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COVID-19 related social media use and attitudes towards pandemic control measures in Europe

Abstract

In this paper, we explore how the public sphere in Europe changed in the COVID-19 pandemic, i.e., under conditions of extensive social isolation and limited physical contact opportunities. Using data from the Eurobarometer from 2020 and 2021, we show what role digital and social media in particular played in the pandemic. In doing so, we pursue the question of what significance these media had for attitudes towards issues of pandemic control and thus also for emerging social conflicts in the context of the pandemic.

Keywords: COVID-19 pandemic, public sphere, political trust, social media

Acknowledgment

This is a significantly revised and substantially expanded version of an article that was published under the title "Die transformierte Öffentlichkeit. Die Rolle von Social Media in der Corona-Pandemie in den EU-Mitgliedstaaten" in the journal *Konfliktdynamik* (issue 4/2021) in 2021.

1. Introduction: Corona and the European public

With the arrival of the COVID-19 pandemic in 2020, normal social life came to a radical halt and social distancing became a common behavioral paradigm. As in-person social and professional encounters quietly dropped away, most people experienced a forced retreat into the private sphere. Significantly, however, this shift into the virtual realm did not bring public life to a standstill; instead, it redefined, refocused and reshaped public life.

In addressing how the pandemic affected public life, one point of irony immediately stands out: COVID-19 largely disabled the sector of public infrastructure dedicated to human encounters and togetherness, just as the rising wave of infection increased our societal need for information, communication, coordination, and decision-making. While the news media played a crucial role in helping to fill the gaps left by a dormant social communications apparatus – keeping people abreast of the rapidly-changing health interventions and enabling them to escape isolation (e.g., Statista 2020) – this was not nearly enough to ease many of the fears and tensions that arose as governments announced the gravity of the situation and the

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 DOI: 10.5771/2566-7742-2022-1-37

need for quick action. Especially in the early days of the pandemic, uncertainty and unpredictability abounded. Public authorities still had no solid understanding of causes and effects of COVID-19, nor did they possess a clear blueprint for how to effectively combat it. Thus, the information available to them as a basis for policy decisions was largely unreliable.

In this situation, digital platforms gained increasing importance. People connected online to share news, hold virtual work meetings, or engage socially with other like-minded individuals – not only family and friends, but also fellow users in the online groups created specifically for that purpose (cf. Trenz et al., 2020).

The impact of social media use on political attitudes has already been widely studied by researchers for other contexts. Here, we look at this relationship against the backdrop of COVID-19. How did increased social media use during the pandemic affect people's attitudes towards the governmental "Corona measures"? Specifically, what was the relationship between social media use, trust in the information put forth by social media, and political attitudes towards national and EU control measures across European member states (e.g. Hoewe & Peackok, 2020; Zhang et al., 2010)?

By 'social media', we mean the digital platforms that enable social public exchange (Facebook, Twitter, Instagram, etcetera); private messaging and voice services such as WhatsApp, Telegram or Zoom were excluded from our study. Using data from the Eurobarometer (the regular surveys initiated by the European Parliament (EP) and the European Commission (EC) from 2020 and 2021), our study takes a two-step approach: First, we descriptively show how people in the different European Union (EU) member states assessed and responded to different pandemic control measures. Second, we use group comparisons and multilevel regressions to assess the extent to which these results vary by media platform – that is, whether the platform used for information about the pandemic made a difference as to people's attitude towards the taken measures. We hope that this two-pronged analysis will shed new light on how social media use influenced political attitudes during the pandemic, when COVID-19 was changing the public sphere.

This paper is organized as follows: In a theoretical introduction, we review the known factors that seem to have affected people's support for governmental Corona measures. We also explain why we expect our main explanatory factor – social media usage, especially as a means of obtaining information about COVID-19 during the pandemic – to have negatively affected Europeans' attitudes towards those measures. We then descriptively examine these attitudes as well as the social media usage habits of people in various EU member states. Finally, we conduct multilevel regression analyses to clarify how the use of social media and trust in the information disseminated by social media impacts on people's assessment of Corona measures. During this step, we also control for factors that we deem important for these attitudes. People who used social media to stay abreast of current

developments during the pandemic, we find, were more likely than others to reject national pandemic measures and to view those measures as overly restrictive. Those who found this information particularly trustworthy were even less approving of the measures and saw the governmental controls as even more harmful for the economy and restrictive of personal freedom.

2. Pandemics, social media, and political attitudes

In seeking to understand the possible effects of pandemic situations on political attitudes, researchers have tended to point to the 'rally-around-the-flag effect' – that is, the feeling of solidarity that occurs when war, natural disaster, or some other crisis causes people to rally in unison behind the national flag to show their support for those in power, i.e., the government and heads of state. During such moments, the expression of national unity overshadows secondary quarrels and political disagreements, which are temporarily forgotten. Although a pandemic is somewhat unique in comparison with other crisis events, it seems to have caused the same reaction.

As the number of COVID-19 cases and casualties increased, people in Western Europe showed more interpersonal and political trust, more support for their governments and incumbent political forces, and more satisfaction with democracy (Bol et al., 2021; Esaiasson et al., 2021; Schraff, 2021). In practical terms, these attitudes are important because they correlate to stronger support for and compliance with COVID-19 containment measures (Kritzinger et al., 2021), while a lack of compliance correlates to protest voting (Barbieri & Bonini, 2020) and involvement in protests against COVID-19 measures (Plümper et al., 2021).

Nevertheless, three qualities of this 'rally-around-the-flag' limit any optimist conclusions we might reach about the pandemic's potentially positive effects on political attitudes. First, this effect was short-lived, producing a backlash against the pandemic measures when it became clear that they would continue for longer than expected (Davies et al., 2021; Riedl, 2020). Second, even though the pandemic mobilized people's support for the government, often they supported a top-down rule of law based in quick decisions, strong leadership, science-backed action, police intervention, and technocratic governance (Amat et al., 2020; Daniele et al., 2020). This fact has been largely overlooked by scholars, simply because few studies have analysed these measures. However, it does highlight a crucial truth: that public support for political leadership is not always a win for democracy. In this sense, the fleetingness of public support for pandemic measures is not necessarily bad. Third, the 'rally-around-the-flag-effect' has a strong national bias – we do not find it in relation to EU- and European-level Corona measures (ibid).

