Coronagraben in Switzerland: Culture and social distancing in times of COVID-19 *

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Abstract

Social distancing measures help contain the spread of COVID-19 but the actual compliance has varied substantially across space and time. We ask whether cultural differences underlie this heterogeneity using mobility data across Switzerland between February and December 2020. We find that German-speaking cantons decreased their mobility for non essential activities significantly less than the French-speaking cantons. However, we find no such significant differences for the bilingual cantons. Contrary to the evidence in the literature, we find that within the Swiss context, high trusting areas exhibited a lower decline in mobility. Additionally, cantons supporting a limited role of the state in matters of welfare also displayed a lower mobility reduction.

Keywords: COVID-19, culture, social distancing, trust, redistribution, mobility

JEL Codes: H12, Z1, D91

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1 Introduction

Following the initial outbreak in China, in early January 2020, COVID-19 rapidly spread across all regions of the world, achieving a pandemic status. Flattening the contagion curve became a priority in many countries in an attempt to reduce the load on the healthcare system and the overall mortality rate. Several countries enacted shelter-in place and social distancing measures to reduce interpersonal contact and mobility in order to curb transmission. This was often implemented through massive "stay at home" media campaigns aimed at altering citizen habits. While the health measures enacted have been, by and large, homogeneous across countries, compliance to these rules varied widely with the local context. In the absence of perfect enforcement capacity by the states, cultural attitudes and behavioral norms, which typically vary from country to country, can make an important difference and explain deviations in voluntary compliance. This is all the more true when it comes to individual mobility decisions, which entails a delicate trade-off between the chance of contracting (or diffusing) a disease and the economic (and individual well being) costs associated to significant alterations of daily activities.

Recent literature cites several key factors that may underlie individual compliance to engage in social distancing[1]. Cultural values and social contact patterns have previously been shown to be a crucial factor behind the transmission and risk of disease (Dressler (2004); Borg (2014)). Can there be a role for cultural biases in the spread of pandemics? We study how cultural values and beliefs may play a role in the evolution of individual mobility under COVID-19 measures. Examining various dimensions of culture we focus our analysis on Switzerland, which provides a unique case study due to its native language groups which are shared by the adjoining countries. These distinct linguistic geographical areas have deep historical roots and are associated with specific cultural traits. An example that highlights this is the colloquial name for the border between the French and German speaking region, called Röstigraben. *Rösti* refers to a hashed potato dish which originated in the canton of Bern and is typical of Swiss German cuisine, and *Graben* means a trench or division. The intensity of the COVID-19 pandemic has varied substantially between the Swiss regions and the divide around the spread of the virus has been defined by some observers as a *Coronagraben*, in reference to the cultural border.

We add to the literature by focusing on a set of cultural dimensions and mechanisms that might have shaped the actual adherence to social distancing in Switzerland between February 15 and December 31, 2020. More precisely, first we examine the relationship between change in human mobility for retail and recreational activities, capturing compliance, and language as a proxy for culture. Then to further investigate this link, we also explore the role of specific set of cultural traits associated with the linguistic background - trust in others and preferences for re-distributive policies. As we are concerned with the entire course of the pandemic in 2020, our analysis focuses on four

[1] see Papageorge et al. (2021); Van Bavel et al. (2020); Ding et al. (2020); Ananyev et al. (2021)

important dates. The first is March 16, when the Swiss Federal Council declared an "extraordinary situation", instituting a ban on all private and public events and closing venues such as restaurants and bars. This was the only national intervention of this scale in Switzerland and was uniform across cantons. The second is April 27 which saw a gradual easing of measures followed by June 22 when all mobility restrictions were suspended. The final date is October 19, when the second wave was in progress and the cantons had begun to implement their own restrictions. We discuss the differences between the first and second lockdown in section 3.1, especially highlighting the fact that the latter was heterogeneous across regions and there was a lack of comparable intervention.

Isolating the effect of culture is difficult due to potential local confounding factors which may also have an independent effect on compliance and mobility. To tackle this we control for cantonal demographic, health and socio-economic characteristics prior to the pandemic and interact it with time dummies to address its effect on the evolution of mobility patterns beyond that of culture. In our empirical model, in addition to canton and day fixed effects, we also include region-week fixed effects to capture region specific non-linear time trends. We also control for potentially varying transmission of information between linguistic areas due to different degrees of exposure to neighbouring countries by including the number of cross-border workers based on their country of residence (France, Germany and Italy). Finally, to emphasize that the differential mobility response is not only due to varying pandemic exposure but also cultural differences, we include the daily new cases and deaths per capita.

Using this approach, we find that in the first nationally implemented lockdown cantons in the German linguistic region reduced their mobility by 7 percentage points *less* than the French speaking cantons: suggesting a lower compliance with federal policies of social distancing and isolation. These differences disappeared over the subsequent months when lockdown policies were relaxed. However, the second wave of the pandemic saw them resurfacing with a similar 7 percentage points difference, although this can be in part attributable to the lack of a homogeneous federal intervention and regionally varied lockdown approach. On the contrary, for the bilingual cantons which provide an interesting middle ground between two extremes, we did not observe any strongly significant differences. Upon further analysis of distinct cultural traits we find surprising results which are at odds with the current literature on trust and compliance: mobility decline was less pronounced in high trusting areas. For cantons in the top quartile of the trust distribution, reduction in mobility during the federal lockdown was *lower* by 7 percentage points than the the rest, and these differences continued into the ensuing phase of easing measures. Similarly, we also find that cantons with low preference for redistribution, reflecting an anti-state stance exhibited about 6 percentage points *lower* decline than the rest in the national lockdown.

We interpret our results within the context of Switzerland where the German linguistic region is characterized by high levels of generalized trust towards others and individualistic values. A combination of these cultural traits alter the trade-off behind individual decision on mobility. Reducing

mobility becomes less relevant as an instrument to reduce the probability of contracting (or diffusing) the disease if one believes that other individuals in society will respect, among other things, physical distance and other infection prevention and control norms (IPC), thus making mobility reduction less relevant. In a sense, physical distancing replaces social distancing. Moreover, in these cantons, reducing individual mobility due to government imposition could be perceived as a sacrifice of a taller order than in more collectivist regions. Our results stress the fact that the same cultural traits can evoke varying responses under a crises such as a pandemic and therefore understanding the country specific context is crucial to policy implementation.

Our work contributes to a growing body of studies linking cultural variables, social distancing, and the spread of COVID-19 (Durante et al. (2021); Barrios et al. (2021); Borgonovi and Andrieu (2020); Brodeur et al. (2021); Bargain and Aminjonov (2020)). Our results build on these papers and encapsulate some of their findings while also showing the distinctiveness of the Swiss context. Mazzonna (2020) similarly utilizes the cultural variation in Switzerland to see its effect on the spread of COVID-19, highlighting the role of elderly demographic in its growth. Complementing his results, we focus on the role of interpersonal trust and re-distributive preferences in explaining the differential compliance during the pandemic and find our results to be consistent with one another.

The remainder of the paper is organized as follows. Section 2 presents our conceptual framework, discussing the cultural differences in Switzerland. Section 3 gives a background on the COVID-19 emergency in the country and describes the data used for our analysis. Section 4 presents our empirical and identification strategy and section 5 discusses the results. Lastly, section 6 concludes.

2 Culture and its dimensions

We first clarify what we mean by *culture*. We follow the definition proposed by Guiso et al. (2006), where *culture* is defined as a set of "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation". We focus on language as a proxy for culture and further look at two specific dimensions or traits and explain their place in the context of Switzerland.

There is a large literature linking culture and language which builds on *The Sapir–Whorf hypothesis* emphasizing that the language one speaks influences the way one perceives the world. This hypothesis is a culmination of several early contributions by anthropologists that explored this link and whose work on cultural relativism further highlighted that language and culture were interdependent [2]. Several studies have shown that an examination of cultural groups can be engaged

[2] see van Humboldt (1836), Mandelbaum (1951), Whorf (1956), Sapir (1968) and Boas (1982)

by language since it has an impact on identity, values, attitudes and behaviour. More recently works of economists such as Bisin and Verdier (2011) and Ginsburgh and Weber (2020) show that the notion of a common native language is inextricably linked with cultural proximity. This goes beyond language proficiency and ability to speak and in fact captures the vertical and horizontal transmission of values.

Generalized trust: One of the most commonly defined cultural trait is generalized trust towards others, the beliefs held about others' trustworthiness. Alesina and La Ferrara (2002) hypothesize that this belief is a moral or cultural attitude and is positively correlated with individual characteristics such as the level and type of education received and occurrence of recent misfortunes. They also show the importance of community characteristics such as high income inequality which often leads to low interpersonal trust. From the early work of Arrow (1972), who recognized the importance of mutual trust in commercial and noncommercial transactions, the relation between generalized trust and economic development is well established (Algan and Cahuc (2014); Butler et al. (2016)). It is important to note that this differs from the concept of trust in institutions, which may simply be capturing the efficiency or corruption of the government in power.

Preferences for redistribution: Alesina and Giuliano (2011, 2015) define preferences for redistribution as a situation in which one agent also cares about the utility of somebody else. They reject the notion of these preferences being unpredictable "social noise" and highlight the role of culture as an important determinant. Views on inequality and redistribution emphasize both the *value* and *belief* component of culture. Different cultures may have distinct approaches in contrasting the merits of equality versus individualism and luck versus hard work. Moreover, an individual's predisposition to support a welfare state may also be determined by cultural traits such as perception of poverty and fairness. These values and attitudes are significantly persistent and tend to remain fairly stable over time and generations (Luttmer and Singhal (2011); Li and Liu (2019)).

2.1 Why Switzerland?

Switzerland provides an excellent case study where language is a very apt proxy for culture (Büchi (2001)). There are seven greater regions containing twenty-six cantons, as seen in Figure A.2. Switzerland has four official languages having equal status in law - German, French, Italian and Romansh. According to the 2000 census, German is spoken by 63.7% of the population, French by 20.4%, Italian by 6.5%, and Romansh by 0.5%. Three cantons - Valais, Fribourg, and Berne - are bilingual (French, German); and one canton - Graubünden - is officially trilingual (German, Romansh, Italian). From the remaining, seventeen are German speaking, four French speaking and one Italian speaking.

Looking at Figure 1, we observe that there are geographically distinct linguistic regions and these

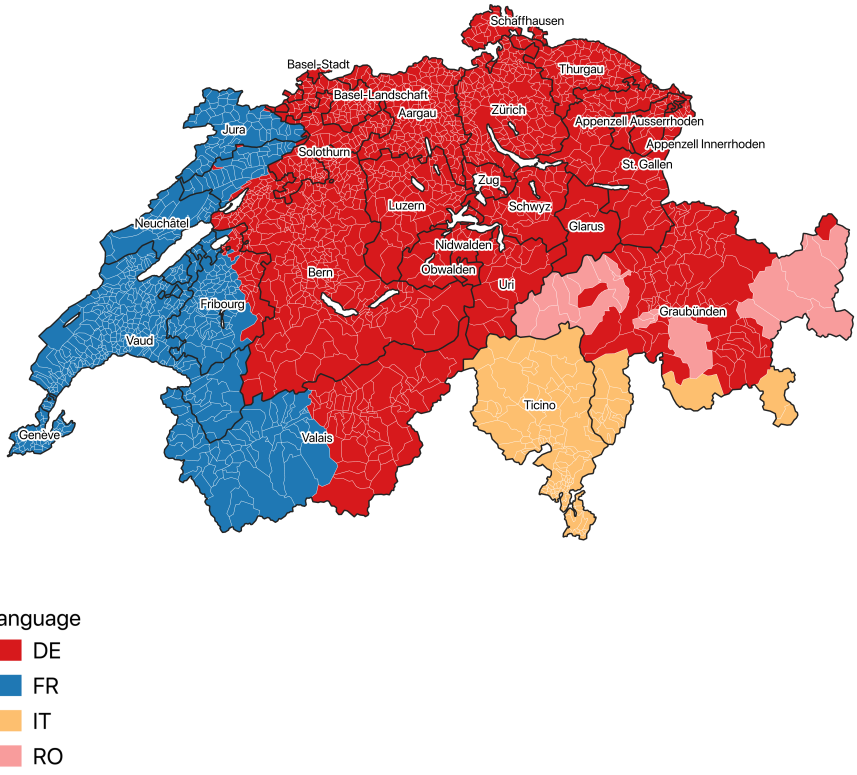


Figure 1: Language borders. DE: German FR: French IT: Italian RO: Romansh. The black lines represent cantonal boundaries and the white lines represent the municipal boundaries.

language borders in fact have deep historical roots. For instance with the exception of few minor movements, the early historical development of the German-French and German-Italian language boundaries have been relatively stable since AD 1100 (Büchi (2001)). Historically the border of the canton Valais traced along the border of the Roman-Catholic Diocese of Sion and most of the canton Graubünden was once part of a Roman province called Raetia, resulting in multilingualism. The linguistic borders are a measure of cultural values and beliefs manifested by means of differences in native languages. Therefore these explicit language regions can be thought of as pockets of different cultures and the *Röstigraben* exemplifies this fact. The language frontier manifests itself through different preferences in many aspects of political and economic decision-making thus providing an ideal context to study the effects of culture[3].

