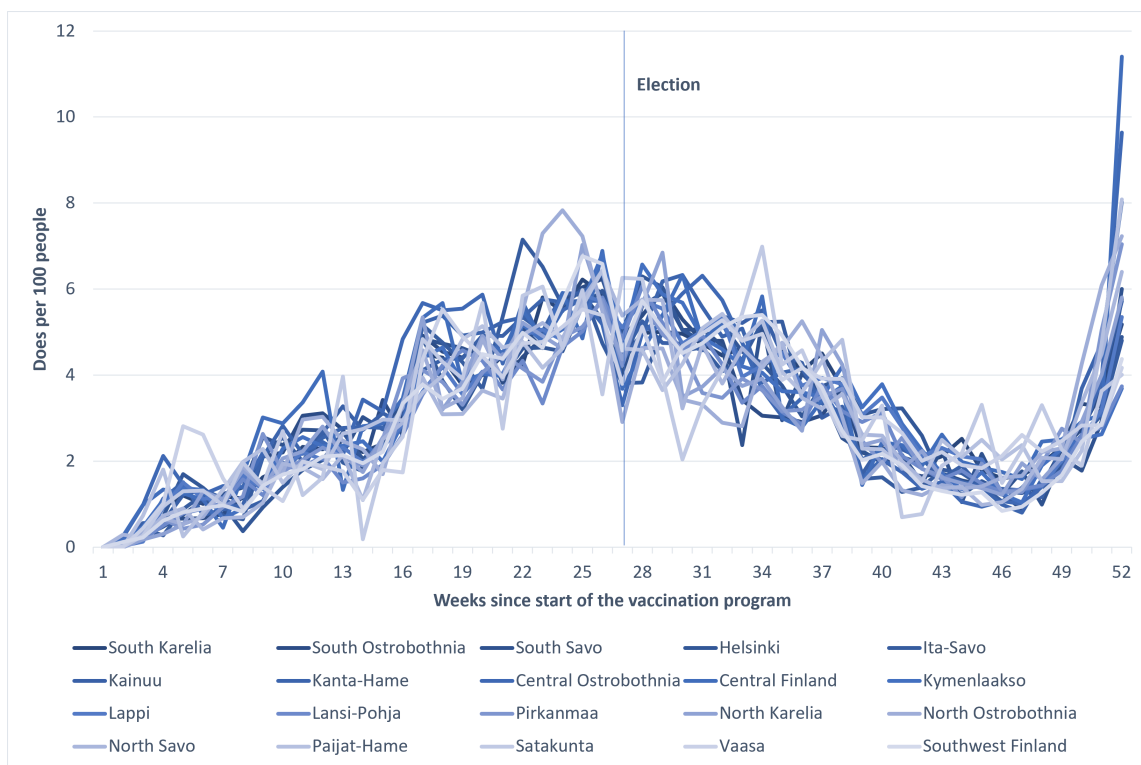


Figure 4: First, second, and third doses per 100 people



$$Y_{h,w} = \alpha_0 + \delta Week + \beta_1 \%Votes_h + \varepsilon_{h,w}$$

The standard errors of the regression above are clustered on a hospital district level. The effect of the higher votes for the Finn’s party is explained as an increase in level, β_1 , rather than a change in trend.

4.2 Differences-in-Differences: Post and Pre Elections

To test the hypothesis that the Finn’s party gaining political power in your region will affect social mobility and vaccinations, this thesis will use a differences-in-differences model specification. There are many ways to specify or identify the concept of gaining in political power but this thesis will test one straight forward way to measure political power. This paper will use the gain or loss in percentage of seats that the Finn’s party holds in the councils after the election as a measure making the assumption that there is a linear relationship with what percentage of seats you gained and output variables.

An intuitive and simplified table demonstrating the assumptions of this differences-in - differences study can be found below. It is assumed that before the elections, every

region had a level of mobility, denoted by $R_0 + R \times \Delta\%Seats$ meaning that there is a linear relationship with the percentage of seats the Finn’s party was about to gain or lose and the level of social distancing. The fact that there is a linear relationship between the change of percentage of council seats is not critical for the identification strategy, because it gets subtracted away in the first difference, D_1 . What is critical is that it is assumed that after the elections, mobility changed by a fixed unit T in all regions, which is known as the parallel trends assumption and will be discussed in greater detail in a following section. The sought after effect that this thesis wishes to tease out, is $E \times \Delta\%Seats$. The effect is assumed to be linearly related the percentage of seats that the Finn’s party gained. According to the table, the effect can be calculated by finding the first difference, D_1 , between regions before and after the election and then finding the second difference, D_2 , between regions after the election.

Table 3: Simplified motivation for the differences-in-differences

Region	Time	Outcome	D_1	D_2
Region 0 (No Change)	Before	$M = R_0$		
	After	$M = R_0 + T$	T	
Region 1 (One Percent Gain)	Before	$M = R_0 + R$		
	After	$M = R_0 + R + T + E$	T + E	
Region 2 (Two Percent Gain)	Before	$M = R_0 + 2R$		
	After	$M = R_0 + 2R + T + 2E$	T + 2E	
⋮	⋮	⋮	⋮	⋮
Region 13 (Thirteen Percent Gain)	Before	$M = R_0 + 13R$		
	After	$M = R_0 + 13R + T + 13E$	T + 13E	
				$E \times (\Delta\%Seats)$

The table above is just for demonstration purposes, however the same logic applies within a regression framework. The differences-in-differences regression model specification is below; Y is the mobility indicator or the vaccination indicator, r stands for the sub-region, t stands for the date, $Post$ stands whether the data is after the date of treatment, and $\chi_{r,t}$ is the vector of control variables that vary over cross-sections.

$$Y_{r,t} = \alpha + \beta_1 \Delta\%Seats_r + \beta_2 Post_t + \beta_3 (\Delta\%Seats \times Post)_{r,t} + \chi_{r,t} + \varepsilon_{r,t}$$

Given the specifications above, the regression takes on the following values in the following circumstances

- Pre-Election and No Change in Seats = α
- Post-Election and No Change in Seats = $\alpha + \beta_2$
- Pre-Election and x % Gain in Seats = $\alpha + \beta_2 + \beta_1 x$

- Post-Election and x % Gain in Seats = $\alpha + \beta_2 + \beta_1x + \beta_3x$

The differences-in-differences estimate is β_3x where x is the percentage of seats the Finn's party gained or lost on the municipal council, aggregated on a sub-regional level. Therefore, the coefficient β_3 will show the effect of the treatment.

4.3 Clustering Standard Errors

The different output variables in the model, both when looking at mobility and vaccinations, are serially correlated and therefore will produce standard errors that are also serially correlated. The problem of not accounting for such standard errors is especially pertinent for differences-in-differences studies and may lead to grave over-estimations of t-statistics. Bertrand et al. (2003) find that the serious overestimation of significance levels depend on "(1) the typical length of the time series used, (2) the serial correlation of the most commonly used dependent variables; and (3) whether any procedures have been used to correct for it (Greene 2002)". The researchers also note that introducing an AR(q) process into the design, as this thesis has done, is not sufficient. Instead they suggest a variety of solutions. Given, that the number of days studied and the number of regions is large it is crucial to deal with the standard errors appropriately. Clustering standard errors on a regional level should largely solve the inconsistency of standard errors.

Furthermore, the effect of the treatment will be studied in different silvers of time. In other words, whether there was a difference-in-differences in mobility 30 days before the election and post the elections until the end of 2021 will be estimated. In order to measure the effect within the aforementioned silvers of time, the regression will be performed on a date restricted data set to only include the data before the election and the data in the time frame. Note, the only time the *Post* dummy variable will be changed is when the effect 30 days *before* the election will be studied in which case *Post* will mean after May 13, 2021, so 30 days before the election.

The same differences-in-differences design will be applied to the vaccination panel data set. Note, that no regional level controls (such as demographic controls) or time specific control will be applied.