This dynamic – a short-lived, nationally-focused public commitment to fast, forceful action based in leadership, science, police measures, and technocratic government – describes a general pattern of political support during the crisis, a pattern

that varied by country and individual. The first very common explanation for these differences is basic self-interest, i.e., that people support measures out of egocentric reasons related to their personal health or financial/economic needs. Possibly, those who worry about contracting the virus – or that their family members will – are more inclined to support governmental control and prevention measures than those who do not feel the same level of threat. The felt threat could also be sociotropic, a symptom of popular concern about the macroeconomic situation of the whole society (Diehl & Wolter, 2021). Many researchers, however, acknowledge that self-interest has a relevant but very limited impact on compliance with the containment measures, since its impact on different types of people varies significantly. Those who are older, in poorer health, or are more financially vulnerable, for example, experience more anxiety about the virus (and thus be more supportive of control measures) than others – a situation that would do little to motivate solidarity among others in the population who are not directly at risk (Jørgensen et al., 2021b; Murphy et al., 2020).

In light of these limitations, scholars have pointed to duty or an overall political confidence in the government as possible alternative explanations as to why some people have supported the measures. One's general stance towards politics – so the theory goes – has more power to endow solidarity-focused attitudes and behaviors in society, and to motivate compliance among a broader sector of the population (even those for whom COVID-19 poses no immediate financial or health threat) than a felt threat does. While this idea is highly promising theoretically, however, political trust yields inconclusive results when looked at empirically. Some studies have proven its positive impact on individual support for health measures (Busemeyer, 2022), while others show its limited explanatory power (Cárdenas et al., 2021; Jørgensen et al., 2021b, Newton, 2020). The connection is hard to disentangle, not least because trust is strongly related to the 'rally-around-the-flag-effect' itself. Thus, we see that trust levels among Europeans rose slightly at the start of the pandemic, only to fall again as the crisis progressed and containment measures were reintroduced (Newton, 2020). Only one study known to us has been able to distinguish pre-pandemic trust and compliance with anti-Corona measures and find the latter's positive effect on the former (Bargain & Aminjonov, 2020).

Some authors, then, make a strong argument for interpersonal trust and relations, but here, too, results are mixed. One group of studies demonstrate that positive social interactions and social trust increased compliance with the measures, since they correlate to individuals who are better able to cope with the hardship and feel more solidarity with fellow citizens (Cárdenas et al., 2021; Leiter et al., 2021; Woelfert & Kunst, 2020). Yet other studies show the opposite: that more sociable and trusting people were more inclined to break lockdown rules, and were therefore less supportive of the measures (Jørgensen et al., 2021). However – and this is related to the focus of this paper – it is interesting to see how the effect of social

interactions and interpersonal trust might change when they are transferred to a digital space, as happened frequently during the pandemic.

As physical contact became more difficult during this time, many people switched to or intensified their use of both digital and social media. Several studies have already shown that individuals often compensated for the limitations on their usual social networks by turning to electronically mediated communication technologies (Fox, 2020; Harris, 2020). In the United States, 50% of the people acknowledged having increased their social media usage since the COVID-19 outbreak began (Samet, 2020); some had increased it so much that they reported feeling comfortable with the new normal (Nillson, 2022). There are different reasons for this increased usage. First, being forced to spend more time at home during the pandemic were meant that people were searching for a distraction. Second, they wanted to stay in touch with family, friends, and colleagues. Third, their need for information about the pandemic (the so-called 'infodemics') was strong. Access to the news was crucial if one wanted to stay abreast of rapidly changing public health measures (for example, see Statista, 2020; WHO Regional Office for Europe, 2020). Below, we address all these aspects of increased media use and assess their possible impact on political attitudes.

A lot of research differentiates between points one and two – that is, whether people use social media to cope with their anxiety and depression and use (mass) social media as distraction, or whether they instead use interpersonal media (messaging or voice services) to connect with their friends and family. During the crisis, the latter helped users to mitigate the negative individual consequences of enforced isolation (Harris, 2020; Michel, 2020). It was also associated with decreased loneliness and, in turn, increased satisfaction with life. By contrast, mass social media use had the opposite effect (Choi & Choung, 2021, Geirdal et al., 2021). Here, excessive use was especially related to increased loneliness and anxiety, apathy and depression (Hudimova et al., 2021). Ironically, people joined virtual communities in an attempt to escape these feelings, but this only created a vicious circle of heightened anxiety, followed by greater social media use, which ead to even greater anxiety (Boursier et al., 2020). We should also distinguish between the passive and active use of social media. Thus, research suggests that those who use such media passively are more likely to fall into the trap of upward social comparison (Masciantonio et al., 2021), as happens when users compare themselves to their seemingly better-off peers (such as those who stage self-presentations on Instagram) whereas those who actively use and gain social support through social media are more satisfied with life and have more positive feelings during the pandemic than others (ibid). All in all, however, these findings confirm the general concern that networked intersubjectivity fails to produce the real solidarity (Downey & Fenton, 2003) that could potentially motivate compliance with and support for the measures.

Another known assumption is that loneliness and lack of social contact are important mechanisms that can drive people to feel isolated from society and excluded from politics (Inglehart & Norris, 2017; Rydgren, 2009), which in turn can lead to bitterness and feelings of unfair treatment (Hochschild, 2016) – factors that make such people easy victims of populist mobilization (Salmela & von Scheve, 2017). Social media may become spaces where these individuals search for affirmation, expressing their anger and disappointment that translate into negativity when they are communicated (Bail, 2021). While they may feel misunderstood and unappreciated by society, socially isolated people also might be more susceptible to fake or 'alternative' news.