3 Background and data

3.1 COVID-19 in Switzerland

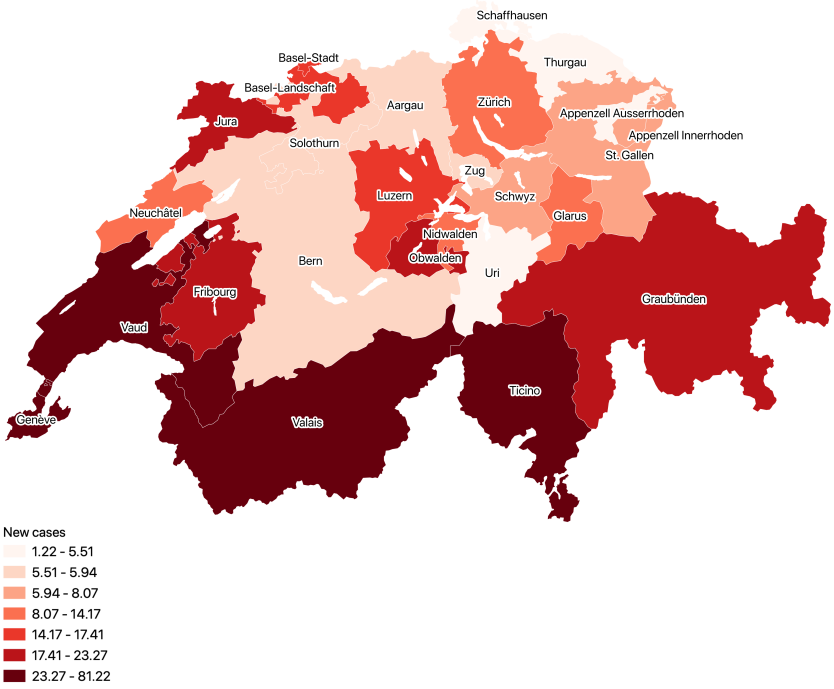
The first case of COVID-19 in Switzerland was confirmed on 25 February 2020: a 70-year-old man tested positive in Ticino, followed by a second case on February 26 in Geneva. Due to its proximity to Lombardia, Ticino took early restrictive measures while the only rule imposed on the remaining cantons was a relatively moderate step taken by the federal government - to raise the alert level to "special situation" by banning events with more than 1,000 people.[4] However, by mid March the country was particularly affected by the epidemic, the increase in confirmed cases accelerated with the reproductive number oscillating between 1.5 and 2 (Sciré et al. (2020)). With more than 2,600 people infected, there was a need to mobilise up to 8,000 members of the military to help contain the rapid spread of the disease, representing the largest army mobilisation since the Second World War. This was the turning point for Switzerland and on March 16 the the Swiss Federal Council declared an "extraordinary situation", instituting a ban on all private and public events and closing restaurants, bars, leisure facilities and shops apart from grocery stores and pharmacies. Although the government did not refer to this as a lockdown, an "extraordinary situation" is the most severe status contemplated under the law and equates to a state of emergency[5], therefore for the purposes of the rest of the paper we refer to this as the *national lockdown*.

The first stage of relaxing the restrictions began on April 27 and the progressive easing of measures continued up until June 22. Following a widespread plateauing of cases (and incidence), the sum-

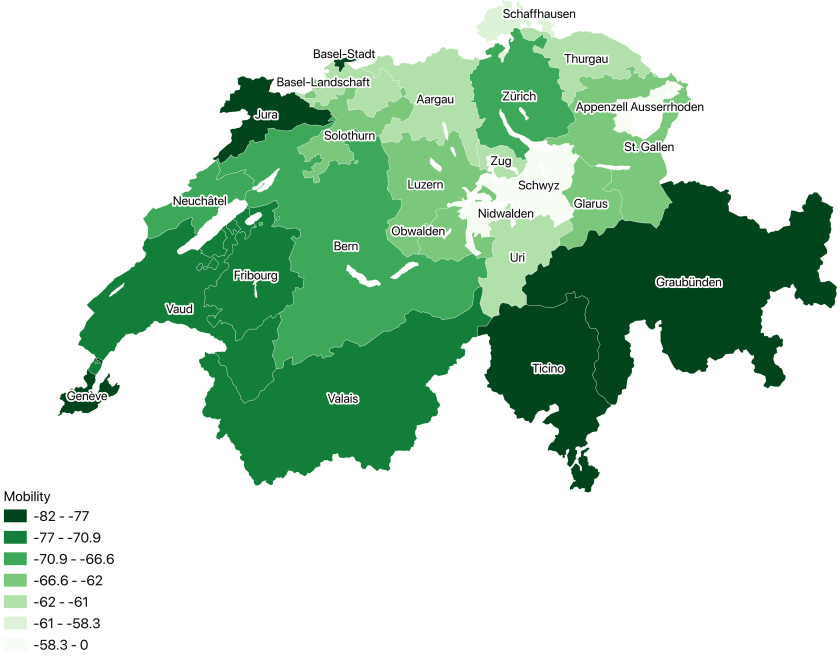
[3]Several works of public economics and trade exploit this unique variation in languages within Switzerland (Eugster et al. (2017), Athias and Wicht (2014), Egger and Lassmann (2015) and Eugster and Parchet (2011)).

[4]This included football and ice hockey championships, carnivals in Basel and Lucerne, the Geneva Motor Show and Baselworld watch fair.

[5]It allows the Federal Government to order all necessary measures for parts of or the entire country, including the right to overrule measures that were ordered by cantons and to deviate from all existing Federal laws.



(a) New COVID-19 cases per 100,000 inhabitants



(b) Change in mobility: Retail & Recreation

Figure 2: Cantonal distribution of COVID-19 cases and mobility patterns on March 27, 2020

mer months saw the federal government order a full suspension of mobility restrictions, while the pandemic remained under control as in the rest of Europe. However, by early October the cases began to surge indicating the arrival of the second wave. On November 2, there were more than 1,060 cases per 100,000 inhabitants over a 14-day period. Switzerland became one of the hardest-hit countries and the contrast with its neighbours was striking: five times higher than Germany, and two times higher than Italy. Despite this the Federal Council decided not to intervene to the extent of the first wave and left the cantons in charge of implementing their measures. This resulted in large inconsistencies between cantonal responses (Meyer (2020); Swissinfo (2020)). For example, while Jura, Fribourg, Vaud, Neuchâtel and Geneva implemented strict restrictions on bars, restaurants and festivals; in the neighbouring German-speaking cantons many cafes, leisure and entertainment venues continued to remain open. Therefore the second wave saw a heterogeneous response compared to the national intervention in March. Figure 3 shows a timeline of these events and the five periods which are the focus of our empirical analysis[6].

Coronagraben? The intensity of the COVID-19 pandemic has varied substantially in the country. This is especially true for the first wave when an invisible border divided Switzerland during the crisis: the French-and Italian-speaking parts had been significantly more affected than the German-speaking areas. This linguistic divide around the spread of the virus has been defined as *Coronagraben* in reference to the cultural and political Röstigraben. This is evident in Figure 2a where the variation in pandemic exposure is consistent with the language borders seen in Figure 1. Correspondingly Figure 2b maps the mobility patterns across cantons and one can easily observe that the reduction in mobility was higher in the French and Italian speaking parts of Switzerland as compared to the German speaking cantons. Although the second wave did not display such stark differences, regional variations continued to dominate the country, with the Swiss Romandy (Vaud, Neuchatel, Geneva, Jura Fribourg and Valais) being a COVID-19 hotspot in October and November (Figure A.3a). Interestingly the *Coronagraben* was also observed within bilingual cantons, for instance in Fribourg the two German-speaking regions of the canton had the lowest incidence compared to the rest (Tombez and Ibarrola (2020)).

3.2 Data

Social distancing: We use Google COVID-19 Community Mobility Report, which is created with aggregated, anonymized sets of data from users who have turned on location history[7]. The data measures how visits to (or time spent in) different types of location change over time compared to a baseline period, which is the median value for the corresponding day of the week during January 3–February 6, 2020. The reports chart mobility trends over time by geography, across different categories of places such as retail and recreation, groceries and pharmacies, parks, transit stations,

[6]For a detailed timeline of the measures implemented by the Federal Office of Public Health refer to their website.
[7]https://www.google.com/covid19/mobility/

workplaces, and residential. We use the community mobility measure "Retail and Recreation" between February 15 and December 31. It is the percent change between a given day and the baseline, spent in places like restaurants, cafes, shopping centers, theme parks, museums, libraries, and movie theaters. The mobility trends of this measure captures the behavioural response to the magnitude of the pandemic and the compliance with the government measures, which may in effect vary with cultural traits.

Culture: Using language as a proxy for culture, we categorize each canton as (i) French (ii) German and (iii) Bilingual [8] We also use an alternative and continuous measure of language: percentage of the permanent resident population with German (or Swiss German) as their main language[9]. Data regarding official cantonal language and distribution is available on the website of the Swiss Federal Statistical Office (FSO). To measure cultural dimensions we use the Swiss Household Panel (SHP) which is a longitudinal survey of a random sample of private households whose members represent the non-institutional population resident in Switzerland (Voorpostel et al. (2020)). The principal aim of SHP is to observe social change, dynamics of living conditions and social representations in the population.

To assess generalized trust towards others, we use wave 20 which covers the year 2018. The survey elicits beliefs by asking - *Would you say that most people can be trusted or that you can't be too careful in dealing with people, if 0 means "Can't be too careful" and 10 means "Most people can be trusted"?* Averaging the intensity of trust across cantons, we classify a canton as "High trust" if is above the 75^{th} percentile. Correspondingly, to capture views on preferences for redistribution, we use wave 19 covering the year 2017[10]. The survey asks individual opinion on the direction of federal social expenditure - *Are you in favour of a diminution or in favour of an increase of the Confederation social spending?* Using the share of respondents in each canton who are in favour of a diminution, we classify cantons as "High diminution" if they fall in the top quartile.

Other variables: To distinguish the effect of culture from other factors, we also include a set of social, economic and health controls at the cantonal level. Accounting for COVID-19 exposure and infection risk, we control for the number of new cases and deaths per 100,000 inhabitants, reported on the day before. To capture the quality of the health system and vulnerability to the pandemic, we use data on the number of hospital beds per 1000 inhabitants and the share of population older than 65, representing the at-risk individuals. Our specification also includes trust in federal institutions, population density, share of urban population, GDP per capita, share of population that has completed tertiary education and log of total population. Switzerland's economy relies

[8] Within the bilingual category we also include Graubünden which is technically trilingual. For our main analysis we drop Ticino as it is the only Italian speaking canton in Switzerland, thus limiting our scope to the remaining twenty-five cantons. However, in the appendix Table A2 we replicate our main results by including Ticino in our sample and find the results to remain consistent.