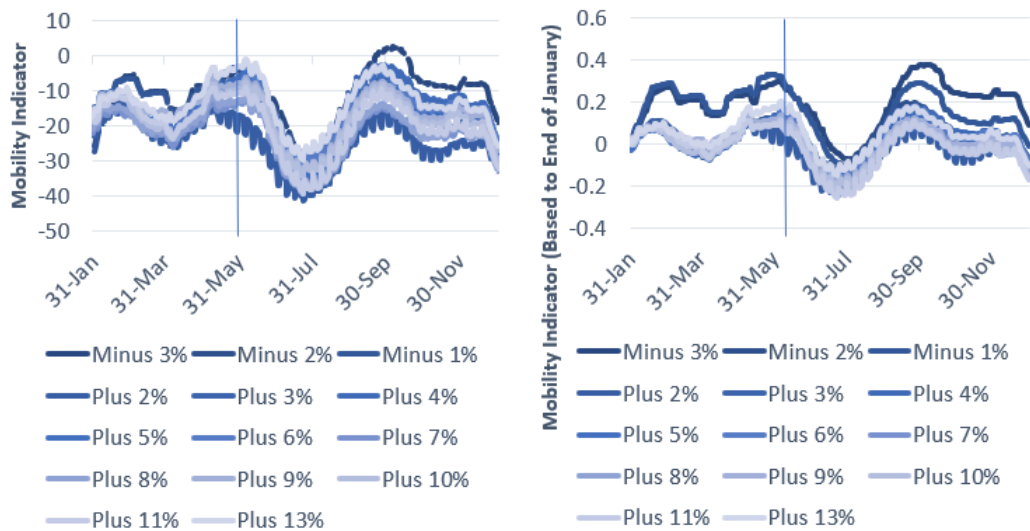
4.4 Parallel Trends Assumption

For a difference-in-differences to be valid, the parallel trends assumption must hold. The parallel trends assumption in this strategy would assume that if there were no elections, social distancing and vaccinations would trend in parallel in all regions. Typically, the parallel trends assumption is checked visually and there is no statistical test for this

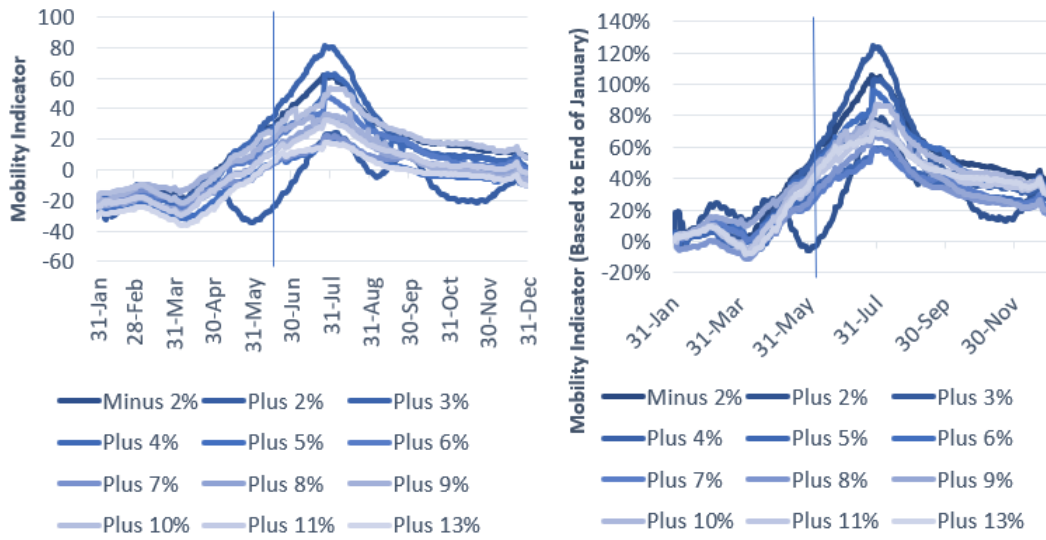
assumption.

As you can see in the graphs in the following pages prior to the elections, there seems to be a reasonable parallel trend. The parallel trends is therefore it is assumed. One possible confounding factor is that shortly after the time of the elections you can see that there is a big drop off in workplace mobility due to the holidays, when people may travel to other regions or abroad and tourists arrive. Although tourism is controlled for out-bound travel is not controlled for. Propensity to travel may be endogenous variable which coincides with the treatment. Although there are no statistics on how many outbound travellers there are in a sub-region, mobility data in 2022 can provide a clue into whether there is such a pattern. Willingness to travel, however, is also a form of non social distancing and a post election change in mobility detected from greater travel is relevant. The problem arises as it might violate the parallel trends assumption as the existing parallel trend might have changed whether there was an election or not. As a robustness check, a similar difference in difference study can be performed with mobility data from 2022, where we would expect no such change in trend after June 13. However given that this thesis predates 2022, it cannot be performed. In every Finnish region being studied there was a sharp decline in workplace mobility and a increase in retail and recreation mobility in the summer months.

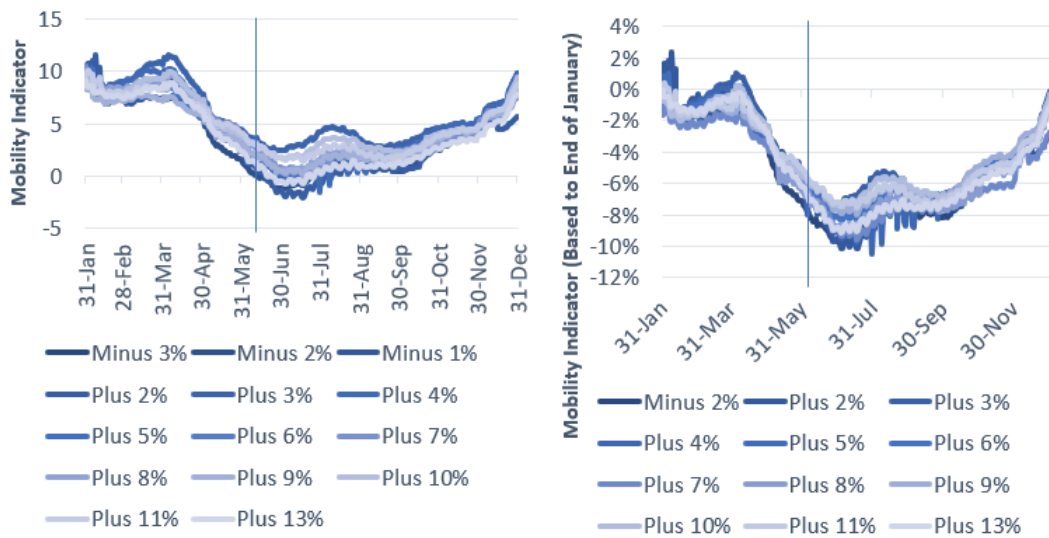
30-Rolling Average Workplace Mobility



30-Rolling Average Retail and Recreation Mobility



30-Rolling Average Residential Mobility



5 Results

5.1 Vaccinations, Social Distancing, and Populist Support

The regressions provide evidence that there is a relationship in areas where the Finn’s party garnered more support and more social distancing, in all the measures of mobility when controlling for a variety of demographic factors, day of the week dummy variables, and public holiday dummy variables. This is a finding that contradicts previous studies that linked support for populism with less social distancing and also contradicts popular belief that those that lean towards a populist ideology tend to social distance less.

In more detail, in terms of retail and recreation spot, every additional vote for the Finn’s party was linked to an average 0.24% decrease ($p = 0.105$) compared to the baseline in model (1), with regional fixed effects and no demographic controls, and a 0.18% decrease ($p = 0.035$) when including demographic controls and no fixed effects. Statistically significant control variables include, the tourism indicator, and the percentage of income earners that are in the top 10% of the nation, urbanisation, and dummy variables for day of the week (Sunday is excluded). The magnitude of the effect of Finn’s party voters is significant compared to other the demographic variables, even considering the possible variation in the underlying variables.

In workplaces, the results are more mixed and excluding fixed effects in the model specification lead to non-statistically significant effects. When included, every additional percentage vote for the Finn’s party was linked to an average 0.53% decrease ($p = 0.105$) compared to the baseline.