Especially during the pandemic, when people experienced a heightened need for information, the kind of information they consumed was critically important. In general, knowledge about COVID-19 seems to have increased individuals' support for governmental measures to control the spread of the virus (Jørgensen et al., 2021a). Yet some studies provide a more complex picture, noting that this conclusion depends strongly on the kind of media people used and their sources of their information. To stay informed about the pandemic, most people seem to have stuck to traditional sources like television, but 50% got supplementary information from the Internet (Sabat et al., 2020). In the UK, this consumption of reliable mainstream media had an uneven impact on societal attitudes, first increasing and then decreasing public support for the measures, since the media also covered criticism of the government (Newton, 2020). All in all, the most trusted sources during the pandemic were health authorities, the WHO, and doctors, followed by national governments, relatives and friends, and then main national news media. Social media was the least trusted source (Sabat et al., 2020).

But the effects of social media use and trust are complicated. In general, social media usage for information-finding purposes was associated with increased loneliness and decreased life satisfaction (Choi & Choung, 2021), factors which we know contribute to a feeling of isolation and the search for alternative information. Yet this effect was highly dependent on the specific accounts and posts that people followed on social media. Although most social media posts about COVID-19 were not very reliable or trustworthy, users tended to trust those shared by competent individuals (such as doctors, medical practitioners etc.) (Tayal & Bharati, 2021). Also, if official sources were followed, it had no such detrimental impact on people's attitudes towards the Corona measures (Kaya, 2020).

However, misinformation was a huge issue in the infodemic caused by COVID-19 health crisis, and not every user was able to identify fake news. Despite being limited to a relatively small number of posts, at least in more popular social media platforms, like Facebook, Twitter and Instagram, these erroneous reports very often came from 'superspreaders' (Cinelli et al., 2020; Yang et al., 2021) and were therefore extremely harmful. In their recent empirical study of German alternative

news sites on Facebook during the pandemic, Boberg et al. (2020) show that the alternative media covered the same topics as the mainstream media, but used an entirely different tone. In posts that had a familiar populist spin and anti-establishment tone, they criticized public institutions and political leaders, and sought to strongly emotionalize the debate. Many alternative news media used information related to COVID-19 to promote their long-term narratives, taking a critical stance toward "the elite", refugees, or immigrants, and even promoting climate-change denial. In this way, alternative news media brought rumors and conspiracy theories about COVID-19 and the origins of SARS-CoV-2 to the fore of public discourse, generating a considerable number of user interactions with this type of content.

Thus, like many political challenges, the COVID-19 crisis has exposed deep-seated political and social divisions, now further fueled by the challenges to scientific evidence and an "ideological tribalism" fomented in various online communities (Hartley & Vu, 2020). This would suggest that the growing importance of digital – and especially social – media during the COVID-19 pandemic has not been exhausted by the quantitative explosion in user numbers (Nabity-Grover et al., 2020). On the contrary, it seems that social media themselves have become central mediators of information and core shapers of opinion, which has also changed their significance in qualitative terms.

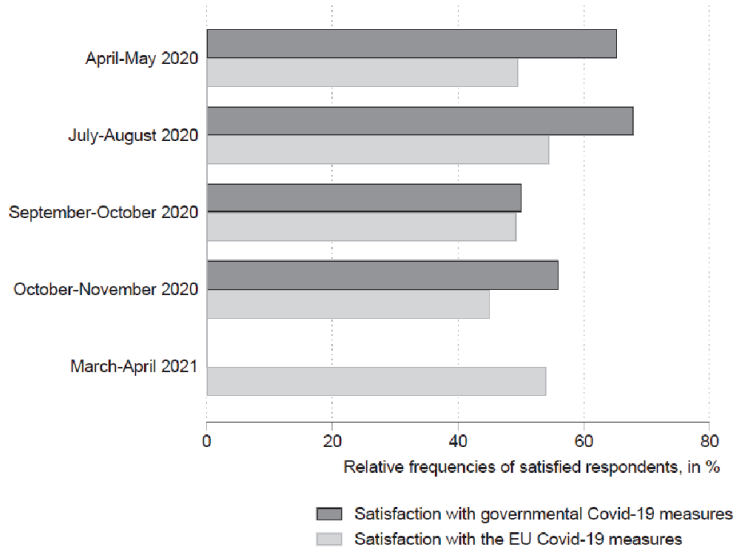
3. Who thinks what? Descriptive analysis of attitudes towards anti-Corona measures in the EU

To empirically assess the influence of social media use on attitudes toward Corona measures, we first conduct a descriptive analysis, evaluating data from three different European surveys carried out in 2020 and 2021 (for a description of the used Eurobarometer data, see appendix). In these analyses, we review the following attitudes towards national and EU-level containment measures: general satisfaction with governmental and EU COVID-19 measures and level of agreement with the statements "The restriction of freedoms due to COVID-19 is not justified" and "COVID-19 measures damage the economy more than they benefit health". As an aside, we also take a look at EU citizens' satisfaction with national and European vaccination campaigns.

Let us start with the general satisfaction with Corona measures: Despite the picture of widespread dissent painted by protests and the media attention they sparked in individual EU member states, Eurobarometer survey data very clearly show that most Europeans broadly approved of and unequivocally supported these measures. These trends, however, varied over the course of the pandemic (see Fig. 1) and among individual member states (see Figs. 2 and 3).