[9] Main language is defined as one in which individuals think or speak best, according to their indication.

[10] We use different waves as not all modules are repeated annually.

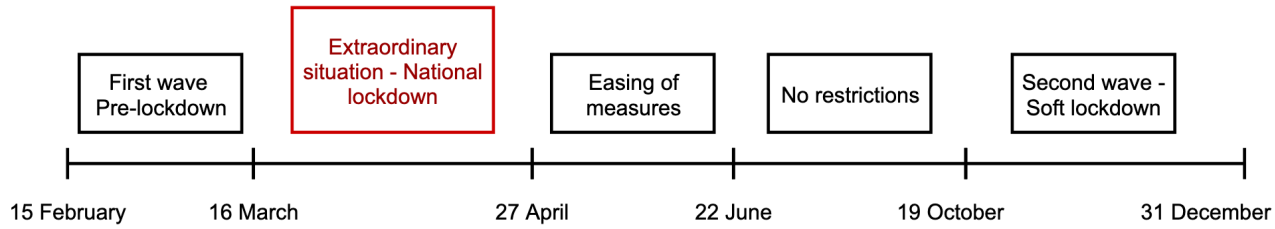


Figure 3: Phases of the COVID-19 pandemic in Switzerland in 2020

heavily on cross-border workers – known as frontaliers in French, Grenzgänger in German and frontalieri in Italian[11]. Even during the national lockdown, the government ensured they were allowed to enter. Therefore we control for this by using canton-quarterly data on the number of cross-border workers per 100,000 inhabitants, based on their country of residence: France, Germany and Italy. The data on daily COVID-19 statistics is taken from the website corona-data.ch, which uses official information communicated by the cantons and Federal Office of Public Health. The remaining data is publicly available on the FSO website. Summary statistics are provided in Table A1.

4 Empirical strategy

4.1 Graphical evidence

Figure 4 and A.1 visualize the relationship between mobility and linguistic regions using raw data. Figure 4 shows the evolution of daily percentage change in mobility for retail and recreation in cantons which are bilingual (in green), French speaking (in blue) and German speaking (in orange). Using the French speaking cantons as our reference, Figure A.1 shows how the difference in mobility between the three linguistic groups evolved over time. In the weeks prior to March 16, cantons in all three linguistic regions displayed approximately similar mobility patterns. However, after the government declared an "extraordinary situation" one can distinctly observe a divergence. During the national lockdown there was a marked drop in mobility across cantons, however, the decline was notably smaller for German speaking cantons as compared to French and bilingual. In the next two phases, the difference between French and German becomes less significant while the bilingual cantons continue to diverge often displaying a higher mobility reduction than the the rest. The final phase, which saw the rise of the second wave and the implementation of a softer and regionally heterogeneous lockdown, once again highlighted the German speaking regions disparate response to the COVID-19 measures. To test more formally for the casual effect of culture on mobility, we

[11]For example in Geneva around 60% of the city's health workers live in France. In Ticino, one in five healthcare workers lives over the border in Italy.

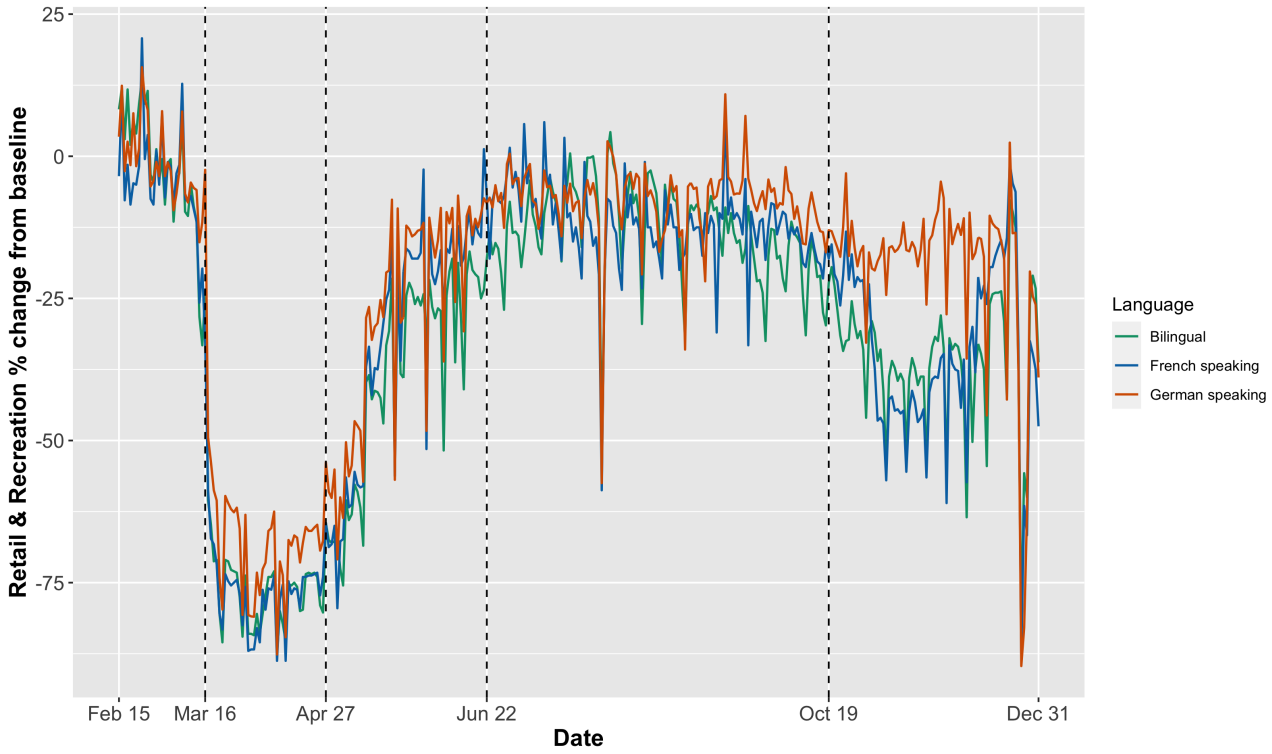


Figure 4: Evolution of daily mobility measure (Retail & Recreation) across the linguistic regions. Dashed lines indicate the different phases in our sample

discuss our econometric specification in the next section.

4.2 Econometric model

To identify the effect of culture on social distancing we estimate the following:

$$\begin{aligned} m_{ct} &= \beta \text{ Language}_c \times \mathbf{D}_t + \delta_1 \text{ New cases}_{c,t-1} + \delta_2 \text{ New deaths}_{c,t-1} + \\ &\quad \gamma \, \mathbf{Z}_c \times \mathbf{D}_t + \lambda \, \mathbf{X}_{ct} + \alpha_c + \theta_t + \phi_{rw} + \epsilon_{ct} \end{aligned} \tag{1}$$

m_{ct} is the daily Google mobility measure: " Retail and Recreation" for a given canton c on day t. Language$_c$ is a categorical variable with cantons being classified as: Bilingual, German and French. $\mathbf{D}_t$ is a vector of time dummies indicating the five phases of the pandemic as seen in Figure 3: (i) February 15 - March 16: Pre - Lockdown; (ii) March 16 - April 27: National lockdown; (iii) April 27 - June 22: Easing of measures; (iv) June 22 - October 19: No restrictions and (v) October 19 - December 31: Soft lockdown. Our main coefficient of interest is β on the interaction between Language$_c$ and $\mathbf{D}_t$. This captures the differential evolution of mobility in cantons with different languages, as a proxy for culture, over the different phases of the pandemic.

New cases$_{c,t-1}$ and New deaths$_{c,t-1}$ represent the new COVID-19 cases and deaths per 100,000 reported in the canton up until day $t-1$ and capture the degree of exposure and urgency to comply with social distancing measures. To isolate the effect of culture and to control for factors that maybe correlated with it and may affect the change in mobility we include $\mathbf{Z}_c \times \mathbf{D}_t$ which are the interactions between the time dummies and health, demographic and socio-economic controls; and $\mathbf{X}_{ct}$ which is a vector of French, German and Italian cross border workers per capita for each canton. The specification includes a rich set of fixed-effects: θ_t daily fixed effects to account for common time trends such as the information available to all citizens affecting the common evolution of mobility. The canton fixed effects α_c absorb all differences in the mobility measure across cantons due to time-invariant characteristics. Finally, to further strengthen the identification we also include ϕ_{rw} region×week fixed effects. These control for non-linear time trends specific to each of the regions, capturing weekly regional variation in compliance measures through the sample period.

The identifying assumption for (1) comes from the fact that after controlling for canton observable and unobservable time invariant characteristics, daily changes in mobility at the national level, region-specific economic, social and policy changes over time and the severity of the pandemic at the cantonal level: the differential change in mobility in bilingual, German and French speaking cantons is unrelated to factors other than the ones explicitly controlled for. It is important to note that our aim is to identify how culture may have played a role in compliance and social distancing only during the national lockdown as it was homogeneous across cantons. While the remaining phases provide an interesting insight into how mobility patterns and social distancing behaviour unfolded, however, as their implementation was not uniform and elements of Swiss federalism came into play we believe they are indicative at best. Throughout the paper, standard errors are cluster bootstrapped at the canton level.

To further examine the role of distinct cultural dimensions, we estimate:

$$\begin{aligned} m_{ct} =& \tilde{\beta}\ \text{High trust}_c \times \mathbf{D}_t + \delta_1\ \text{New cases}_{c,t-1} + \delta_2\ \text{New deaths}_{c,t-1} + \\ & \gamma\ \mathbf{Z}_c \times \mathbf{D}_t + \lambda\ \mathbf{X}_{ct} + \alpha_c + \theta_t + \phi_{rw} + \epsilon_{ct} \end{aligned} \tag{2a}$$

$$\begin{aligned} m_{ct} =& \tilde{\tilde{\beta}}\ \text{High diminution}_c \times \mathbf{D}_t + \delta_1\ \text{New cases}_{c,t-1} + \delta_2\ \text{New deaths}_{c,t-1} + \\ & \gamma\ \mathbf{Z}_c \times \mathbf{D}_t + \lambda\ \mathbf{X}_{ct} + \alpha_c + \theta_t + \phi_{rw} + \epsilon_{ct} \end{aligned} \tag{2b}$$

In (2a) we explore the trait of generalized trust towards others where High trust$_c$ is an indicator variable that takes on a value of one if the canton is above the 75^{th} percentile of trust distribution and zero otherwise. Similarly (2b) investigates preferences for redistribution where High diminution$_c$ takes on a value of one if the cantonal share of respondents in favour of diminution of federal social expenditure is in the top quartile and zero otherwise.

Table 1: Main results

	Dependent variable:			
	Retail & Recreation			
	(1)	(2)	(3)	(4)
New cases per capita	−0.042***	−0.025***	−0.024***	−0.022***
	(0.010)	(0.007)	(0.007)	(0.007)
New deaths per capita	−1.822***	−1.490***	−1.682***	−0.584**
	(0.540)	(0.505)	(0.447)	(0.285)
Bilingual x National lockdown		−1.683	1.599	1.093
		(3.490)	(3.818)	(2.823)
German x National lockdown		**5.857****	**7.150****	**7.189****
		(2.606)	(3.104)	(3.661)
Bilingual x Easing of measures		−8.039	−3.296	−3.939*
		(5.193)	(3.852)	(2.129)
German x Easing of measures		2.567	4.552**	3.468
		(3.008)	(2.178)	(4.679)
Bilingual x No restrictions		−4.021	0.783	0.064
		(4.239)	(4.217)	(3.301)
German x No restrictions		2.269	5.738	3.453
		(3.346)	(3.550)	(5.390)
Bilingual x Soft Lockdown		−3.417	0.775	−0.994
		(5.254)	(4.104)	(2.051)
German x Soft Lockdown		11.595***	13.978***	7.244*
		(3.725)	(2.921)	(4.145)
Observations	6,047	6,047	6,047	6,047
Adjusted R^2	0.905	0.912	0.921	0.932
Canton + Daily FE	Yes	Yes	Yes	Yes
Health + Economic controls	No	No	Yes	Yes
Region x Weekly FE	No	No	No	Yes

The standard errors are wild cluster bootstrapped on cantons. *p<0.1; **p<0.05; ***p<0.01. Pre-lockdown and French are excluded as reference. The bilingual category includes Graubünden. Health and demographic controls: Hospital beds per 1000, share of population 65+, log(population), share of urban population, population density. Socio-economic controls: Trust in institutions, share of tertiary education, GDP per capita and cross-border workers per 100,000 inhabitants, based on their country of residence (France, Germany and Italy).