In residential areas, both model (1) and model (2) link higher voter share with higher duration spent at one’s residences, yet models find differing magnitudes. Model (1) suggests that on average in regions that the had a single percent higher voter share for the Finn’s party there was a 0.47% higher ($p = 0.000$) duration spent at home compared to the baseline. Model (2) suggests that a 0.02% ($p = 0.04$) higher duration was spent at home. When analysing the residential data, there is a special case. Whether the coefficients represent an economically significant impact is largely unknown and open to speculation. The magnitude of the increase in duration depends on what the baseline mobility data point is in terms of hours, which is not disclosed by Google. For example, if the baseline figure was 16 hours then it would indicate that in a sub-region where the Finns party had 20%, people spent 90 minutes more at their residence on average than a region with 0% votes for the Finn’s party. However, if the baseline figure was a mere 4 hours, it translates to 22 minutes more. Although intuitively, one can assume that the baseline figure is somewhere between 6 hours, the time a person spends asleep, and 24 hours, there is a deliberate veil of obscurity behind Google’s mobility indicators and their precise measurements.

Table 4: Do Finn's party voters social distance more or less?

	Mobility Indicators in Different Places					
	Retail, Recreation		Workplaces		Residential	
	(1)	(2)	(1)	(2)	(1)	(2)
%Votes	-24.43 (0.105)	-18.06** (0.035)	-53.04*** (0.000)	1.287 (0.896)	46.93*** (0.000)	2.145** (0.037)
Lag (1)	0.850*** (0.000)	0.826*** (0.000)	0.621*** (0.000)	0.569*** (0.000)	0.499*** (0.000)	0.716*** (0.000)
Tourism		0.798*** (0.000)		-0.020 (0.906)		-0.174** (0.018)
%Foreign Born		-18.54 (0.263)		-16.55 (0.397)		2.442 (0.209)
% in Top 10%		0.434** (0.046)		-0.434* (0.059)		0.132*** (0.005)
Average Age		0.006 (0.950)		0.541*** (0.000)		-0.018 (0.277)
Unemployment		4.713 (0.688)		-15.46 (0.165)		-0.817 (0.597)
Urbanisation		-0.113** (0.014)		0.086** (0.045)		-0.007 (0.233)
Constant	29.07*** (0.000)	11.75* (0.054)	42.71*** (0.000)	-26.46*** (0.000)	-11.77*** (0.000)	-1.144 (0.272)
Public Holiday Controls		Yes		Yes		Yes
Day of Week Controls		Yes		Yes		Yes
Fixed Effects	Day, Region	No	Day, Region	No	Day, Region	No
R-squared	0.927	0.799	0.904	0.616	0.938	0.688
N. of Observations	13980	12923	21460	17937	14218	12741
N. of Days	365	365	365	365	365	365
N. of Regions	43	43	51	51	47	47

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Overall, model (1) is more rigorous due to the inclusion of fixed effects allowing us to link mobility differences within a day to voter share, which is important since a large amount of variation is produced on a daily basis, which is largely unexplained by control variables. Furthermore, the R-squared is above 0.9 for all measures of mobility in the first model.

When looking at vaccination data, the results are more intuitive and relate to the poll that showed that Finn's party voters on average are less willing to get vaccinated. Both regression designs point to a higher percentage of votes for the Finn's party being correlated with a lower rate of vaccination. When looking at first differenced data on the cumulative number of first, second, and third doses per 100 people in the population, it was found for every percent extra the Finn's party had in voter share, there was on average -0.01 less persons per 100 ($p = 0.01$) getting vaccinated in the week. The regression design, that did not include week fixed effects and instead clustered on a hospital district level found that the level of cumulative vaccinations was lower by 0.46 persons per 100 ($p=0.194$) for every extra vote for the Finn's party in the first 53 weeks of the vaccination program. The results, however, were not statistically significant.

Table 5: *Do Finn's party voters vaccinate more or less?*

	(1)	(2)
	Vaccinations per 100 people	Cumm. vaccinations per 100 people
Lag (1)	0.424*** (0.000)	
%Votes \times 100	-0.0116** (0.049)	-0.469 (0.194)
Week		3.588*** (0.000)
Constant	0.257 (0.120)	-13.97** (0.016)
Fixed Effects	Week	None
R-squared	0.876	0.971
N. of Observations	1020	1040
N. of Districts	20	20
N. of Weeks	53	53

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.2 Differences-in-Differences: Did the elections change things?

All measures of mobility used pointed towards a lower level of mobility compared to their individual baselines on average in sub-regions where the Finn's party suddenly represented a larger share of seats on the joint councils than before.

Most of the coefficients were not statistically significant to the 10% level, therefore there is no to little evidence that the Finn's party gaining seats in the municipal election lead to lower mobility. The one exception in terms of statistical significance is that time spent at home increased on average by 0.02% ($p = 0.026$) compared to the baseline for every extra percent seat that the Finn's party gained on the council. Furthermore, the increase also pre-dates the election, as time spent at home increased on average by 0.10% ($p = 0.026$) 30 days before the election for every percentage point the party was about to gain. This is contrary to the hypothesis that effective campaigning might have induced locals to social distance less. With other proxies for social distancing, no statistically significant effect was found 30 days before the election. Hence, the existence of a economically and statistically significant coefficient before the election may suggest a violation of the parallel trends assumption, especially since the effect is larger than the post election effect.

Table 6: Differences-in-differences regression with change in the percentage in seats

	Workplaces		Residential		Retail, Recreation	
	(1)	(2)	(1)	(2)	(1)	(2)
Lags (1)	0.426*** (0.000)	0.555*** (0.000)	0.558*** (0.000)	0.653*** (0.000)	0.788*** (0.000)	0.826*** (0.000)
$\Delta\%Seats$	-0.000 (0.997)	-0.010 (0.920)	-0.014 (0.289)	0.003 (0.852)	-0.0540 (0.662)	-0.0936 (0.345)
t - 30 days	7.653*** (0.000)		-3.196*** (0.000)		7.268*** (0.006)	
(t - 30 days) $\times \Delta\%Seats$	-0.0357 (0.825)	(0.203)	0.104*** (0.001)	(0.026)	-0.0296 (0.905)	(0.520)
Post $\times \Delta\%Seats$		-0.138 (0.203)		0.022** (0.026)		-0.0435 (0.520)
Post		-1.929** (0.031)		-0.744*** (0.000)		2.371*** (0.000)
Tourism			-0.0720** (0.023)	-0.009 (0.844)	0.390*** (0.000)	0.517*** (0.000)
Constant	-2.443** (0.027)	0.698 (0.503)	0.530*** (0.001)	-0.237 (0.172)	5.651*** (0.002)	2.924*** (0.009)
Day of Week Controls	Yes	Yes	Yes	Yes	Yes	Yes
Public Holiday Controls	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.562	0.632	0.666	0.703	0.783	0.798
N. of Observations	9767	21460	5758	12741	5856	12923
N. of Regions	63	63	46	46	43	43
N. of Days	166	362	166	362	166	362

p-values in parentheses, standard errors are clustered on regional level for all regressions

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

the numerical value of % seats has been multiplied by 100

The differences-in-differences on the vaccination panel data set produced more interesting results, ones that support the hypothesis that after the election in a region where the Finn's party gained more percentage seats on the joint municipal council, people tended to vaccinate less. For every extra percentage seats the Finn's party gained in a joint municipal body, 0.007 persons per 100 less ($p = 0.063$) vaccinated in the region post the elections. Assuming the causation to be true, a back of the envelope calculation would suggest that the 2021 municipal elections resulted in a total of 2,055 less vaccinations to be administered between June 13, 2021 and December 17 2021. The figure is certainly significant in a country of 5.4 million people.

Table 7: *Differences-in-Differences in vaccinations after the election*

	(1)
	Cumm. vaccinations per 100 people
Week	0.0290*** (0.000)
$\Delta\%Seats$	-0.00613* (0.056)
Post	0.280*** (0.000)
Post \times $\Delta\%Seats$	-0.00683* (0.063)
Constant	-0.109*** (0.000)
R-squared	0.983
N. of Observations	1090
N. of Districts	20
N. of Weeks	53

p-values in parentheses, standard errors are clustered on a hospital district level

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

6 Limitations and Discussions

There are various limitations that stem from the type of output data being used, the variables of interest, confounding variables and the empirical specifications. Some of the limitations have been touched upon in previous sections but they will be consolidated below.