As we can see, the 'rally-around-the-flag effect' produced by COVID-19 was extremely short-lived. In the face of increasingly prolonged lockdowns and a growing tightening of the governmental measures to combat COVID-19, a pessimistic

Figure 1: Changing levels of satisfaction with governmental and EU COVID-19 measures over time



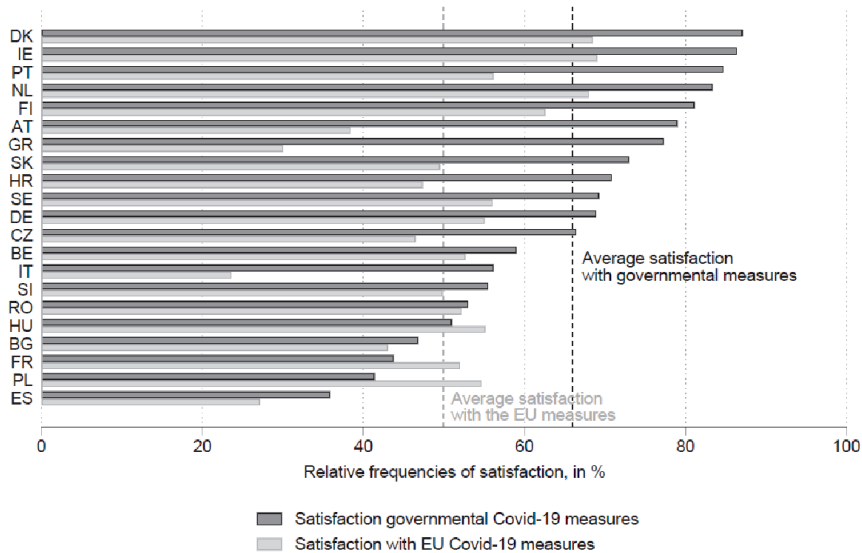
Source: European Parliament COVID-19 Survey, Round 1 (N= 14,751); Eurobarometer 93.1 (N= 20,939); Eurobarometer 94.1 N= 23,000 for governmental and 21,432 for the EU measures); European Parliament COVID-19 Survey, Round 3 (N=13,760); Eurobarometer 95.1 (N= 18,999).

fatigue scenario soon emerged (also see pandemic fatigue by Lilleholt et al., 2020). The initial willingness of individuals to rally behind their national governments and restrict their lives for a few weeks (during the first lockdown) dwindled significantly as the pandemic progressed. Support for national governments increased a little during the summer loosening of restrictions, only to drop again significantly with the subsequent fall and winter lockdowns. Briefly peaking in October and November, they nonetheless failed to reach the levels seen during the first wave.

While this decline in popular support for the pandemic measures was felt in all countries, it was most pronounced in Croatia and least pronounced in Germany and Sweden. In general, support for governmental COVID-19 measures was higher than average in Western and Northern European countries during all phases of the pandemic, and lower than average in Southern and Eastern European countries (including France).

Support for EU crisis policies, like that for national measures, also fluctuated over time (although not as strongly). In September of 2020, the level of satisfaction with EU pandemic measures appeared equal to (Fig. 1) or in some countries even higher than (Fig. 3) that for national measures. Nevertheless, as the second pandemic wave

Figure 2: Levels of satisfaction with governmental and EU COVID-19 measures across European countries in April-May 2020

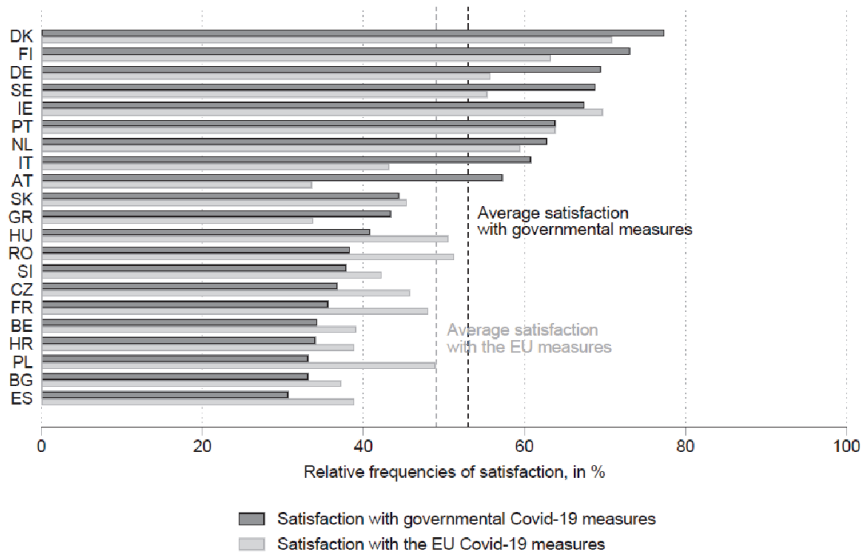


Source: European Parliament COVID-19 Survey, Round 1; N= 14,751.

progressed these levels fell more consistently for EU measures than for national ones. In October and November 2020, support for EU measures dropped significantly below that for national measures, which experienced a brief spike during the same period. This confirms the assumption that the 'rally-around-the-flag' effect has a national bias.

Unfortunately, the available data do not allow for direct comparison between this situation and that of spring 2021. With the start of the vaccination campaign, approval ratings for EU measures rose almost to the level of the summer highs. While support levels for national measures cannot be assessed due to missing data, comparable data suggest a similar trend, i.e., dropping satisfaction levels in fall/winter as compared to summer, followed by a spring rise to the early fall levels (We use a similar measure, i.e., agreement with the statement "everything is going right/wrong in the country right now", as in Eurobarometer 93.1, 94.1, 94.2 and 95.1). Data on support for vaccination campaigns (Appendix, Fig. A1) reveal that the EU's instrumental role as vaccine distributor is likely responsible for the strong support levels in spring 2021. Overall, the EU vaccination campaign enjoyed greater support than did national measures. Europeans appear to have felt more satisfied with the EU than with their national governments, at least at the start of the vaccination.