5 Results and discussion

Table 1 shows the main results from specification (1). In the first column, controlling for canton and day fixed effects, as a baseline we explore how the exposure to the pandemic itself may have influenced mobility. Not surprisingly, we find that the number of new COVID cases and deaths per capita, reported the day before, are significantly associated with reduced mobility. From column (2) onward we introduce our main interaction terms between language and phase time dummies. We find that all models, including the most rigorous specification in column (4) convey that during the national lockdown the mobility in German speaking region decreased *less* than the French speaking region by around 7 percentage points: suggesting that the German speaking cantons displayed lower compliance with federal policies of social distancing and isolation. On the contrary, during this phase the drop in mobility for bilingual cantons did not differ significantly from its French counterpart. These results are consistent with the visual inspection of Figure 4 and A.1a.

The following phase of easing measures saw the French-German mobility differences disappear while the bilingual cantons exhibited a weakly significant *higher* reduction in mobility by around 4 percentage points, suggesting that compared to the French speaking cantons they continued to voluntarily comply with social distancing measures. In general, however, over the course of the pandemic we do not find strongly significant differences for the bilingual group and this may be precisely due to the inter-cantonal asymmetries providing an interesting middle ground. While Fribourg and Valais have a larger share of French speakers, Bern and Graubünden are majority German speakers.

During the soft lockdown implemented to counter the second wave, the difference in mobility between German and French region becomes large and significant, as seen in column (2) and (3). This can be explained by regulatory differences and the more restrictive stance taken by the latter group of cantons. Once we account for region×week fixed effects, thus controlling for this variation to some degree, there is considerable decline in the coefficient's magnitude and significance. Table A3 in the appendix shows detailed results for the entire set of control variables. We observe that the presence of Italian cross-border workers is associated with reduced mobility which may be demonstrative of the anxiety and fear of Italy having been an epicentre of COVID-19 in Europe and also one of the hardest hit western country. In the latter phases of the pandemic, health infrastructure is associated with higher mobility and trust in institutions with lower mobility, but neither of them seem to affect adherence to mandatory restrictions during the national lockdown.

Figure 5 plots the coefficients of the interactions of Language_c with weekly time dummies and shows the average differences in weekly mobility between the German and French cantons over several phases of the pandemic. Prior to the national lockdown, there is no significant difference between the two linguistic groups but the divergence in mobility patterns becomes significantly

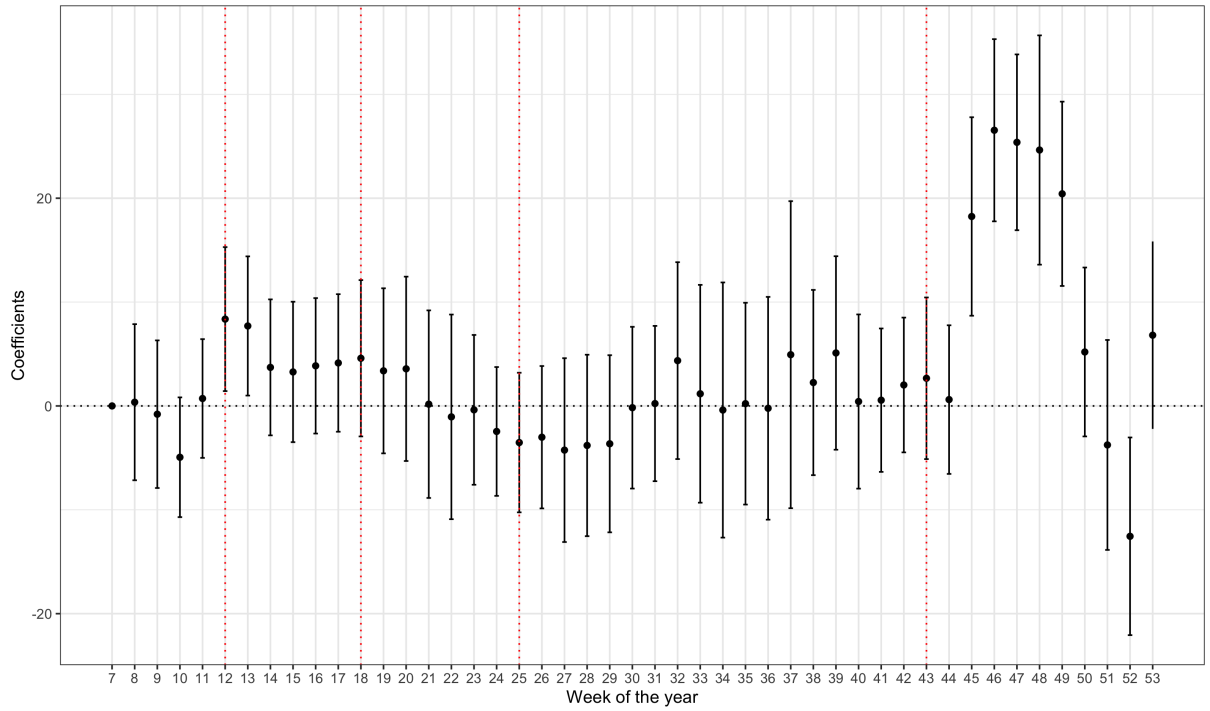


Figure 5: Difference in mobility between German and French speaking cantons. The national lockdown was implemented on the first day of Week 12 (March 16 - March 22).

positive after the Federal Council's declaration of an "extraordinary situation" and continues to remain significant up until week 13. Similar to our results, these differences seem to dissipate over the next two phases and resurface during the second lockdown.

Table 2 in column (1) explores the cultural trait of generalized trust towards others. The belief about others' trustworthiness, which also represents a widely used measure of civism and social capital, has been associated with cooperative and altruistic behavior (Brehm and Rahn (1997); Uslaner (2002)). Estimating specification (2a) we find that the interaction between high trust and the dummy for the period of national lockdown displays a positive and significant coefficient, with high trusting cantons exhibiting a 7 percentage points *lower* drop in mobility than the rest. High interpersonal trust may lead individuals in these cantons to believe that even while travelling, fellow citizens will behave responsibly by following physical distancing and hygiene rules. This belief therefore reduces the (perceived) benefit of limiting individual mobility as meeting strangers and acquaintances involves a relatively lower (perceived) risk of contracting and spreading the disease. Coherently, the subsequent phase which saw declining COVID cases and easing of measures led the positive difference in mobility to amplify due to the high trust that others will continue to follow the rules and adhere to individual responsibility. In Table A4 we provide the results along with the full set of controls and observe that trust in institutions, which is correlated with trust in others and captures the confidence in the efficiency of the government, has a sizeable effect on reducing mobility but only from May onward. Similar to our prior result, trust in institutions does not seem

to affect compliance to mandatory federal restrictions during the national lockdown.

Column (2) looks at preferences for redistribution which can reflect innate attitudes with respect to government intervention. It may emphasise beliefs and values about whether a state is responsible for the common good such as managing a health and economic crisis. Estimating specification (2b) we find that during the national lockdown, cantons with high share of individuals in favour of reducing social spending saw 6 percentage points *lower* decline in mobility than the rest. This could be due to their hesitancy to fully support a federal intervention as the population in these cantons is likely to be more uncomfortable with public decisions entailing severe limitations of personal liberties to preserve the social welfare. These traits are also consistent with a politically conservative affiliation. Additionally, since these cantons show low support for re-distributive policies, displaying a more individualistic culture, collective action of a coordinated pandemic response may have met with some degree of reluctance. Figure A.4a and A.4b show the average differences in weekly mobility for both these cultural indicators.

5.1 Robustness

To further confirm the important role of culture and emphasise the differences observed amongst the linguistic regions, we re-estimate specification (1) by taking a continuous measure of language which is the share of the cantonal population with German (or Swiss German) as their main language. Figure A.3e shows the distribution of this measure with French speaking cantons falling on the lower end of the scale. In column (3) of Table 2, we find that the interaction between % of German spoken and the dummy for national lockdown has a positive and significant coefficient. Correspondingly figure A.5a illustrates the average marginal effects indicating that particularly during the federal council's intervention, cantons with higher share of German as their main language displayed a *lower* decline in mobility compared to pre-lockdown.

Additionally, as a robustness check we make use of "The KOF Stringency Plus Index" which records the stringency of COVID-19 policy measures in Switzerland and in all cantons[12]. Similar to the Oxford stringency index, it provides daily indices and illustrates the level of lockdown policies over time and between cantons. The values range from 0 (= no measures) to 100 (= full lockdown). The national measures constitute the minimal level of implementation for every canton but they can introduce stricter measures if preferred. Figure A.3f shows the evolution of this index across cantons. We regress the mobility measure of retail and recreation of canton c at day t in the following different specifications:

[12]This data has been made freely available by KOF Swiss Economic Institute

$$m_{ct} = \mathrm{S} + \delta_1^S \text{ New cases}_{c,t-1} + \delta_2^S \text{ New deaths}_{c,t-1} + \lambda^S \mathbf{X}_{ct} + \alpha_c + \theta_t + \epsilon_{ct}$$

where

$$\mathrm{S} = (\beta_1^S + \beta_2^S \text{ Language}_c) \text{ Stringency}_{ct} \tag{3}$$

$$\mathrm{S} = (\beta_1^S + \beta_2^S \text{ High trust}_c) \text{ Stringency}_{ct} \tag{4}$$

$$\mathrm{S} = (\beta_1^S + \beta_2^S \text{ High diminution}_c) \text{ Stringency}_{ct} \tag{5}$$

Estimates in Table 3 confirm the robustness of our previous findings. Column (1) and Figure A.5b show that the difference in mobility between German and French speaking cantons is significantly positive and increasing for all levels of stringency. Additionally, the difference for bilingual cantons continues to be insignificant. Also consistent with our earlier results, we find a significant and positive coefficient for high trust and high diminution interaction terms. This suggests that while stringency certainly lowered mobility, the difference in reduction for high trust and high diminution was positive and increasing, indicating a reluctance to comply with COVID-19 measures.

5.2 Swiss context

Our results on the impact of high trust on compliance with national measures are at odds with recent work on civic capital and mobility. For example, Brodeur et al. (2021) show high trust American counties decrease their mobility significantly more than low-trust counties post-lockdown. However, our results highlighting the impact on compliance due to low preference for redistribution is broadly consistent with the findings of Bazzi et al. (2021) and Frey et al. (2020) who show that individualism and an anti-state stance hampered the response to COVID-19. In the American context, this was also strongly associated with Republican support as the party is against government intervention on multiple fronts.