6.1 Data Limitations

Google mobility data has unleashed a vast and deep sea of aggregated GPS data to the public and it is no surprise that the use of such data is growing in academia and the private sector, however there are some inherent limitations. Firstly, Google's choice of baseline is arbitrary and a unusual event may offset the data in a particular region. This form of error will cause bias and increased or decreased variability in the percentage changes for all data points afterwards. Furthermore, the further in time the data is from the baseline the more likely that it will be skewed by unobserved variables, like changes in population in a region. One solution to mitigate against both threats would be to re-base the data to a carefully chosen date, or perhaps the first date being studied. No such transformation

was performed in this thesis since any other date is equally arbitrary, although there might have been an advantage to gain by re-basing the data to a date closer to the one being studied. Furthermore, when using mobility indicators that use number of visitors as a proxy for social distancing, it is crucial to control for outbound travel, because it has a doubly unwanted effect. First, it means that there is a unobserved variable and second, an increase in outbound travel can be interpreted as lower social distancing yet it will decrease mobility indicators, suggesting the opposite.

Vaccination data as an output, by contrast, is relatively unproblematic, but must be transformed so that it is comparable across regions of different populations. In this specific case, because municipalities in the same sub-region may belong to different hospital districts and governmental statistical data tends to be published on a sub-regional level, demographic statistics on a hospital district level were rare. Demographic controls are not strictly necessary since every type of demographic was meant to be triple vaccinated eventually and regional fixed effects can be applied to mitigate against regional demographic variation. Also, vaccination policy progression was different in every municipality. It is likely that the progression of vaccination availability policy is endogenous to vaccine take-up in the specific segment that the vaccines are being targeted, say 85 - 80 year olds, since if there was low take-up the hospital district may expand the age range which is allowed to get vaccinated which makes controlling for it difficult. One assumption made in this study is that vaccine availability was equal for all regions and that the intended vaccine policy was executed efficiently in all districts.

6.2 Regression Design Limitations

In terms of the use of change in the percentage of seats for the differences-in-differences, there are some advantages and disadvantages. The main advantage is that it is simple to use and interpret. However, if the hypothesis is that an increase in political power of the Finn's party in a council may lead to people social distancing in different ways or change their plans to vaccinate, there maybe a better way to test for that. Looking more closely at the election data, you can conclude that in a majority of municipalities an increase in seats was felt in similar ways. For example, if we look at the municipalities where the Finn's party gained 11% more seats, the Finn's party ended up having between 19.7% and 15.4% of the seats. If we instead focus on the municipalities where the Finn's party gained 7% more seats, in four the Finn's party had around 16% votes, in one they had 11%, and in one they had 7%. It may very well be the case, that the locals reacted differently in terms of vaccinations and social distancing even if they had the same percentage change just because in one the Finn's party remained a marginal political player and in others a larger political player. It is possible that if a different variable was used you would find a statistically significant differences-in-differences in mobility where the Finn's party gained

more political power, after the election.

The differences-in-differences assumes that the relationship between increasing percent seats and the output was linear, which may not be the case. Under ideal circumstances with micro level data that matches whether or not a person voted (so a binary variable) for the Finn's party with their level of social distancing, inferences about how much Finn's party voters actually social distance would be more straight forward.

6.3 Data Aggregation Limitations

Another limitation is that the level of data available for the mobility indicators and vaccination data did not match the level of the election data, which was dealt with by aggregating the election data. Although, data aggregation was smooth and allowed for interpretability, there was a loss in variation which may have caused a over acceptance of the null hypothesis. Ideally, mobility data and vaccination data would have been available on a more granule municipal level.

It was shown that a simple regression between social mobility and vaccinations and support for a populist party was associated with more social distancing, contrary to finding in other countries but less vaccinations, in line with conventional beliefs and polling data. This may suggest that Finland is a unique case study, perhaps due to more moderate positions on Covid-19 policy compared to other RRPPs, although this thesis does not attempt to make comparisons between RRPPs. Overall, this may suggest the limited external validity of the Finnish case study.

7 Conclusion

In conclusion, evidence from the Finnish municipal elections in 2021 was found in support of the hypothesis that the results of local elections in which a populist party has a win over other more moderate parties might change the way locals behave in terms of vaccinations after the elections. On the other hand, this thesis did not find evidence that there was a similar effect from the treatment on mobility. The results largely suggested that there was no statistically significant impact on social mobility, even if there was, on average, lower mobility in areas where the Finn's party gained more seats than others after the election.

On the vaccination front, there was a differences-in-differences in the amount of people per 100 people in the population that get vaccinated before and after the election according to the amount of seats the Finn's party gained in the district of interest, as a percentage of total council seats. For every extra percentage seats the Finn's party gained in a joint municipal body, 0.007 persons per 100 less ($p = 0.063$) vaccinated in the

region post the elections. Not only are the results statistically significant, but they are also economically significant. A back of the envelope calculation suggests that 2,055 less vaccinations were administered between June 13, 2021 and December 17 2021 because of the elections.

The hypothesized channels for the effect are that there was a loss in credibility in the vaccination program, the Finn's party undermined policy relating to the access of vaccinations in the areas where they had more seats, that the Finn's party was able to leverage their new found power to convert locals into vaccine skeptics, or persuade people to act in accordance with their pre-existing beliefs about vaccine skepticism.

The relatively large powers granted to municipalities in terms of Covid-19 restrictions and the organisation of vaccinations, make the 2021 Finnish municipal elections a particularly compelling case study for the importance of local elections in affecting people's everyday lives and health. The findings are especially interesting because they suggest a more pernicious effect. Even though the Finn's party did not pass any obvious anti-vaccination policies or obviously undermine the vaccination program, a economically significant effect was still found. In other words, municipal elections as mundane as they might seem, can make an out-sized impact.

The findings may be relevant to policy makers who wish to understand the drivers behind differing rates of vaccination take-up in sub-national regions. It also suggests that there may have been a reason to worry about RRPPs gaining in power and the negative effects on Covid-19 mitigation efforts it would have had.

Finally, although prior studies had shown that there is a link between populist support and higher mobility, this paper found evidence of the opposite effect in Finland. This paper found a strong association between lower mobility, in three measures of mobility used, and votes for the Finn's party in a timely election, when controlling for demographic and time-specific variables. On the other hand, higher regional voter share for the Finn's party related to lower rates of vaccinations.

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B Appendices

B.1 Appendix I: Municipality, Sub-Region, and Hospital District Key

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
20	Ackas	63	Södra Birkaland	6	Pirkanmaa
5	Alajärvi	146	Järviseuutu	15	South Ostrobothnia
9	Alavieska	177	Ylivieska	18	North Ostrobothnia
10	Alavo	144	Kuusiokunnat	15	South Ostrobothnia
16	Asikkala	71	Lahtis	7	Päijät-Häme
18	Askola	15	Borgå	25	Helsinki and Uusimaa
19	Aura	25	Loimaa	3	Southwest Finland
35	Brändö	213	Ålands skärgård	0	Åland
43	Eckerö	212	Ålands landsbygd	0	Åland
46	Enonkoski	103	Nyslott	11	Itä-Savo
47	Enontekis	196	Tunturi-Lappi	21	Lappi
49	Esbo	11	Helsingfors	25	Helsinki and Uusimaa
50	Eura	41	Raumo	4	Satakunta
51	Euraåminne	41	Raumo	4	Satakunta
52	Evijärvi	146	Järviseuutu	15	South Ostrobothnia
60	Finström	212	Ålands landsbygd	0	Åland
61	Forssa	53	Forssa	5	Kanta-Häme
62	Föglö	213	Ålands skärgård	0	Åland
65	Geta	212	Ålands landsbygd	0	Åland
69	Haapajärvi	176	Nivala-Haapajärvi	18	North Ostrobothnia
71	Haapavesi	175	Haapavesi-Siikalatva	18	North Ostrobothnia
72	Karlö	171	Uleåborg	18	North Ostrobothnia
74	Halso	161	Kaustby	17	Central Ostrobothnia
75	Fredrikshamn	82	Kotka-Fredrikshamn	8	Kymenlaakso
76	Hammarland	212	Ålands landsbygd	0	Åland
77	Hankasalmi	131	Jyväskylä	14	Central Finland
78	Hangö	14	Raseborg	25	Helsinki and Uusimaa
79	Harjavalta	43	Björneborg	4	Satakunta
81	Gustav Adolfs	71	Lahtis	7	Päijät-Häme
82	Hattula	51	Tavastehus	5	Kanta-Häme
86	Hausjärvi	52	Riihimäki	5	Kanta-Häme