Figure 3: Levels of satisfaction with governmental and EU COVID-19 measures in different European countries, September-October 2020

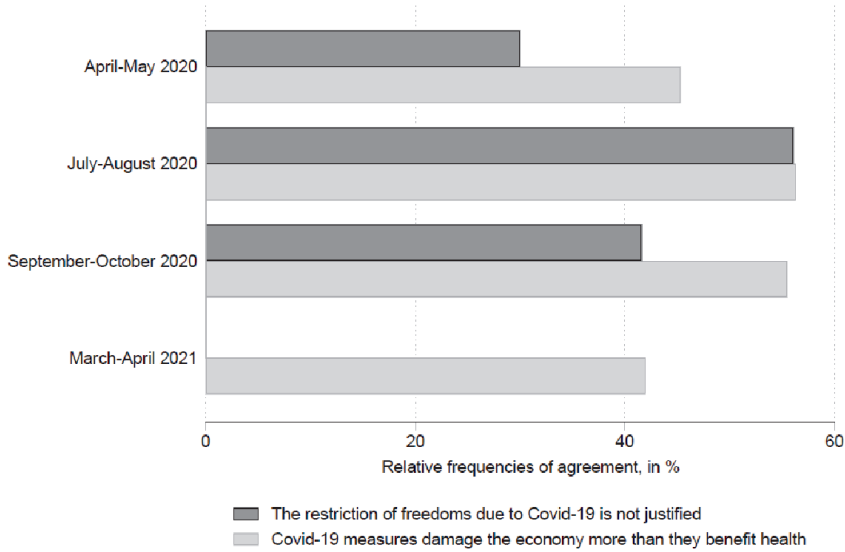


Source: European Parliament COVID-19 Survey, Round 3; N= 13,760.

Approval of national anti-COVID-19 measures was particularly low in countries where people reported lower levels of trust in the national political system and greater levels of dissatisfaction with the state of democracy (see Eurobarometer 93.1). In contrast to some of the reviewed papers, our data show that pandemic control measures were more likely to garner support in political environments where people generally trust in the political system. Hence, the reluctance to embrace government measures expressed a generalized distrust in politics or dissatisfaction with the national government. With few exceptions, approval of EU measures and vaccination strategies follow a similar pattern. Interestingly, the citizens of Hungary and Poland reported more consistent support for EU actions of this type than those of their own governments. In Germany, on the other hand, we see significantly lower levels of satisfaction with both EU and national government vaccination strategies than for the pandemic measures overall. This could be due to the initial glitches in the German vaccination campaign.

This finding is even more evident when we look at the public's willingness to accept restrictions on individual liberties during the pandemic. The number of Europeans who see the pandemic-driven restrictions on their personal freedoms as unacceptable increased significantly during the first year of the pandemic, as did the number of those for whom the measures' damage to the economy outweighed

Figure 4: Changing attitudes towards COVID-19 over time



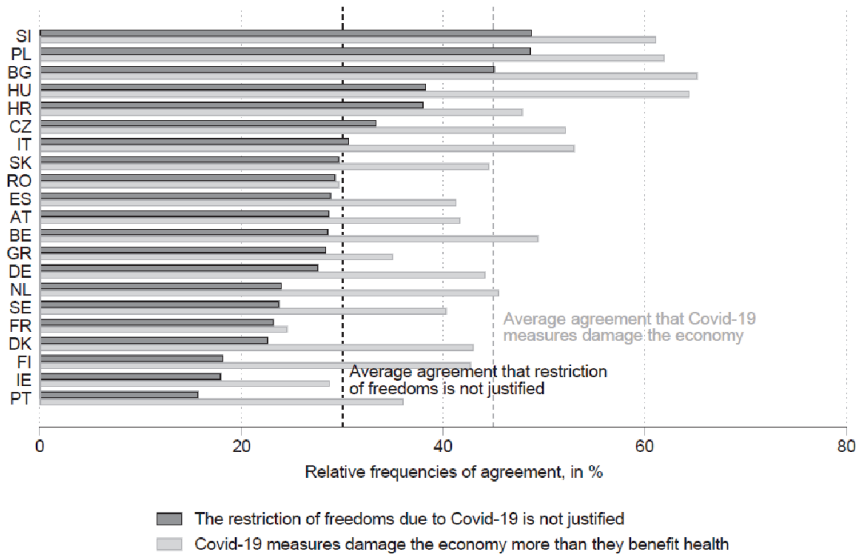
Source: European Parliament COVID-19 Survey, Round 1 (N= 20,046); Eurobarometer 93.1 (N= 22,663); European Parliament COVID-19 Survey, Round 3 (N=20,376); Eurobarometer 95.1 (N=22,866).

their health benefits to the population (see Fig. 4). These attitudes were most pronounced in the summer of 2020, when some of the measures were still enforced, despite an apparent easing of the pandemic situation.

Here, too, we find clear differences between European member states (see Figs. 5 and 6). While the vast majority of states accepted the appropriateness of the pandemic measures, dissent came up primarily in Eastern Europe, and especially in Slovenia, Poland, Bulgaria, Hungary and Croatia, where a third of the population rated the measures as disproportionate. The Eastern European countries also stood out when it came to weighing the measures' impact on economic performance versus their protective health benefits to society. In these countries, a clear majority agreed that the economic damages brought on by the measures outweighed their overall health benefits. This argument was echoed by some Southern European countries, such as Italy, Greece, Portugal, and Belgium, Austria and Netherlands. In the latter countries, however, this evaluation of the measures contrasted strongly with reported attitudes towards the restriction of personal freedoms.

One possible explanation is that these specific countries expected more severe macroeconomic and consequences of lockdown and pandemic measures and had already suffered greater losses (see Eurobarometer 93.1) than other European coun-

Figure 5: Attitudes to COVID-19 in different European countries, April-May 2020

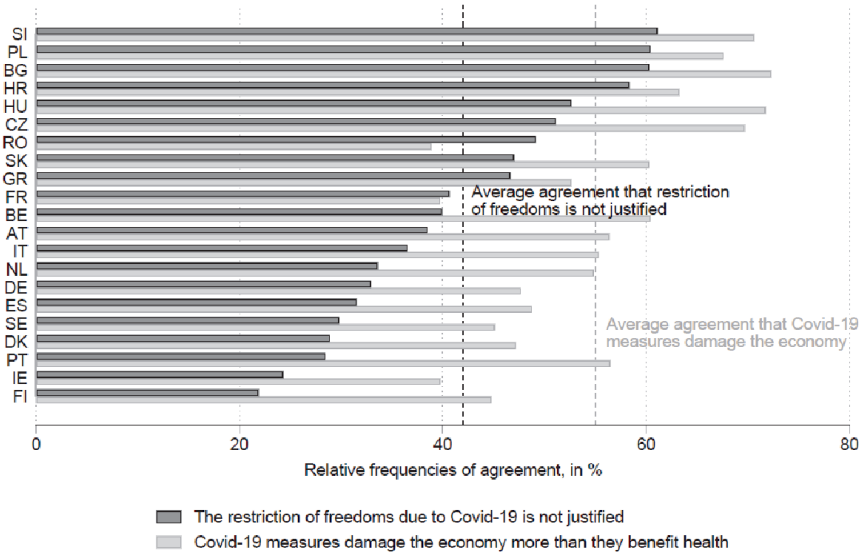


Source: European Parliament COVID-19 Survey, Round 1; N=20,046.