A plausible explanation for our results may be due to the unique Swiss context where the German speaking cantons are characterized by a combination of high interpersonal trust, strong individualistic values and conservative political attitudes. It is of interest to note that many cantons within the German linguistic region are the stronghold of The Swiss People's Party also known as the Democratic Union of the Centre (SVP/UDC), which has consistently won the largest share of votes in the national council since 1999. Ideologically the party stands for the rejection of the expansion of the welfare state, lower taxation and was extremely critical and vocal during the pandemic to reopen the economy. A simple correlation matrix between the vote share of SVP, trust in others and the percentage of German as the main language, shows these elements to be highly and positively correlated (Figure 6), suggesting these cultural traits may have played a role in undermining policy

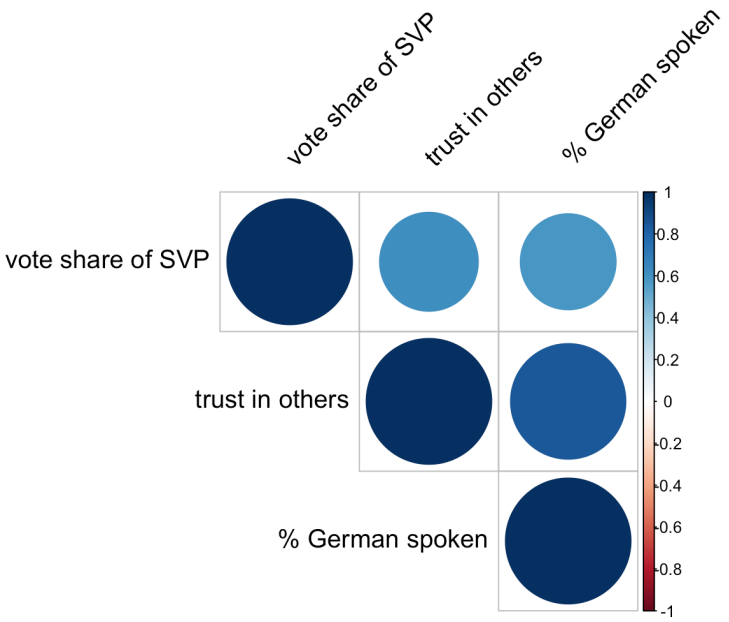


Figure 6: Correlation matrix

responses. These beliefs were also reflected in a recent public survey where a third of Swiss Germans declared that the closing of shops and establishments of personal services was too extreme, against only 18% of Swiss French[13]. Our results emphasizes the fact that the same cultural traits may elicit different responses under a crises situation such as a pandemic and that understanding the country specific context is crucial to policy implementation.

6 Conclusion

The success of non-pharmaceutical interventions undertaken to contain the spread of COVID-19 since the early stages of the pandemic has varied greatly across and within countries. This is particularly true for restrictive measures aimed at reducing individual mobility and inducing social distancing. Mobility has reduced almost everywhere, but voluntary compliance to government guidelines displayed huge variance across space and time. In this paper we ask whether different cultural heritages and characteristics underlie the observed heterogeneity.

We restrict our attention to Switzerland because it provides a unique case study from several points of view. Between February and December 2020, during the national lockdown, identical public health restrictions were enacted in distinct linguistic geographical areas with deep cultural and historical roots, while in the fall 2020 the level of stringency varied across regions. This allows us to gauge the importance of specific cultural traits, and of their interaction with the

[13]This survey was carried out by Sotomo research institute and more information can be found here.

stringency of restrictions, in explaining divergence in mobility patterns. We document how the Swiss reduced their mobility, first in response to the measures enacted by the federal government in March 2020, and later in the implementation of (mainly) cantonal restrictions introduced when the second wave of COVID-19 hit the country. Our results show that mobility in the German speaking areas of the country was generally less elastic to federal and cantonal restrictions than in French cantons. Compliance to social distancing was therefore weaker in German speaking Switzerland throughout the pandemic. We also investigate how specific cultural traits associated with the linguistic background can shape individual mobility decisions. We find that mobility reduction has been less pronounced in areas where individuals display high levels of trust in others and have a relatively low tolerance for state interventions in the economy. Overall, our results suggest that culture can mediate the social distancing process and that the costs and benefits associated with compliance changes with it.

Table 2: Cultural dimensions

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
New cases per capita	-0.024^{***}	-0.023^{***}	-0.022^{***}
	(0.008)	(0.008)	(0.007)
New deaths per capita	-0.651^{**}	-0.588^{**}	-0.563^{**}
	(0.297)	(0.289)	(0.269)
High trust x National Lockdown	**6.718****		
	(3.340)		
High trust x Easing of measures	11.659^{***}		
	(3.845)		
High trust x No restrictions	4.069		
	(4.085)		
High trust x Soft Lockdown	4.724		
	(5.192)		
High diminution x National Lockdown		**5.774*****	
		(1.538)	
High diminution x Easing of measures		-0.352	
		(2.380)	
High diminution x No restrictions		-0.467	
		(2.316)	
High diminution x Soft Lockdown		1.414	
		(2.627)	
% German spoken x National Lockdown			**0.108****
			(0.049)
% German spoken x Easing of measures			-0.011
			(0.038)
% German spoken x No restrictions			0.040
			(0.063)
% German spoken x Soft Lockdown			0.069^{*}
			(0.041)
Observations	6,047	6,047	6,047
Adjusted R^2	0.932	0.932	0.932
Canton + Daily FE	Yes	Yes	Yes
Health + Economic controls	Yes	Yes	Yes
Region x Weekly FE	Yes	Yes	Yes

The standard errors are wild cluster bootstrapped on cantons. *p<0.1; **p<0.05; ***p<0.01. Health and demographic controls: Hospital beds per 1000, share of population 65+, log(population), share of urban population, population density. Socio-economic controls: Trust in institutions, share of tertiary education, GDP per capita and cross-border workers per 100,000 inhabitants, based on their country of residence (France, Germany and Italy).

Table 3: Robustness - Stringency Index

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
Bilingual x Stringency	−0.026		
	(0.055)		
German x Stringency	**0.126*****		
	(0.047)		
High trust x Stringency		**0.083*****	
		(0.031)	
High diminution x Stringency			**0.082*****
			(0.012)
Stringency	−0.906***	−0.833***	−0.868***
	(0.189)	(0.199)	(0.214)
New cases per capita	−0.035***	−0.033***	−0.033***
	(0.009)	(0.010)	(0.010)
New deaths per capita	−1.585***	−1.763***	−1.852***
	(0.455)	(0.457)	(0.472)
Cross-border workers per capita (French)	−0.021*	−0.024*	−0.024**
	(0.013)	(0.013)	(0.012)
Cross-border workers per capita (German)	0.020	0.031	0.027
	(0.051)	(0.050)	(0.052)
Cross-border workers per capita (Italian)	−0.032***	−0.032***	−0.032***
	(0.003)	(0.003)	(0.003)
Observations	6,047	6,047	6,047
Adjusted R^2	0.911	0.909	0.910
Canton + Daily FE	Yes	Yes	Yes

Stringency refers to The KOF Stringency Plus Index. The values range from 0 (= no measures) to 100 (= full lockdown). The bilingual category includes Graubünden. The standard errors are wild cluster bootstrapped on cantons. *p<0.1; **p<0.05; ***p<0.01.

Declarations

Compliance with Ethical Standards:

No funding was received.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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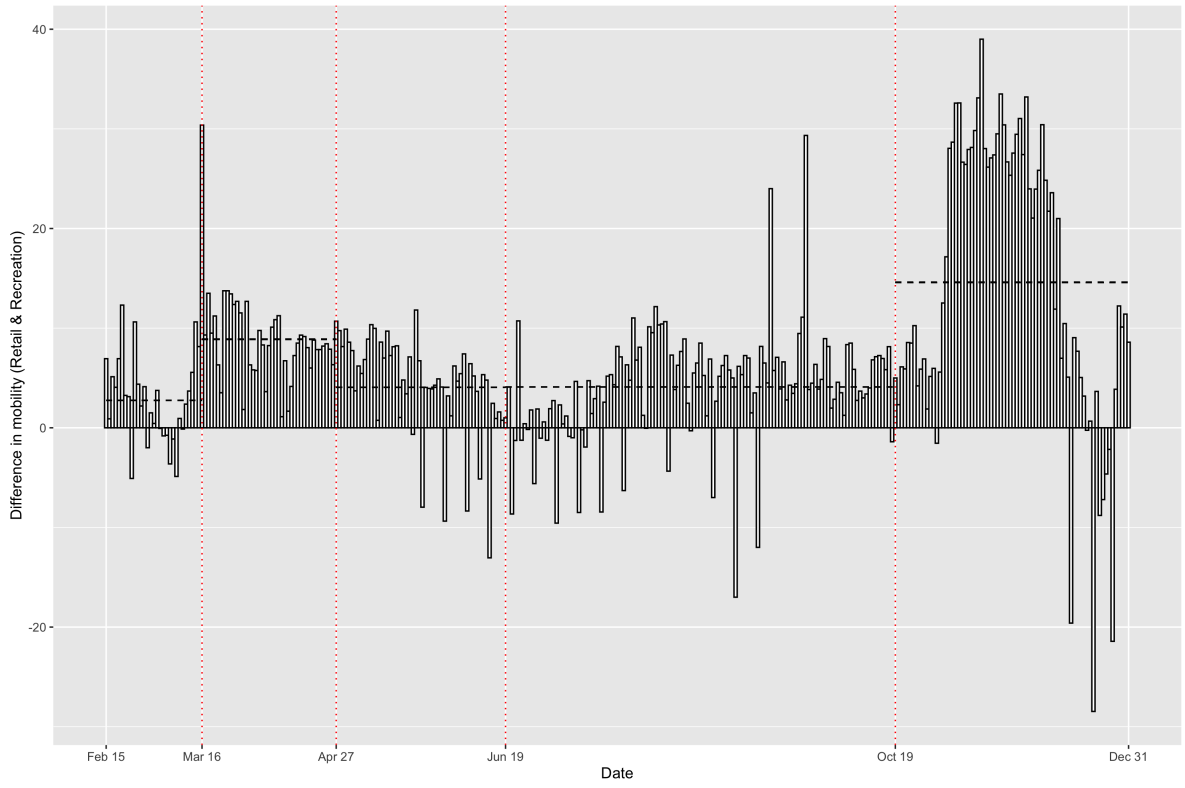
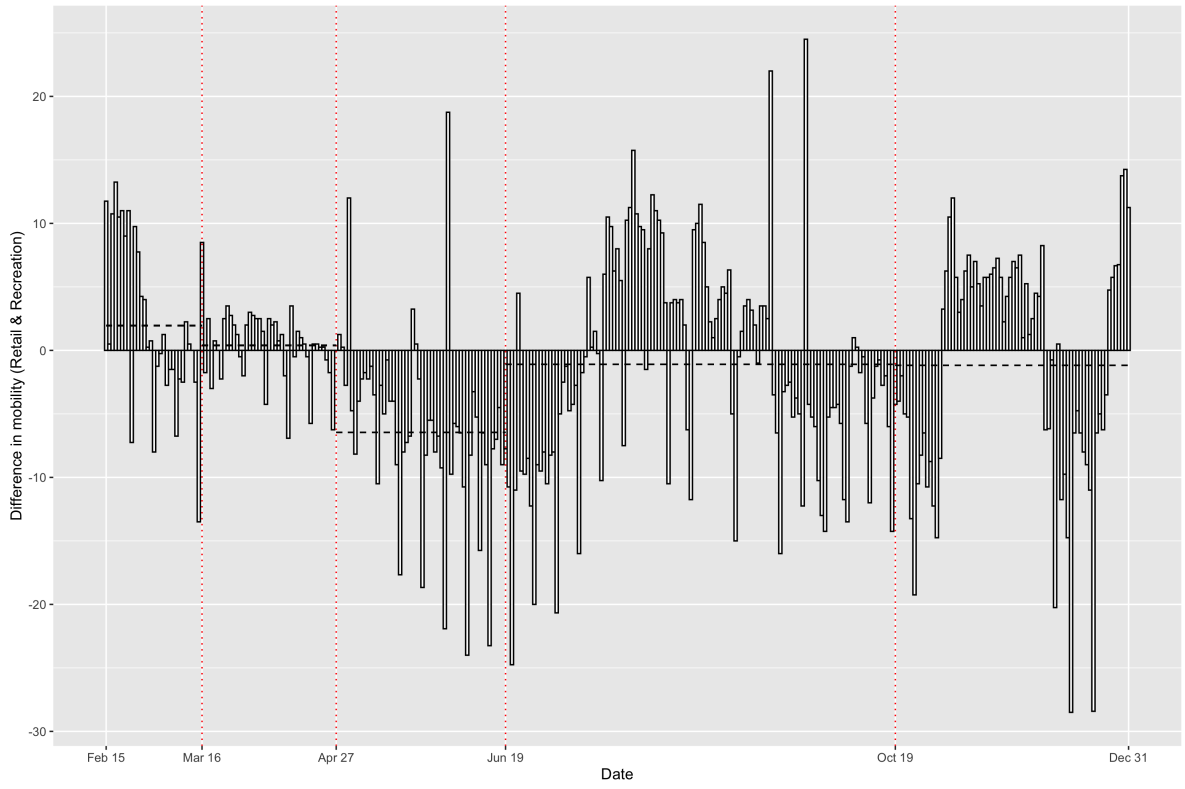
Table A1: Summary Statistics