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
111	Heinola	71	Lahtis	7	Päijät-Häme
90	Heinävesi	122	Joensuu	12	North Karelia
91	Helsingfors	11	Helsingfors	25	Helsinki and Uusimaa
97	Hirvensalmi	101	S:t Michel	10	South Savo
98	Hollola	71	Lahtis	7	Päijät-Häme
102	Vittis	43	Björneborg	4	Satakunta
103	Humppila	53	Forssa	5	Kanta-Häme
105	Hyrynsalmi	181	Kehys-Kainuu	19	Kainuu
106	Hyvinge	11	Helsingfors	25	Helsinki and Uusimaa
108	Tavastkyro	64	Tammerfors	6	Pirkanmaa
109	Tavastehus	51	Tavastehus	5	Kanta-Häme
139	Ijo	173	Oulunkaari	18	North Ostrobothnia
140	Idensalmi	111	Norra Savolax	13	North Savo
142	Itis	71	Lahtis	7	Päijät-Häme
143	Ikalis	61	Nordvästra Birkaland	6	Pirkanmaa
145	Ilmola	142	Seinäjoki	15	South Ostrobothnia
146	Ilomants	122	Joensuu	12	North Karelia
153	Imatra	93	Imatra	9	South Karelia
148	Enare	197	Norra Lappland	21	Lappi
149	Ingå	14	Raseborg	25	Helsinki and Uusimaa
151	Storå	141	Suupohja	15	South Ostrobothnia
152	Storkyro	142	Seinäjoki	15	South Ostrobothnia
165	Janakkala	51	Tavastehus	5	Kanta-Häme
167	Joensuu	122	Joensuu	12	North Karelia
169	Jockis	53	Forssa	5	Kanta-Häme
170	Jomala	212	Ålands landsbygd	0	Åland
171	Jorois	114	Varkaus	10	South Savo
172	Joutsa	132	Joutsa	14	Central Finland
176	Juga	122	Joensuu	12	North Karelia
177	Juupajoki	69	Övre Birkaland	6	Pirkanmaa
178	Juva	105	Pieksämäki	10	South Savo
179	Jyväskylä	131	Jyväskylä	14	Central Finland
181	Jämijärvi	44	Norra Satakunta	4	Satakunta
182	Jämsä	134	Jämsä	6	Pirkanmaa
186	Träskända	11	Helsingfors	25	Helsinki and Uusimaa
202	S:t Karins	23	Åbo	3	Southwest Finland
204	Kaavi	113	Nordöstra Savolax	13	North Savo
205	Kajana	182	Kajana	19	Kainuu
208	Kalajoki	177	Ylivieska	18	North Ostrobothnia
211	Kangasala	64	Tammerfors	6	Pirkanmaa
213	Kangasniemi	101	S:t Michel	10	South Savo
214	Kankaanpää	44	Norra Satakunta	4	Satakunta
216	Kannonkoski	138	Saarijärvi-Viitasaari	14	Central Finland
217	Kannus	162	Karleby	17	Central Ostrobothnia
218	Bötom	141	Suupohja	15	South Ostrobothnia
224	Högfors	11	Helsingfors	25	Helsinki and Uusimaa

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
226	Karstula	138	Saarijärvi-Viitasaari	14	Central Finland
230	Karvia	44	Norra Satakunta	4	Satakunta
231	Kaskö	153	Sydösterbotten	16	Vaasa
232	Kauhajoki	141	Suupohja	15	South Ostrobothnia
233	Kauhava	142	Seinäjoki	15	South Ostrobothnia
235	Grankulla	11	Helsingfors	25	Helsinki and Uusimaa
236	Kaustby	161	Kaustby	17	Central Ostrobothnia
239	Keitele	111	Norra Savolax	13	North Savo
240	Kemi	192	Kemi-Torneå	20	Länsi-Pohja
320	Kemijärvi	194	Östra Lappland	21	Lappi
241	Keminmaa	192	Kemi-Torneå	20	Länsi-Pohja
322	Kimitoön	21	Åboland-Turunmaa	3	Southwest Finland
244	Kempele	171	Uleåborg	18	North Ostrobothnia
245	Kervo	11	Helsingfors	25	Helsinki and Uusimaa
249	Keuru	133	Keuru	14	Central Finland
250	Kihniö	61	Nordvästra Birkaland	6	Pirkanmaa
256	Kinnula	138	Saarijärvi-Viitasaari	14	Central Finland
257	Kyrkslätt	11	Helsingfors	25	Helsinki and Uusimaa
260	Kides	124	Mellersta Karelen	12	North Karelia
261	Kittilä	196	Tunturi-Lappi	21	Lappi
263	Kiuruvesi	111	Norra Savolax	13	North Savo
265	Kivijärvi	138	Saarijärvi-Viitasaari	14	Central Finland
271	Kumo	43	Björneborg	4	Satakunta
272	Karleby	162	Karleby	17	Central Ostrobothnia
273	Kolari	196	Tunturi-Lappi	21	Lappi
275	Konnevesi	135	Äänekoski	14	Central Finland
276	Kontiolax	122	Joensuu	12	North Karelia
280	Korsnäs	152	Vasa	16	Vaasa
284	Koskis	25	Loimaa	3	Southwest Finland
285	Kotka	82	Kotka-Fredrikshamn	8	Kymenlaakso
286	Kouvola	81	Kouvola	8	Kymenlaakso
287	Kristinestad	153	Sydösterbotten	16	Vaasa
288	Kronoby	154	Jakobstadsregionen	17	Central Ostrobothnia
290	Kuhmo	181	Kehys-Kainuu	19	Kainuu
291	Kuhmois	64	Tammerfors	6	Pirkanmaa
295	Kumlunge	213	Ålands skärgård	0	Åland
297	Kuopio	112	Kuopio	13	North Savo
300	Kuortane	144	Kuusiokunnat	15	South Ostrobothnia
301	Kurikka	142	Seinäjoki	15	South Ostrobothnia
304	Gustavs	24	Nystadsregionen	3	Southwest Finland
305	Kuusamo	178	Koillismaa	18	North Ostrobothnia
312	Kyyjärvi	138	Saarijärvi-Viitasaari	14	Central Finland
316	Kärkölä	71	Lahtis	7	Päijät-Häme
317	Kärsämäki	176	Nivala-Haapajärvi	18	North Ostrobothnia
318	Kökar	213	Ålands skärgård	0	Åland
398	Lahtis	71	Lahtis	7	Päijät-Häme

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
399	Laihela	152	Vasa	16	Vaasa
400	Letala	24	Nystadsregionen	3	Southwest Finland
407	Lappträsk	16	Lovisa	25	Helsinki and Uusimaa
402	Lapinlahti	111	Norra Savolax	13	North Savo
403	Lappajärvi	146	Järvisetu	15	South Ostrobothnia
405	Villmanstrand	91	Villmanstrand	9	South Karelia
408	Lappo	142	Seinäjoki	15	South Ostrobothnia
410	Laukas	131	Jyväskylä	14	Central Finland
416	Lemi	91	Villmanstrand	9	South Karelia
417	Lemland	212	Ålands landsbygd	0	Åland
418	Lempäälä	64	Tammerfors	6	Pirkanmaa
420	Leppävirta	114	Varkaus	13	North Savo
421	Lestijärvi	161	Kaustby	17	Central Ostrobothnia
422	Lieksa	125	Pielisen Karjala	12	North Karelia
423	Lundo	23	Åbo	3	Southwest Finland
425	Limingo	171	Uleåborg	18	North Ostrobothnia
426	Libelits	122	Joensuu	12	North Karelia
444	Lojo	11	Helsingfors	25	Helsinki and Uusimaa
430	Loimaa	25	Loimaa	3	Southwest Finland
433	Loppi	52	Riihimäki	5	Kanta-Häme
434	Lovisa	16	Lovisa	25	Helsinki and Uusimaa
435	Luhanka	132	Joutsa	14	Central Finland
436	Lumijoki	171	Uleåborg	18	North Ostrobothnia
438	Lumparland	212	Ålands landsbygd	0	Åland
440	Larsmo	154	Jakobstadsregionen	16	Vaasa
441	Luumäki	91	Villmanstrand	9	South Karelia
475	Malax	152	Vasa	16	Vaasa
478	Mariehamn	211	Mariehamns stad	0	Åland
480	S:t Märten	25	Loimaa	3	Southwest Finland
481	Masku	23	Åbo	3	Southwest Finland
483	Merijärvi	177	Ylivieska	18	North Ostrobothnia
484	Sastmola	43	Björneborg	4	Satakunta
489	Miehikkälä	82	Kotka-Fredrikshamn	8	Kymenlaakso
491	S:t Michel	101	S:t Michel	10	South Savo
494	Muhos	171	Uleåborg	18	North Ostrobothnia
495	Multia	133	Keuru	14	Central Finland
498	Muonio	196	Tunturi-Lappi	21	Lappi
499	Korsholm	152	Vasa	16	Vaasa
500	Muurame	131	Jyväskylä	14	Central Finland
503	Virmo	23	Åbo	3	Southwest Finland
504	Mörskom	15	Borgå	7	Päijät-Häme
505	Mäntsälä	11	Helsingfors	25	Helsinki and Uusimaa
508	Mänttä-Vilppula	69	Övre Birkaland	6	Pirkanmaa
507	Mäntyharju	101	S:t Michel	10	South Savo
529	Nägendal	23	Åbo	3	Southwest Finland
531	Nakkila	43	Björneborg	4	Satakunta