tries. It might be due to their weak economies following the recent financial crisis as well as generally high number of precarious working positions and low state support for Corona-related financial losses (Sabat et al., 2020). But these attitudes might also have another explanation, since not all of the countries whose citizens clearly worried about the economic impact of the pandemic opposed the restriction of freedoms *en masse* (see Figs. 5 and 6). As we have noted above, mistrust of government action is higher in countries where most citizens see the restriction of individual freedoms as inappropriate. We will come back to this question in the next section, where we control for both factors in regression analyses.

In summary, a first look at the data shows that an overwhelming majority of Europeans, including those not economically well off, approved of restrictions on public life and supported government actions to combat COVID-19. Both attitudes were highly responsive to the course of the crisis: that is, both increased as the crisis intensified, but also dropped as the crisis continued. This is not the case for our other two variables. Europeans were largely unsatisfied with EU crisis management – at least after the (presumably only short-lived) positive response to the start of the vaccination campaign – and they were much less convinced that the expected benefits of the pandemic measures really merited the economic losses they bring on. Now, we will look at the independent variable we want to explore in this paper.

Figure 6: Attitudes towards COVID-19 in different European countries, September-October 2020



Source: European Parliament COVID-19 Survey, Round 3; N= 20,376.

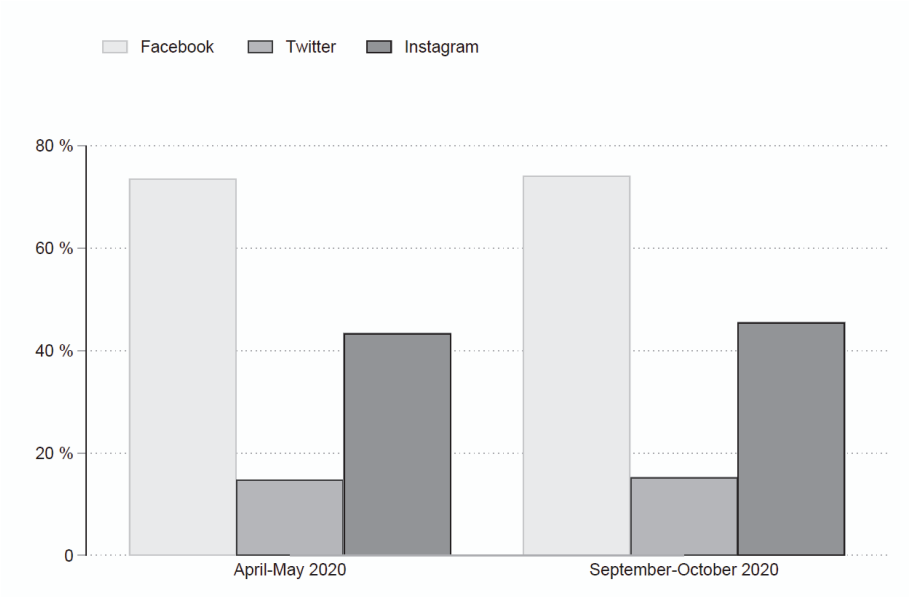
4. Social media use and information sources during the pandemic

How people evaluate political measures, we argue, depends largely on the sources of their information: the arguments, narratives and facts on which they base their assessments and, more particularly, the media channels they trust as reliable sources of information. To recap our earlier statement, we suggest that people who use social mass media to seek comfort and information are less likely to support governmental COVID-19 measures than those who do not – an effect intensified by people's stronger-than-average need for information during the pandemic. In order to describe the quantitative and qualitative change in social media's role under COVID-19, we will look at the number of social media users over time, the primary sources of information about COVID-19 during the pandemic, and the sources that people trusted. We will also examinewhat sources of information people in different countries used on the topic of vaccination and how the vaccination preparedness was.

The first piece of evidence that our argument holds is the fact that social media use in the EU during the pandemic was extensive, and increased over time (see Fig. 7). As the Eurobarometer shows for the beginning of the pandemic, demand was the highest for the social media platforms Facebook, Instagram and (to a lesser

extent) Twitter. During the crisis, usage further surged for the visual media platform Instagram, which nevertheless did not reach the levels of total saturation.

Figure 7: Social media usage (in the past 7 days) over time

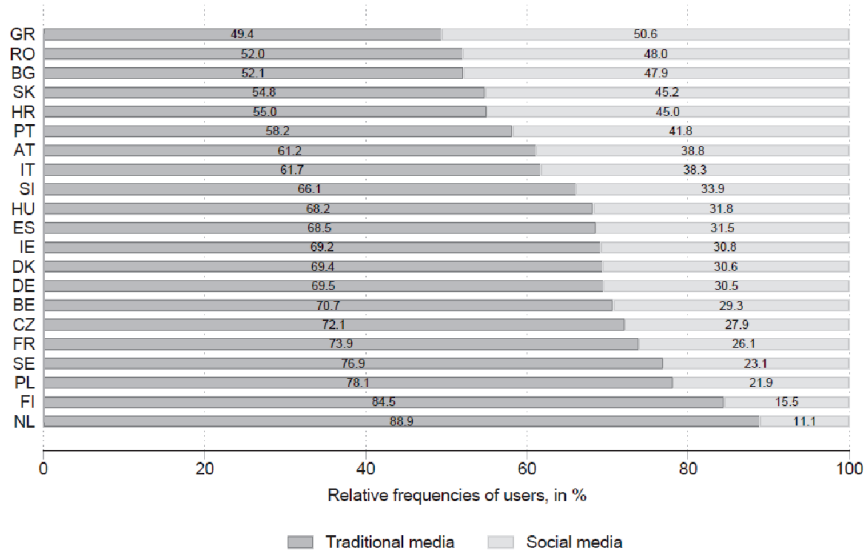


Source: European Parliament COVID-19 Survey, Round 1 (N=21,804); European Parliament COVID-19 Survey, Round 3 (N=22,306).