Variable	Mean	Median	Std. Dev.	Min	Max
Retail & Recreation	-24.96	-16.00	26.63	-93.00	70.00
New cases per 100,000	16.68	2.21	31.45	0.00	283.31
New deaths per 100,000	0.30	0.00	0.85	0.00	18.58
French cross-border workers per 100,000	2380.61	60.53	4593.16	4.09	18092.69
German cross-border workers per 100,000	980.50	122.63	2007.44	5.29	8240.59
Italian cross-border workers per 100,000	187.01	16.10	682.34	0.00	3586.46
Trust in others	6.49	6.60	0.38	5.78	7.30
Trust in institutions	6.32	6.28	0.20	5.97	6.89
Share in favour of diminution	26.97	27.12	4.84	15.62	36.36
Share of Urban population	76.24	82.00	22.24	0.00	100.00
Share of 65+	18.93	19.10	1.72	15.70	21.90
Hospital beds per 1000	4.19	3.90	2.07	1.30	10.90
GDP per capita	82209.42	69860.00	33578.57	54291.00	203967.00
Population	340822.38	199021.00	357910.27	16128.00	1539275.00
Share of Tertiary education	31.97	30.90	6.17	22.80	45.30
Share of German as main language	68.44	86.90	32.71	4.50	93.80
Population density	550.92	246.30	1069.96	28.00	5300.20



(a)



(b)

Figure A.1: Difference in daily mobility (Retail & Recreation) using raw data (a) German and French speaking cantons (b) Bilingual and French speaking cantons. The horizontal dashed lines are the period means.

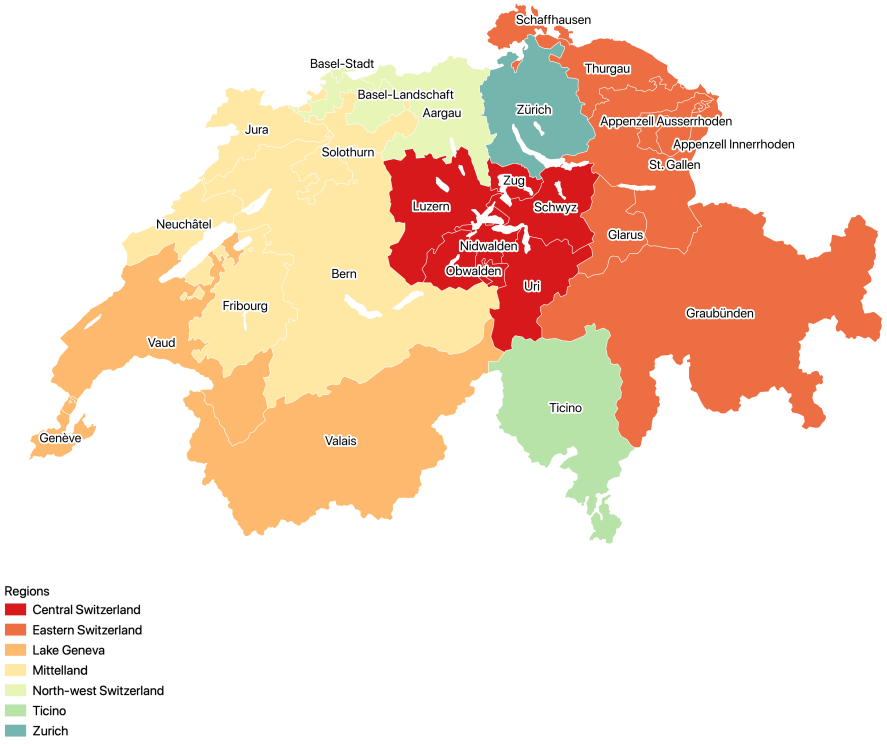
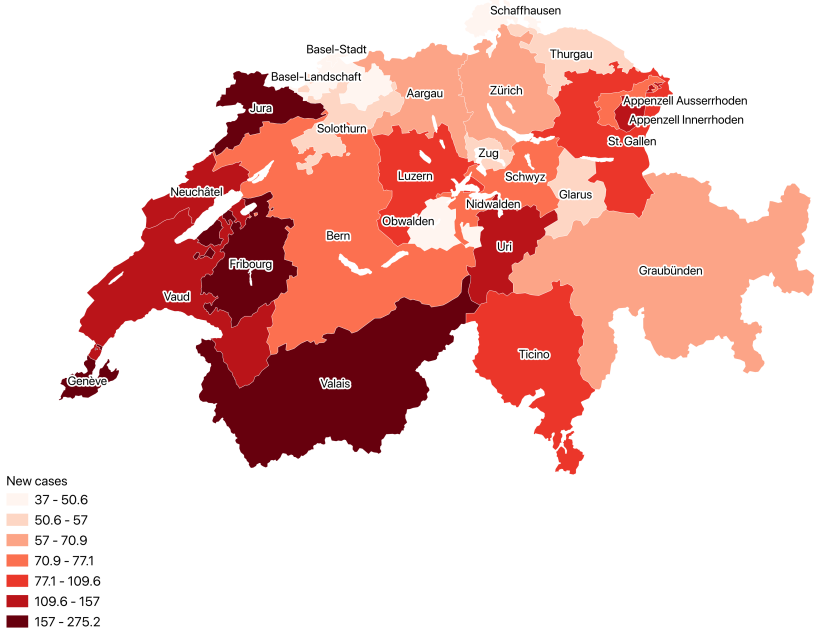
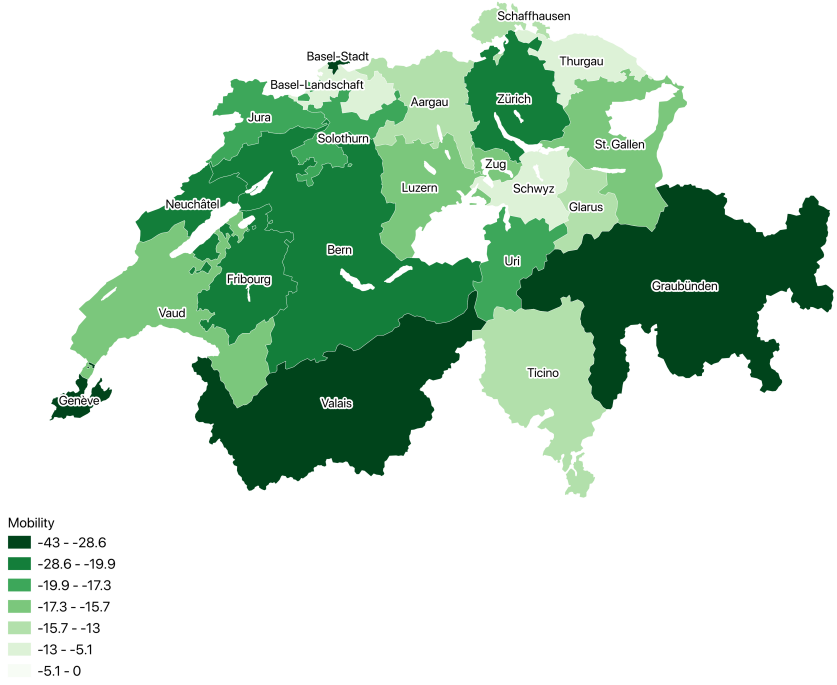


Figure A.2: Regions and cantons

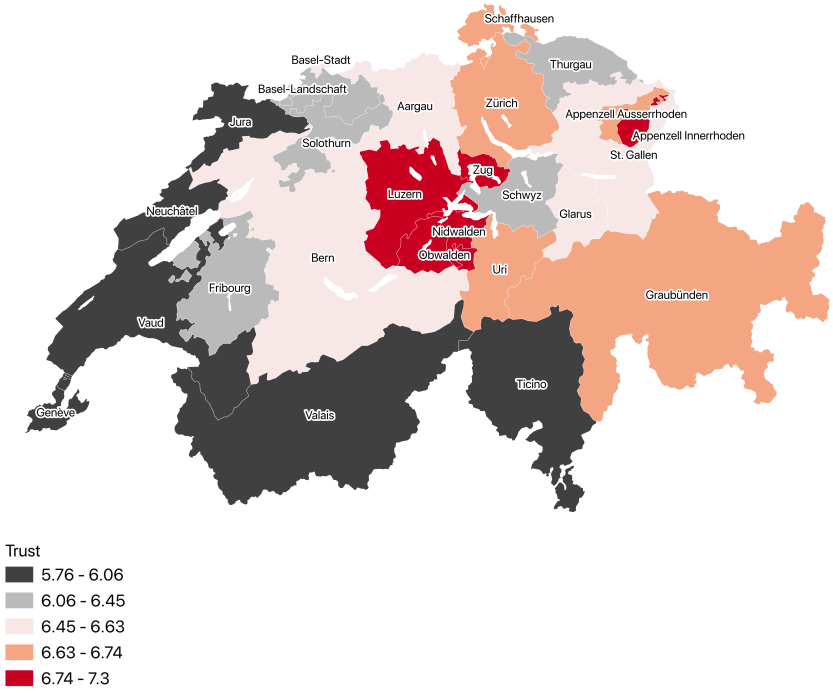


(a) New COVID-19 cases per 100,000 inhabitants

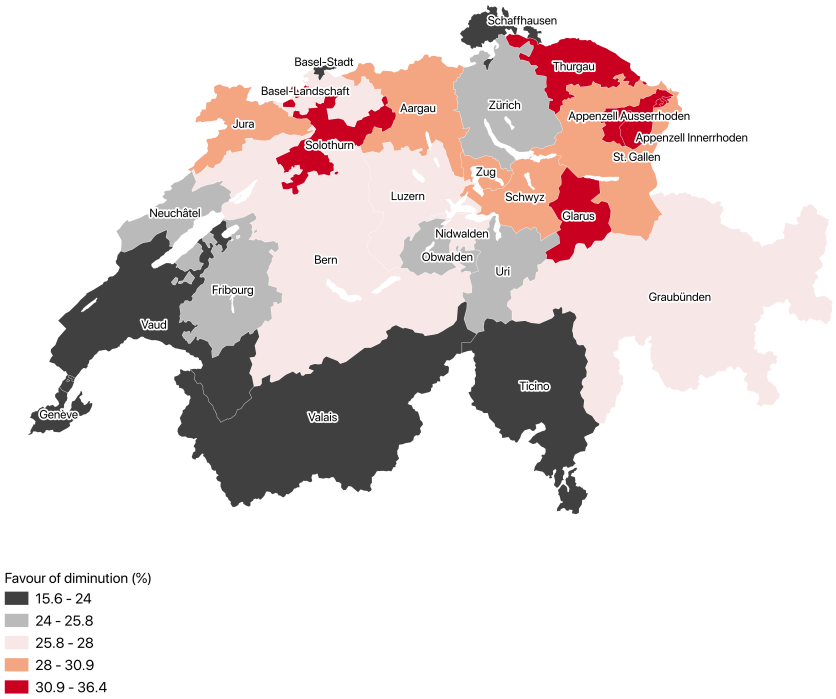


(b) Change in mobility: Retail & Recreation

Figure A.3: Cantonal distribution of COVID-19 cases and mobility patterns on October 30, 2020