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
535	Nivala	176	Nivala-Haapajärvi	18	North Ostrobothnia
536	Nokia	64	Tammerfors	6	Pirkanmaa
538	Nousis	23	Åbo	3	Southwest Finland
541	Nurmes	125	Pielisen Karjala	12	North Karelia
543	Nurmijärvi	11	Helsingfors	25	Helsinki and Uusimaa
545	Närpes	153	Sydösterbotten	16	Vaasa
560	Orimattila	71	Lahtis	7	Päijät-Häme
561	Oripää	25	Loimaa	3	Southwest Finland
562	Orivesi	64	Tammerfors	6	Pirkanmaa
563	Oulainen	177	Ylivieska	18	North Ostrobothnia
564	Uleåborg	171	Uleåborg	18	North Ostrobothnia
309	Outokumpu	122	Joensuu	12	North Karelia
576	Padasjoki	71	Lahtis	7	Päijät-Häme
577	Pemar	23	Åbo	3	Southwest Finland
578	Paltamo	182	Kajana	19	Kainuu
445	Pargas	21	Åboland-Turunmaa	3	Southwest Finland
580	Parikkala	93	Imatra	9	South Karelia
581	Parkano	61	Nordvästra Birkaland	6	Pirkanmaa
599	Pedersöre	154	Jakobstadsregionen	16	Vaasa
583	Pelkosenniemi	194	Östra Lappland	21	Lappi
854	Pello	193	Tornedalen	21	Lappi
584	Perho	161	Kaustby	17	Central Ostrobothnia
588	Pertunmaa	101	S:t Michel	10	South Savo
592	Petäjävesi	131	Jyväskylä	14	Central Finland
593	Pieksämäki	105	Pieksämäki	10	South Savo
595	Pielavesi	111	Norra Savolax	13	North Savo
598	Jakobstad	154	Jakobstadsregionen	16	Vaasa
601	Pihtipudas	138	Saarijärvi-Viitasaari	14	Central Finland
604	Birkala	64	Tammerfors	6	Pirkanmaa
607	Polvijärvi	122	Joensuu	12	North Karelia
608	Pämark	43	Björneborg	4	Satakunta
609	Björneborg	43	Björneborg	4	Satakunta
611	Borgnäs	11	Helsingfors	25	Helsinki and Uusimaa
638	Borgå	15	Borgå	25	Helsinki and Uusimaa
614	Posio	194	Östra Lappland	21	Lappi
615	Pudasjärvi	173	Oulunkaari	18	North Ostrobothnia
616	Pukkila	15	Borgå	7	Päijät-Häme
619	Punkalaidun	68	Sydvästra Birkaland	3	Southwest Finland
620	Puolanka	181	Kehys-Kainuu	19	Kainuu
623	Puumala	101	S:t Michel	10	South Savo
624	Pyttis	82	Kotka-Fredrikshamn	8	Kymenlaakso
625	Pyhäjoki	174	Brahestad	18	North Ostrobothnia
626	Pyhäjärvi	176	Nivala-Haapajärvi	18	North Ostrobothnia
630	Pyhäntä	175	Haapavesi-Siikalatva	18	North Ostrobothnia
631	Pyhäranta	24	Nystadsregionen	3	Southwest Finland
635	Pälkäne	64	Tammerfors	6	Pirkanmaa

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
636	Pöytyä	25	Loimaa	3	Southwest Finland
678	Brahestad	174	Brahestad	18	North Ostrobothnia
710	Raseborg	14	Raseborg	25	Helsinki and Uusimaa
680	Reso	23	Åbo	3	Southwest Finland
681	Rantasalmi	103	Nyslott	11	Itä-Savo
683	Ranua	191	Rovaniemi	21	Lappi
684	Raumo	41	Raumo	4	Satakunta
686	Rautalampi	115	Inre Savolax	13	North Savo
687	Rautavaara	113	Nordöstra Savolax	13	North Savo
689	Rautjärvi	93	Imatra	9	South Karelia
691	Reisjärvi	176	Nivala-Haapajärvi	17	Central Ostrobothnia
694	Riihimäki	52	Riihimäki	5	Kanta-Häme
697	Ristijärvi	182	Kajana	19	Kainuu
698	Rovaniemi	191	Rovaniemi	21	Lappi
700	Ruokolax	93	Imatra	9	South Karelia
702	Ruovesi	69	Övre Birkaland	6	Pirkanmaa
704	Rusko	23	Åbo	3	Southwest Finland
707	Rääkkylä	124	Mellersta Karelen	12	North Karelia
729	Saarijärvi	138	Saarijärvi-Viitasaari	14	Central Finland
732	Salla	194	Östra Lappland	21	Lappi
734	Salo	22	Salo	3	Southwest Finland
736	Saltvik	212	Ålands landsbygd	0	Åland
790	Sastamala	68	Sydvästra Birkaland	6	Pirkanmaa
738	Sagu	23	Åbo	3	Southwest Finland
739	Savitaipale	91	Villmanstrand	9	South Karelia
740	Nyslott	103	Nyslott	11	Itä-Savo
742	Savukoski	194	Östra Lappland	21	Lappi
743	Seinäjoki	142	Seinäjoki	15	South Ostrobothnia
746	Sievi	177	Ylivieska	18	North Ostrobothnia
747	Siikais	44	Norra Satakunta	4	Satakunta
748	Siikajoki	174	Brahestad	18	North Ostrobothnia
791	Siikalatva	175	Haapavesi-Siikalatva	18	North Ostrobothnia
749	Siilinjärvi	112	Kuopio	13	North Savo
751	Simo	192	Kemi-Torneå	20	Länsi-Pohja
753	Sibbo	11	Helsingfors	25	Helsinki and Uusimaa
755	Sjundeå	11	Helsingfors	25	Helsinki and Uusimaa
758	Sodankylä	197	Norra Lappland	21	Lappi
759	Soini	146	Järviseutu	15	South Ostrobothnia
761	Somero	22	Salo	3	Southwest Finland
762	Sonkajärvi	111	Norra Savolax	13	North Savo
765	Sotkamo	182	Kajana	19	Kainuu
766	Sottunga	213	Ålands skärgård	0	Åland
768	Sulkava	103	Nyslott	11	Itä-Savo
771	Sund	212	Ålands landsbygd	0	Åland
777	Suomussalmi	181	Kehys-Kainuu	19	Kainuu
778	Suonenjoki	115	Inre Savolax	13	North Savo