The Eurobarometer data cannot answer tell us whether skeptics (of government action in general, and pandemic measures in particular) are more likely to access social media than other individuals, or whether the act of exchanging information via social media actually foments such attitudes. Nevertheless, we can observe that in countries where people used social media as primary source of information most intensively (e.g., Greece, Romania, Bulgaria, Slovakia and Croatia; see Fig. 8), the overall criticism of government actions during the crisis was also greater (Figs. 2, 3, 5, 6 and A1). An interesting exception is Poland, whose inhabitants mostly consume traditional media, but whose political attitudes are very similar to those of the countries in the social media group.

Another Eurobarometer survey specifically asked people which sources of information they most trusted during the crisis (see Fig. 9) and found that the vast majority of Europeans name friends and family – i.e. social contacts – followed by science and medicine. Only a small percentage of respondents cite traditional media sources, and even fewer social media as reliable sources.

Figure 8: Primary source of information on the pandemic across European countries, July-August 2020

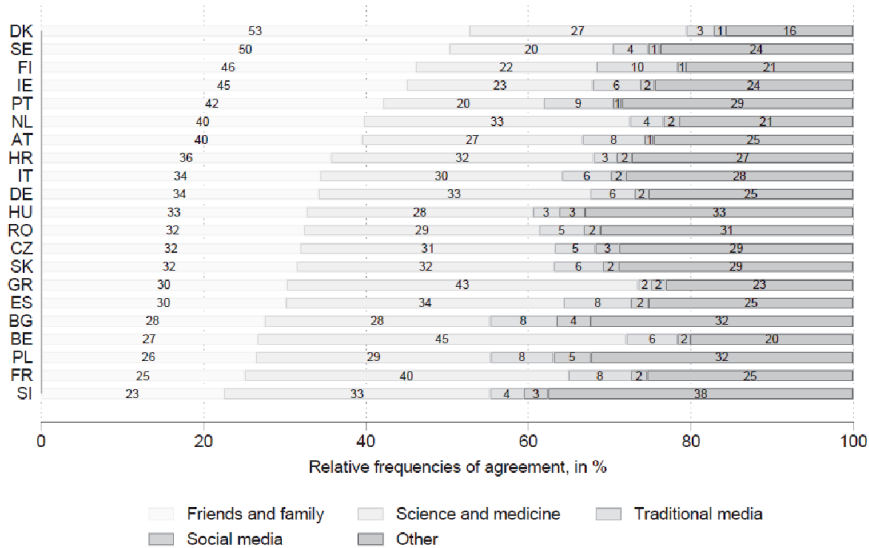


Source: Eurobarometer 93.1; N=22,853.

Here too, however, there are interesting differences between countries. Although only 2% of Europeans generally named social media as their most trustworthy source of information, most of these are found in Eastern European countries and especially in Poland, Bulgaria, Hungary and Slovenia – countries with lower levels of satisfaction in governmental pandemic measures and comparatively less willingness to vaccinate (with the exception of Hungary; see Fig. A3). In these countries, respondents mainly cited national health organizations and the WHO, rather than traditional media, science, or friends/family as their most trusted sources of information. The citizens of Belgium, Greece and France, on the other hand, trust science and medicine the most, while the Danes, Swedes and Finns trust friends and family more than other sources. Interestingly enough, these countries showed stronger acceptance of the COVID-19 measures than the others we studied. This signals that trusting the political information of friends and family does not necessarily weaken one's support of the government's actions.

Scandinavian EU member states – but only in comparison to other European countries – showed relatively weak trust in medical sources when it came to information about vaccination issues (see Fig. A2). Overall, however, Scandinavians expressed strong levels of trust in science and medicine. They appeared to view the vaccination issue as a specifically medical issue; hence, on this topic people

Figure 9: Most trusted source of pandemic-related information across European countries, April-May 2020



Source: European Parliament COVID-19 Survey, Round 1; N=20,054.

trusted their medical sources over their circle of acquaintances. For more than half of respondents, doctors and other health specialists were the most trusted sources of information, followed by friends and family. Here, too, only a small proportion of respondents cited the media as trustworthy sources.

On the individual level, we find a strong association between a person's trust in science vis-à-vis in family/friends, her or his satisfaction with political vaccination strategies, and greater vaccination readiness (data not presented). Thus, in a binary relationship, family and friends as a trustworthy information source appear to impact negatively on vaccination-related information (data not presented). While this finding somewhat contradicts the results of our findings for the macro-level, it aligns with what we noted in our theory section, where we noted that research findings on social capital, strong human bonds, and compliance with COVID-19 containment measures are inconclusive. We will come back to this question in the next session, where we control for different this relation interfering variables.