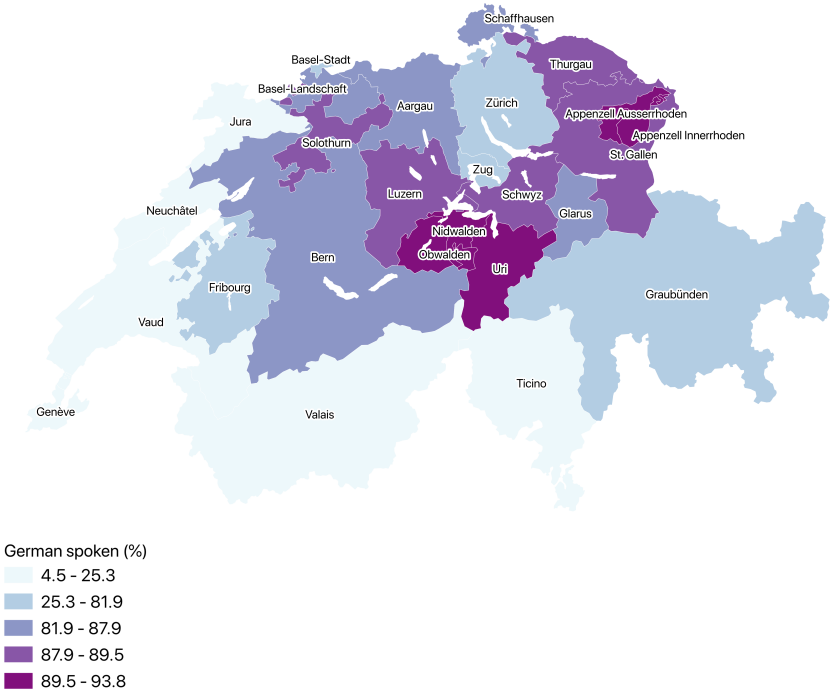


(c) Trust in others

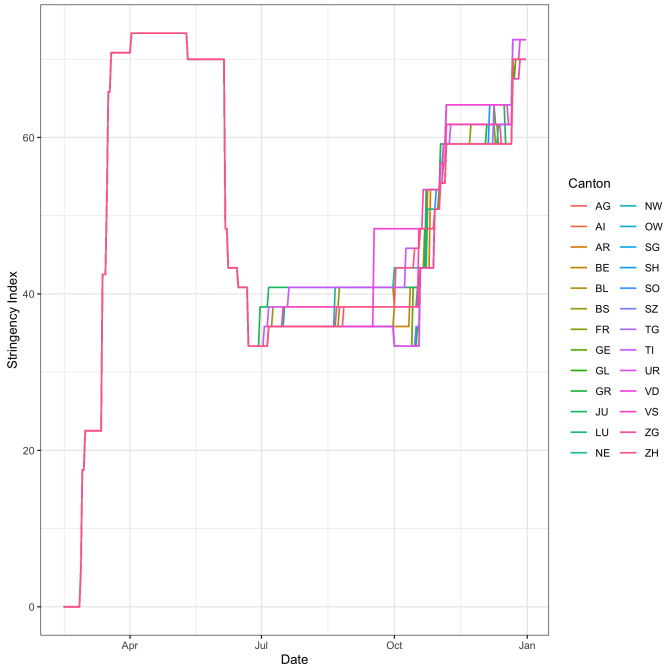


(d) Share in favour of a diminution of Confederation social spending

Figure A.3

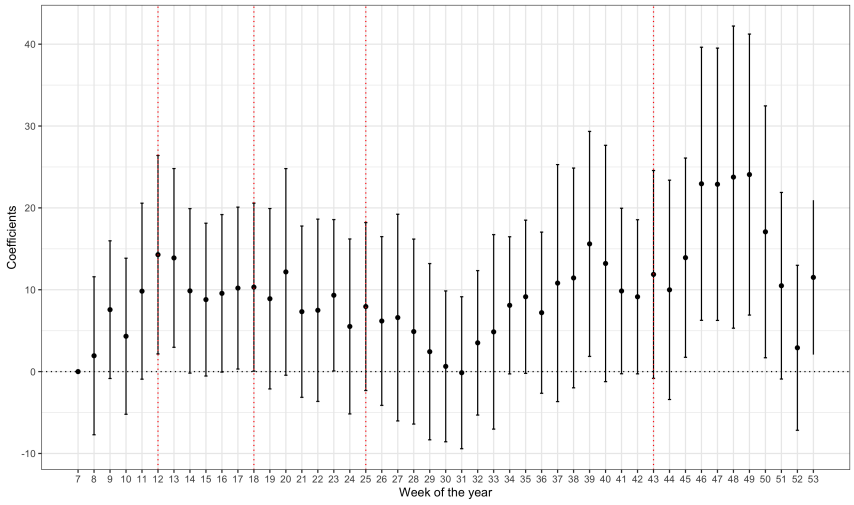


(e) % of population with German as main language

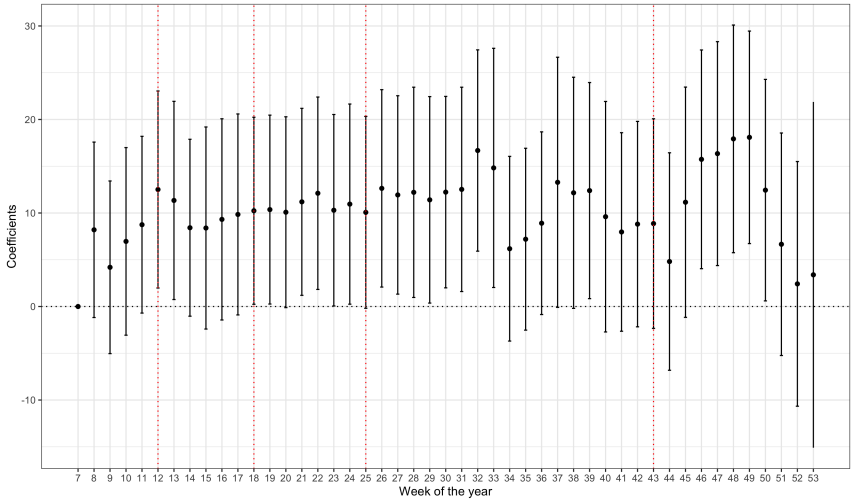


(f) The KOF Stringency Plus Index

Figure A.3

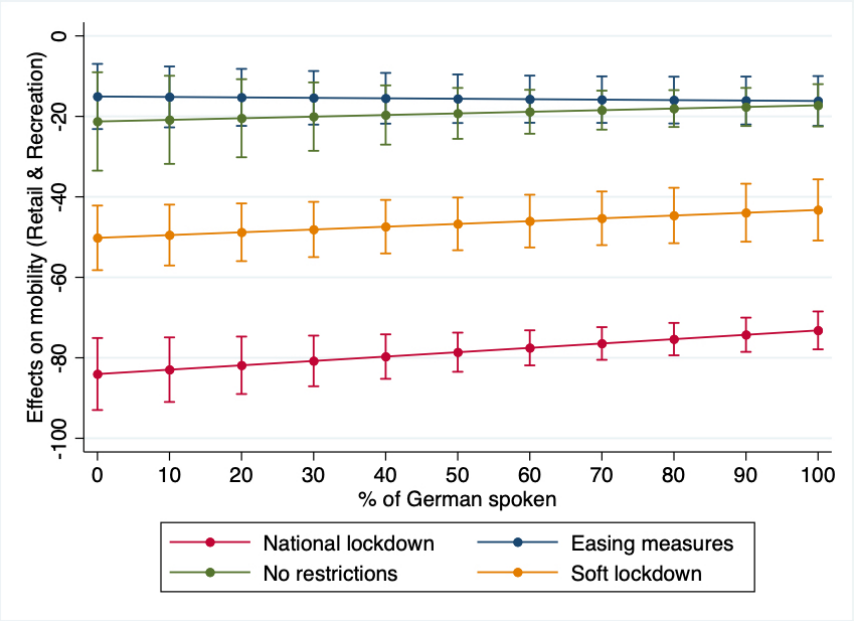


(a) Difference in mobility between high trusting cantons and rest. The national lockdown was implemented on the first day of Week 12 (March 16 - March 22).

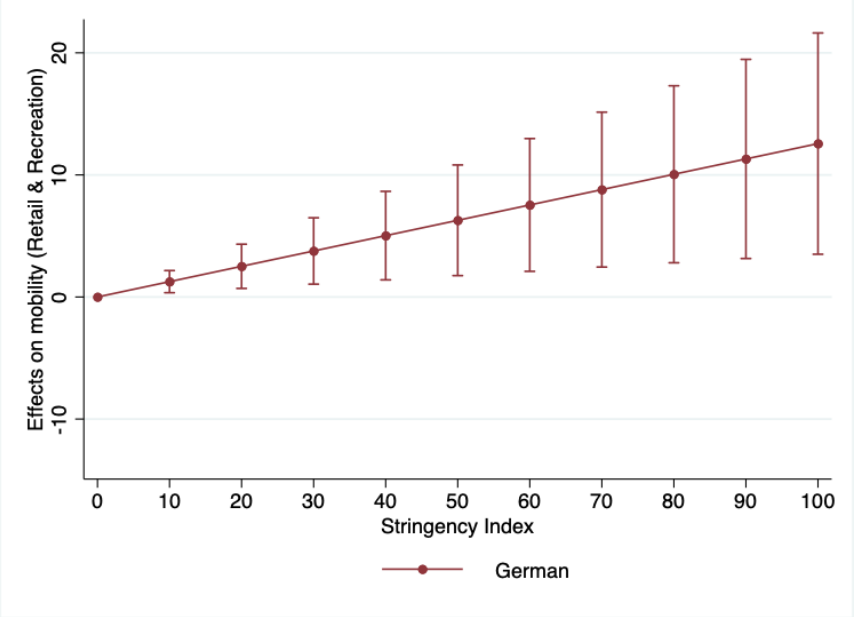


(b) Difference in mobility between high diminution cantons and rest. The national lockdown was implemented on the first day of Week 12 (March 16 - March 22).

Figure A.4



(a)



(b)

Figure A.5: Average marginal effects

Table A2: Including Ticino

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
New cases per capita	-0.020^{***}	-0.022^{***}	-0.021^{***}
	(0.008)	(0.008)	(0.008)
New deaths per capita	-0.553^{*}	-0.615^{**}	-0.556^{**}
	(0.294)	(0.296)	(0.282)
(Bilingual+Ticino) x National Lockdown	1.041		
	(2.821)		
German x National Lockdown	7.270^{**}		
	(3.299)		
(Bilingual+Ticino) x Easing of measures	-4.030^{**}		
	(2.026)		
German x Easing of measures	3.687		
	(4.776)		
(Bilingual+Ticino) x No restrictions	-0.106		
	(3.351)		
German x No restrictions	3.770		
	(5.405)		
(Bilingual+Ticino) x Soft Lockdown	-1.171		
	(2.021)		
German x Soft Lockdown	7.716^{*}		
	(4.565)		
High trust x National Lockdown		6.839^{**}	
		(3.372)	
High trust x Easing of measures		12.063^{***}	
		(3.877)	

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Table A2: (contd.)

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
High trust x No restrictions		5.121	
		(4.188)	
High trust x Soft Lockdown		6.374	
		(4.946)	
High diminution x National Lockdown			5.881***
			(1.616)
High diminution x Easing of measures			−0.090
			(2.482)
High diminution x No restrictions			−0.166
			(2.539)
High diminution x Soft Lockdown			1.754
			(2.762)
Observations	6,364	6,364	6,364
Adjusted R^2	0.934	0.934	0.934
Canton + Daily FE	Yes	Yes	Yes
Health + Economic controls	Yes	Yes	Yes
Region x Weekly FE controls	Yes	Yes	Yes

We include Ticino in our sample and replicate our results from specifications 1,2a and 2b. For linguistic classification we combine the Bilingual cantons and Ticino as one group. We redefine the dummy for high trust and high diminution based on the distribution of the relevant sample. Health and demographic controls: Hospital beds per 1000, share of population 65+, log(population), share of urban population, population density. Socio-economic controls: Trust in institutions, share of tertiary education, GDP per capita and cross-border workers per 100,000 inhabitants, based on their country of residence (France, Germany and Italy). Pre-lockdown and French are excluded as reference. The bilingual category includes Graubünden. The standard errors are wild cluster bootstrapped on cantons *p<0.1; **p<0.05; ***p<0.01.