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
781	Sysmä	71	Lahtis	7	Päijät-Häme
783	Säkylä	41	Raumo	4	Satakunta
831	Taipalsaari	91	Villmanstrand	9	South Karelia
832	Taivalkoski	178	Koillismaa	18	North Ostrobothnia
833	Tövsala	24	Nystadsregionen	3	Southwest Finland
834	Tammela	53	Forssa	5	Kanta-Häme
837	Tammerfors	64	Tammerfors	6	Pirkanmaa
844	Tervo	115	Inre Savolax	13	North Savo
845	Tervola	192	Kemi-Torneå	20	Länsi-Pohja
846	Östermark	141	Suupohja	15	South Ostrobothnia
848	Tohmajärvi	124	Mellersta Karelen	12	North Karelia
849	Toholampi	161	Kaustby	17	Central Ostrobothnia
850	Toivakka	131	Jyväskylä	14	Central Finland
851	Torneå	192	Kemi-Torneå	20	Länsi-Pohja
853	Åbo	23	Åbo	3	Southwest Finland
857	Tuusniemi	113	Nordöstra Savolax	13	North Savo
858	Tusby	11	Helsingfors	25	Helsinki and Uusimaa
859	Tyrnävä	171	Uleåborg	18	North Ostrobothnia
886	Ulvby	43	Björneborg	4	Satakunta
887	Urjala	63	Södra Birkaland	6	Pirkanmaa
889	Utajärvi	173	Oulunkaari	18	North Ostrobothnia
890	Utsjoki	197	Norra Lappland	21	Lappi
892	Uurainen	131	Jyväskylä	14	Central Finland
893	Nykarleby	154	Jakobstadsregionen	16	Vaasa
895	Nystad	24	Nystadsregionen	3	Southwest Finland
785	Vaala	173	Oulunkaari	18	North Ostrobothnia
905	Vasa	152	Vasa	16	Vaasa
908	Valkeakoski	63	Södra Birkaland	6	Pirkanmaa
92	Vanda	11	Helsingfors	25	Helsinki and Uusimaa
915	Varkaus	114	Varkaus	13	North Savo
918	Vemo	24	Nystadsregionen	3	Southwest Finland
921	Vesanto	115	Inre Savolax	13	North Savo
922	Vesilahti	64	Tammerfors	6	Pirkanmaa
924	Vetil	161	Kaustby	17	Central Ostrobothnia
925	Vieremä	111	Norra Savolax	13	North Savo
927	Vichtis	11	Helsingfors	25	Helsinki and Uusimaa
931	Viitasaari	138	Saarijärvi-Viitasaari	14	Central Finland
934	Vindala	146	Järvisetu	15	South Ostrobothnia
935	Vederlax	82	Kotka-Fredrikshamn	8	Kymenlaakso
936	Viridis	69	Övre Birkaland	6	Pirkanmaa
941	Vårdö	213	Ålands skärgård	0	Åland
946	Vörå	152	Vasa	16	Vaasa
976	Övertorneå	193	Tornedalen	20	Länsi-Pohja
977	Ylivieska	177	Ylivieska	18	North Ostrobothnia
980	Ylöjärvi	64	Tammerfors	6	Pirkanmaa
981	Ypäjä	53	Forssa	5	Kanta-Häme

Municipality		Sub-Region		Hospital District	
Number	Name	Number	Name	Number	Name
989	Etseri	144	Kuusiokunnat	15	South Ostrobothnia
992	Äänekoski	135	Äänekoski	14	Central Finland

B.2 Appendix II: Comprehensive Timeline of All Domestic Covid - 19 Policies in 2021

Timeline ⁴:

20201227,20210125: Note, that all are planned to be vaccinated, but it is currently only rolled out for two groups: According to a Government Decree (22 December 2020), the vaccinations are first offered to social and health care professionals who treat COVID-19 patients and to people who work and live-in nursing homes or housing services for the elderly. Most of these vaccinations will be carried out in January–February 2021. The vaccine will then be offered to elderly persons and to those with diseases that predispose them to severe coronavirus disease. After that, the vaccine will be offered to the rest of the population. It is still unclear when the vaccine can be offered to everyone willing to be vaccinated because the schedule mainly depends on the marketing authorisations and the availability of the vaccines.

20210126,20210223: Vaccination of some sub-groups from Group 2 begins as Residents of Uusimaa aged 85 or over can now reserve appointments to receive the coronavirus vaccine through a new website. The municipal vaccination schedule is based on the guidelines of the National Institute for Health and Welfare (THL). Some municipalities in Uusimaa will begin vaccinating residents aged 80 and above, while others will start by vaccinating people over the age of 85. In Espoo, mass vaccinations will begin with people over 85 years of age well as their carers living at the same address. Some elderly residents living in nursing homes have already been vaccinated. For residents of Helsinki aged 85 and over, as well as carers living with them, coronavirus vaccinations will begin on 1 February. This official website states that the following groups were eligible in January 2021, and the ones which were yet to become eligible: 2.1. Elderly and people with underlying conditions predisposing to severe coronavirus disease 2.1.1. All people aged 80 and over, including carers living in the same household and the elderly Vaccinations for the group have begun in January 2021. According to current estimates, the majority of the group has been vaccinated by the end of March 2021. 2.1.2. All 75-79 year olds, including carers living in the same household and the elderly Vaccinations for the group are expected to begin in mid-February 2021. According to current estimates, the majority of the group will have received the vaccine by the end of April 2021. 2.1.3. All aged 70-74, including carers living in the same household and the elderly Vaccinations for the group are expected to begin in mid-March 2021. 2.1.4. People under 70 years of age with a disease that is highly susceptible to severe coronavirus disease Vaccinations have not yet begun. 2.1.5. People under the age of 70 with a disease predisposing to severe coronavirus

⁴Source: "Covid-19 Government Response Tracker", *University of Oxford*, accessed via <https://github.com/OxCGRT/covid-policy-tracker> on 16/05/2022

disease Vaccinations have not yet begun. 2.2. Other personnel exposed to the coronavirus and other key personnel in terms of health carrying capacity Vaccinations have not yet begun. 3. Other adult population Vaccinations have not yet begun.

20210126,20210223: The Government decided on Finland's vaccination order by adopting a Decree on 22 December 2020. The Finnish Institute for Health and Welfare recommends that COVID-19 vaccinations are offered to different groups in the following order: 1. Health care personnel caring for coronavirus patients as well as personnel and residents in round-the-clock care facilities 1.1 Personnel in intensive care units 1.2 Personnel in inpatient wards and emergency wards treating diagnosed or suspected COVID-19 patients and emergency care personnel 1.3 Personnel at infectious diseases clinics treating diagnosed or suspected COVID-19 patients, COVID-19 testing personnel, and laboratory personnel involved in COVID-19 diagnostics 1.4 Personnel and residents in social services for residential care and enhanced institutional, round-the-clock care units (groups 3 and 4 may be vaccinated simultaneously) 1.5 A limited number of critical personnel in social welfare and health care, for example, personnel in organ transplant units 2.1 The elderly, and persons with underlying conditions that predispose to severe COVID-19 2.1.1. 80-year-olds and older, including carers and elderly living in the same household 2.1.2. 75–79-year-olds, including carers and elderly living in the same household 2.1.3. 70–74-year-olds, including carers and elderly living in the same household 2.1.4. 16-69-year-olds with a highly predisposing condition for severe COVID-19. Highly predisposing conditions for severe COVID-19 disease include, for example, severe chronic kidney disease, severe immunosuppressive condition (organ transplant, acute cancer treatment) and severe chronic pulmonary disease. 2.1.5. 18-69-year-olds with a predisposing condition for severe COVID-19. Predisposing conditions for severe COVID-19 include, for example, coronary artery disease and cirrhosis of the liver. 2.2 Social welfare and health care personnel 3. Others

20210224,20210307: Coronavirus vaccinations of 75–79-year-old Helsinki residents begins

20210308,20210330: Over 70s eligible for vaccination in Helsinki

20210308,20210330: As of 13 March 2021, all those aged 12 or over must wear a face mask when using HSL public transport. The only acceptable reason for not wearing a mask is if you are unable to do so for medical reasons.

20210331,20210408: Coronavirus vaccination of individuals aged 18-44 susceptible to

severe COVID-19 begins in Helsinki.

20210409,20210418: THE GOVERNMENT is making changes to the coronavirus vaccine schedule. It will be permanently changed as regards the order of vaccination of age groups. On 16 April, the Government amended the decree on voluntary COVID-19 vaccinations. The decree will enter into force on 19 April 2021. Once vaccines have been given to the three main priority groups — people at risk, older people and healthcare and social welfare workers caring for COVID-19 patients — the rest of the population will be vaccinated by age group. Vaccines will be administered in descending order as follows: - 60–69-year-olds - 50–59-year-olds - 40–49-year-olds -30–39-year-olds - 16–29-year-olds.

20210419,20210425: Coronavirus vaccinations of 60–64-year-old Helsinki residents begins.

20210426,20210429: Coronavirus vaccinations of 55–59-year-old Helsinki residents begins

20210430,20210506: Coronavirus vaccinations of 50–54-year-old Helsinki residents begin

20210430,20210506: Coronavirus vaccinations begin for Helsinki residents aged 45–49.

20210528,20210603: Covid vaccinations begin for Helsinki residents 35-39 yrs.

20210601,20210627: Code changed to 4G as regions are now vaccinating broad groups may include a large group of adults (eg. all those aged over 45). Espoo - As of Tuesday 1 June, coronavirus vaccination appointments are available to Espoo residents who turn 35–39 this year (i.e. those born between 1982 and 1986). Helsinki - Coronavirus vaccinations begin for Helsinki residents aged 30–34 Central Ostrobothnia - everyone over the age of 30 in Soite's area and 16-64-year-old persons who belong to risk group 1 or 2 and have an illness or condition that is very highly or highly predisposing to severe coronavirus disease. East Savo - Vaccination is now open for those aged 45 and over and for risk groups 1 and 2 from the age of 16. Aaland – Vaccinating 45 years and older and 16 years and older and belongs to the risk group.

20210602,20210730: Cancel public events,1,1,"From 2nd June regions generally are permitting events in different sizes depending on the municipality mostly due to gradua-

tion parties. While areas like Kainuu have no restrictions on number of people at events, regions like Helsinki and central Ostrobothnia a maximum of 10 people indoors for events. Helsinki and Espoo - All public events and meetings held indoors or outdoors will be prohibited for a limited time. However, 1–22 June 2021 public events and meetings of a maximum of 10 participants will be allowed indoors and similar gatherings of a maximum of 50 people will be allowed in delineated outdoor areas. Private events are recommended, as of 1 June 2021, to be limited to a maximum of ten people indoors a maximum of 50 people outdoors. Central Ostrobothnia - the number of participants at public events and public gatherings is limited to 10 people indoors. Outdoors, the restriction is 50 people. These regulations regarding gatherings are in effect from 2nd of June to 15th of June 2021. Southern Finland - Public and private events and general meetings of more than 10 people indoors and more than 50 people outdoors in regionally restricted areas are prohibited. Kainuu - No restrictions concerning number of attendants in public meetings or events.

20210604,20210613: Vaccinations begin for those in Helsinki aged 30-35yrs.

20210609,20210613: Vaccine Prioritisation,8799,,"THE GOVERNMENT is making changes to the coronavirus vaccine schedule. It will be permanently changed as regards the order of vaccination of age groups. On 16 April, the Government amended the decree on voluntary COVID-19 vaccinations. The decree will enter into force on 19 April 2021. Once vaccines have been given to the three main priority groups — people at risk, older people and healthcare and social welfare workers caring for COVID-19 patients — the rest of the population will be vaccinated by age group. Vaccines will be administered in descending order as follows: - 60–69-year-olds - 50–59-year-olds - 40–49-year-olds -30–39-year-olds - 16–29-year-olds.

20210611,20211031: Stay at home requirements,1,0,"***Recoded to reflect that Lapland no longer recommends working from or staying home. Previous coding note - The authorities recommend working remotely to the extent possible in both the public and private sectors. Current national telework recommendation is in effect until June 30 and applied in almost all regions. However on 11 June, the Lapland (LSHP Corona Coordination Group) Stated that there are no longer any epidemiological grounds for the telework recommendation in the Lapland Hospital District.

20210614: Soite - for everyone over the age of 16 in Soite's area. Helsinki - Coronavirus vaccinations begin for Helsinki residents aged 25–29. Espoo - Espoo residents who turn 25 this year or are older than 25, i.e. residents born in or before 1996. And Risk groups 1 and 2: (determined by THL): Persons aged 16–69, i.e. people born between 1952 and 2005. Eastern Savo - Appointment is now open For those 18 years of age and older and THL risk groups 1 and 2 from the age of 16. Aaland – right now vaccinating 35 years and

older and 16 years and older that belongs to the risk group.

20210614,20210702: Soite - for everyone over the age of 16 in Soite's area. Helsinki - Coronavirus vaccinations begin for Helsinki residents aged 25–29. Espoo - Espoo residents who turn 25 this year or are older than 25, i.e. residents born in or before 1996. And Risk groups 1 and 2: (determined by THL): Persons aged 16–69, i.e. people born between 1952 and 2005. Eastern Savo - Appointment is now open For those 18 years of age and older and THL risk groups 1 and 2 from the age of 16. Aaland – right now vaccinating 35 years and older and 16 years and older that belongs to the risk group.

20210628: Vaccines are generally available to people of 16yrs and above.

20210701,20210830: Gyms are now open in Helsinki and Espoo.

20210703,20211227: Generally, vaccines are available for 16 years and older and Children aged 12–15 who belong to the risk group. Aaland - 16 years and older and Children aged 12–15 who belong to the risk group. COVID-19 vaccinations in South Karelia are administered to persons aged 16 years or older and persons aged 12–15 who belong to a risk group 1 or 2. zfaES East Savo - vaccination can now be reserved for anyone over the age of 16 and older. In addition, people over the age of 12 who are at risk are vaccinated. Central Ostrobothnia - for everyone over the age of 16 and 12-15-year-old adolescents who belong to risk group 1 or 2 in Soite's area.

20210731,20210927,C3: Cancel public events,1,0,"Events are generally permitted, however, certain restrictions differ and are made by the regional government agency of the particular area. However, large gatherings can be arranged if hygiene and safety instructions are followed.

20210831,20211031: The authorities recommend extensive remote work in both the public and private sectors in all areas where the epidemic is in the acceleration or community transmission phase.

20210928,20211114: Restrictions on gatherings,0,"At present, there is no assembly restriction decisions issued by the regional government agency in any region. Municipalities can decide on restrictions on gatherings in their areas. However, in areas where there is no existing restriction on gatherings, the organization of events and occasions requires

that their safety be ensured in accordance with the hygiene requirements laid down in Article 58c of the Communicable Diseases Act.

20211101,20211201: The Nationwide Telework recommendation has ended, however, workplaces can continue to combine teleworking and physical/present work.

20211101: The Nationwide Telework recommendation has ended, however, workplaces can continue to combine teleworking and physical/present work.

20211115,20211227: In the area of the Hospital Districts of Southern Ostrobothnia and Central Ostrobothnia, an indoor event of up to of 100 people may be held, if: 1) there are auditoriums where no seating is provided for all participants, or 2) there are joint singing events belonging to public events. Other types of public events and general meetings are allowed. The organizer of the events described above may introduce a corona passport as an alternative to the existing corona restrictions, in which case the passport will allow admission to events and activities.

20211130,20211204: Public events are allowed, however, restrictions are based on the municipalities/region where the event is held.

20211202,20220227: Workplace closing,1,0,"The Nationwide Telework recommendation has now been reintroduced in areas currently experiencing increased levels of community transmission. The recommendation is for all employees in the public sector to work remotely as extensively as possible if their duties so allow. The Government also recommends that private employers adopt similar extensive remote work practices, recognising, however, that workplaces will determine how to combine in-office and remote work in a way that ensures health security.

20211205,20211229: In the Helsinki and Uusimaa Hospital District, Southern Finland, all indoor public events and general meetings are prohibited. Restrictions cannot be waived by using a corona passport. In other districts public events limited to max. 50 people. No limit if attendees have a Coronavirus Passport.

20211228,20220131: In the Helsinki and Uusimaa Hospital District, Southern Finland, all indoor public events and general meetings are prohibited. Restrictions cannot be waived by using a corona passport.

20211228,20220124: From 28 Dec 2021: The Finnish Government has approved mandatory COVID vaccines for Healthcare workers and social care workers (healthcare and staff in elderly care homes captured).

20211230,20220124: In the Helsinki and Uusimaa Hospital District, Southern Finland, all indoor public events and general meetings are prohibited. Restrictions cannot be waived by using a corona passport Also, from 30-Dec-21, and with effect until 20-Jan-22, the coronavirus passport can no longer be used as an alternative to avoid restrictions on meetings or gatherings in most hospital districts.

Source: "Covid-19 Government Response Tracker", *University of Oxford*, accessed via <https://github.com/OxCGRT/covid-policy-tracker> on 16/05/2022