Table A3: Results with full set of controls from Table 1

	Dependent variable:			
	Retail & Recreation			
	(1)	(2)	(3)	(4)
New cases per capita	−0.042***	−0.025***	−0.024***	−0.022***
	(0.010)	(0.007)	(0.007)	(0.007)
New deaths per capita	−1.822***	−1.490***	−1.682***	−0.584**
	(0.540)	(0.505)	(0.447)	(0.285)
Bilingual x National lockdown		−1.683	1.599	1.093
		(3.490)	(3.818)	(2.823)
German x National lockdown		5.857**	7.150**	7.189**
		(2.606)	(3.104)	(3.661)
Bilingual x Easing of measures		−8.039	−3.296	−3.939*
		(5.193)	(3.852)	(2.129)
German x Easing of measures		2.567	4.552**	3.468
		(3.008)	(2.178)	(4.679)
Bilingual x No restrictions		−4.021	0.783	0.064
		(4.239)	(4.217)	(3.301)
German x No restrictions		2.269	5.738	3.453
		(3.346)	(3.550)	(5.390)
Bilingual x Soft Lockdown		−3.417	0.775	−0.994
		(5.254)	(4.104)	(2.051)
German x Soft Lockdown		11.595***	13.978***	7.244*
		(3.725)	(2.921)	(4.145)
Cross-border workers per capita (French)			0.003	0.013
			(0.007)	(0.009)
Cross-border workers per capita (German)			−0.034	−0.043
			(0.057)	(0.044)

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Table A3: (contd.)

	Dependent variable:			
	Retail & Recreation			
	(1)	(2)	(3)	(4)
Cross-border workers per capita (Italian)			-0.034^{***}	-0.038^{***}
			(0.007)	(0.009)
Hospital beds x National lockdown			0.242	0.045
			(0.694)	(0.664)
Hospital beds x Easing of measures			1.929^{*}	3.718^{**}
			(1.025)	(1.778)
Hospital beds x No restrictions			4.425^{***}	6.469^{***}
			(1.165)	(1.477)
Hospital beds x Soft Lockdown			1.353	1.714
			(1.506)	(2.142)
% of pop. over 60 x National lockdown			-0.153	-0.124
			(0.462)	(0.389)
% of pop. over 60x Easing of measures			-0.685	-0.568
			(0.701)	(0.574)
% of pop. over 60 x No restrictions			-1.007^{*}	-0.740
			(0.568)	(0.480)
% of pop. over 60 x Soft Lockdown			0.909	0.808
			(0.700)	(0.568)
Trust in institutions x National lockdown			-5.067	-1.899
			(4.197)	(3.331)
Trust in institutions x Easing of measures			-22.887^{***}	-9.345
			(8.164)	(8.893)
Trust in institutions x No restrictions			-20.255^{***}	-11.944^{*}
			(5.936)	(6.180)

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Table A3: (contd.)

	Dependent variable:			
	Retail & Recreation			
	(1)	(2)	(3)	(4)
Trust in institutions x Soft Lockdown			-16.204^{**}	-10.333
			(7.883)	(6.883)
% of urban pop. x National lockdown			0.027	0.026
			(0.051)	(0.052)
% of urban pop. x Easing of measures			0.224^{**}	0.369^{*}
			(0.093)	(0.201)
% of urban pop. x No restrictions			0.071	0.257
			(0.077)	(0.161)
% of urban pop. x Soft Lockdown			0.006	0.105
			(0.092)	(0.189)
log(Population) x National lockdown			-1.564^{*}	-1.622^{*}
			(0.854)	(0.958)
log(Population) x Easing of measures			-1.505	-3.676^{**}
			(1.319)	(1.835)
log(Population) x No restrictions			-3.867^{***}	-5.809^{***}
			(1.440)	(1.370)
log(Population) x Soft Lockdown			-1.395	-1.702
			(1.542)	(1.637)
Education x National lockdown			0.479^{*}	0.887^{***}
			(0.288)	(0.234)
Education x Easing of measures			-0.123	0.671^{*}
			(0.308)	(0.365)
Education x No restrictions			0.209	0.705^{*}
			(0.430)	(0.410)

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Table A3: (contd.)

	Dependent variable:			
	Retail & Recreation			
	(1)	(2)	(3)	(4)
Education x Soft Lockdown			0.529	0.843**
			(0.423)	(0.357)
GDP per capita x National lockdown			−0.0001	−0.0001***
			(0.0001)	(0.00004)
GDP per capita x Easing of measures			−0.00004	−0.0003*
			(0.0001)	(0.0002)
GDP per capita x No restrictions			−0.0001	−0.0003**
			(0.0001)	(0.0001)
GDP per capita x Soft Lockdown			−0.00001	−0.0001
			(0.0001)	(0.0001)
Population density x National lockdown			−0.0005	0.001
			(0.001)	(0.001)
Population density x Easing of measures			−0.005**	−0.004**
			(0.002)	(0.002)
Population density x No restrictions			−0.007***	−0.006***
			(0.002)	(0.002)
Population density x Soft Lockdown			−0.007***	−0.006***
			(0.002)	(0.002)
Observations	6,047	6,047	6,047	6,047
Adjusted R^2	0.905	0.912	0.920	0.931
Canton + Daily FE	Yes	Yes	Yes	Yes
Health + Economic controls	No	No	Yes	Yes
Region x Weekly FE	No	No	No	Yes

Pre-lockdown and French are excluded as reference. The bilingual category includes Graubünden. The standard errors are wild cluster bootstrapped on cantons *p<0.1; **p<0.05; ***p<0.01.

Table A4: Results with full set of controls from Table 2

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
New cases per capita	−0.024***	−0.023***	−0.022***
	(0.008)	(0.008)	(0.007)
New deaths per capita	−0.651**	−0.588**	−0.563**
	(0.297)	(0.289)	(0.269)
High trust x National Lockdown	6.718**		
	(3.340)		
High trust x Easing of measures	11.659***		
	(3.845)		
High trust x No restrictions	4.069		
	(4.085)		
High trust x Soft Lockdown	4.724		
	(5.192)		
High diminution x National Lockdown		5.774***	
		(1.538)	
High diminution x Easing of measures		−0.352	
		(2.380)	
High diminution x No restrictions		−0.467	
		(2.316)	
High diminution x Soft Lockdown		1.414	
		(2.627)	
% German spoken x National Lockdown			0.108**
			(0.049)
% German spoken x Easing of measures			−0.011
			(0.038)

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Table A4: (contd.)

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
% German spoken x No restrictions			0.040
			(0.063)
% German spoken x Soft Lockdown			0.069*
			(0.041)
Cross-border workers per capita (French)	0.017**	0.019***	0.014*
	(0.007)	(0.006)	(0.008)
Cross-border workers per capita (German)	−0.029	−0.048	−0.040
	(0.040)	(0.042)	(0.043)
Cross-border workers per capita (Italian)	−0.047***	−0.048***	−0.045***
	(0.015)	(0.010)	(0.010)
Hospital beds x National Lockdown	−0.583	−0.333	0.148
	(0.735)	(0.575)	(0.546)
Hospital beds x Easing of measures	4.464**	4.456***	5.340***
	(1.742)	(1.560)	(1.644)
Hospital beds x No restrictions	5.830***	6.169***	6.354***
	(1.591)	(1.563)	(1.522)
Hospital beds x Soft Lockdown	1.472	1.852	1.919
	(2.824)	(2.302)	(2.297)
% of pop. over 60 x National Lockdown	−0.128	0.100	−0.859**
	(0.425)	(0.352)	(0.396)
% of pop. over 60x Easing of measures	−0.674	−0.983**	−0.569
	(0.574)	(0.501)	(0.753)
% of pop. over 60 x No restrictions	−0.768*	−0.856*	−0.997*
	(0.454)	(0.486)	(0.580)
% of pop. over 60 x Soft Lockdown	0.712	0.766*	0.256

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Table A4: (contd.)

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
	(0.502)	(0.465)	(0.759)
Trust in institutions x National Lockdown	−4.097	−0.865	−3.562
	(3.622)	(3.367)	(3.045)
Trust in institutions x Easing of measures	−17.981**	−19.068**	−9.817
	(9.149)	(8.105)	(10.382)
Trust in institutions x No restrictions	−14.217**	−14.569**	−12.383*
	(6.371)	(6.615)	(6.400)
Trust in institutions x Soft Lockdown	−13.262*	−11.473	−13.210
	(7.734)	(7.331)	(8.458)
% of urban pop. x National Lockdown	0.133***	0.036	0.052
	(0.047)	(0.054)	(0.051)
% of urban pop. x Easing of measures	0.536***	0.465**	0.583***
	(0.181)	(0.206)	(0.215)
% of urban pop. x No restrictions	0.262	0.257	0.255
	(0.184)	(0.172)	(0.178)
% of urban pop. x Soft Lockdown	0.210	0.188	0.163
	(0.278)	(0.231)	(0.236)
log(Population) x National Lockdown	−1.034	−1.570*	−3.120***
	(1.175)	(0.935)	(0.851)
log(Population) x Easing of measures	−5.154***	−4.080**	−4.848**
	(1.990)	(1.838)	(1.920)
log(Population) x No restrictions	−5.462***	−5.462***	−6.292***
	(1.614)	(1.401)	(1.383)
log(Population) x Soft Lockdown	−1.644	−1.969	−2.925

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Table A4: (contd.)

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
	(2.252)	(1.890)	(1.955)
Education x National Lockdown	0.540**	0.920***	0.785***
	(0.249)	(0.208)	(0.180)
Education x Easing of measures	0.579	0.462	0.748**
	(0.398)	(0.352)	(0.375)
Education x No restrictions	0.484	0.503	0.657**
	(0.316)	(0.323)	(0.313)
Education x Soft Lockdown	0.526	0.707	0.719*
	(0.424)	(0.433)	(0.419)
GDP per capita x National Lockdown	−0.0002***	−0.0001***	−0.0001***
	(0.00004)	(0.00005)	(0.00004)
GDP per capita x Easing of measures	−0.0004**	−0.0003	−0.0004**
	(0.0002)	(0.0002)	(0.0002)
GDP per capita x No restrictions	−0.0003**	−0.0003**	−0.0003**
	(0.0001)	(0.0001)	(0.0001)
GDP per capita x Soft Lockdown	−0.0001	−0.0001	−0.0001
	(0.0002)	(0.0002)	(0.0002)
Population density x National Lockdown	0.003*	0.001	0.0003
	(0.002)	(0.001)	(0.001)
Population density x Easing of measures	−0.003	−0.005***	−0.004**
	(0.002)	(0.002)	(0.002)
Population density x No restrictions	−0.005***	−0.006***	−0.006***
	(0.002)	(0.002)	(0.002)
Population density x Soft Lockdown	−0.004*	−0.005***	−0.006**

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Table A4: (contd.)

	Dependent variable:		
	Retail & Recreation		
	(1)	(2)	(3)
	(0.002)	(0.002)	(0.002)
Observations	6,047	6,047	6,047
Adjusted R^2	0.932	0.932	0.932
Canton + Daily FE	Yes	Yes	Yes
Health + Economic controls	Yes	Yes	Yes
Region x Weekly FE controls	Yes	Yes	Yes

The standard errors are wild cluster bootstrapped on cantons *p<0.1; **p<0.05; ***p<0.01.