5. Beyond descriptives: Does the hypothesis of social media influence hold?

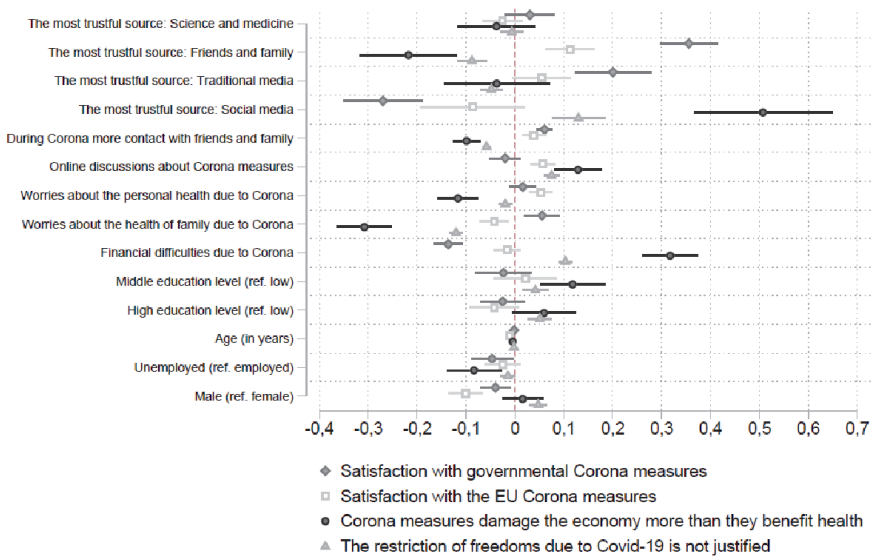
As a final test for our hypothesis, we conduct multilevel regression analyses for all four attitudes, which allows us to control for both individual determinants and country variation. There are two Eurobarometer surveys with the variables of interest to this study. Because the surveys include neither the same individuals nor the same set of questions, however, the results cannot be directly compared. Nevertheless, we tried to conduct regressions which resembled each other as closely as possible. Regarding our main explanatory variable, the survey of April-May 2020 (Survey1) includes data on users' most trusted information sources and the frequency of their online discussions about Corona measures, and the survey of July-August 2020 (Survey2) includes data on the user's main information source about the pandemic. Alternative explanations reviewed in the theory section were also considered. To represent self-interest, regressions included worries about personal health and that of family members, and financial difficulties brought on by COVID-19 (Survey1), and on the respondent's agreement/disagreement with the statements that COVID-19 will economically harm the respondent personally and the whole country (Survey2). Data on political trust was only available for the second survey, where it recorded the respondent's trust in both the national government and the EU. The role of personal contacts was only recorded in the first survey, which addressed the most trustworthy source of information, and agreement/disagreement with the statement that the respondent had more contact with frIends and family during the pandemic (as a counterpoint to social isolation and loneliness).

As controls, we included age (Survey1), knowing that the increased risk of older people made them more supportive of measures (Lilleholt et al., 2020, Sabat et al., 2020), gender (both) considering that male were less concerned about (Lewis & Duch 2021) and less supportive of stringent measures (Stockemer et al., 2021); education (both) related to different media consumption patterns and knowledge about the COVID-19; subjective social class (Survey2) as a possible marker of social inferiority (see again Hochschild, 2016; Inglehart & Norris, 2017); unemployment (Survey1) as a possible hardship, having additional impact on support for the measures beyond financial difficulties due to COVID-19; general frequency of internet use (Survey2) as a demonstration of the respondent's propensity for digital media use; political interest (Survey2) as a control for trust in and knowledge of the political system; and political alignment (Survey2), following the research relating right-wing political orientation and conservatism to lower levels of compliance with pandemic control measures (Barbieri & Bonini Gonzalez et al., 2021; Becher et al., 2021; Wu & Huber, 2021).

Following the order already set forth above, we will first present our results for alternative explanations and then for social media. Starting with self-interest, in contrast to some concerns about its insufficient compliance motivation raised in the

literature, regressions reveal that worries about one's or family's health increases support for national COVID-19 containment measures and decreases doubts whether they justify restriction of freedom and liberties and harm to the economies (see Fig. 10). However, people's financial worries have an opposite effect: They have strongly positively influenced respondents' attitudes towards the economic harmfulness of pandemic measures and on individual views as to the appropriateness of restricting personal freedoms, and had a negative effect on their reported satisfaction levels with national COVID-19 measures.

Figure 10: Results of multilevel regressions on satisfaction with COVID-19 measures and attitudes towards COVID-19, using data for April-May 2020

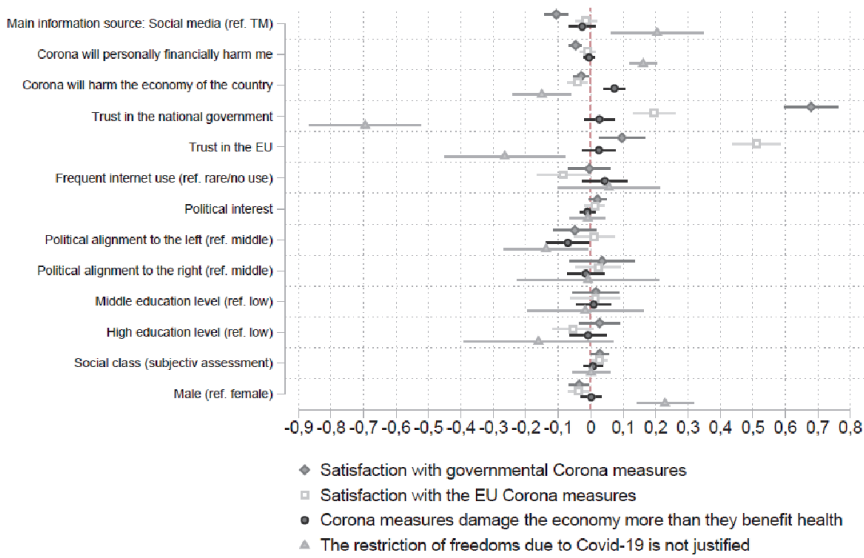


Source: European Parliament COVID-19 Survey, Round 1; data weighted; multilevel regression with 21 countries; N (respectively): 18,237; 13,211; 17,628; 18,125.

Further insights can be obtained if we distinguish and contrast the financial impact of pandemic measures on individuals versus the economy at large (see Fig. 11). Although people who expected personal financial losses due to the pandemic measures were more inclined to view the restrictions on individual freedoms as unjustified, this does not visibly correlate with other issues (e.g., level of support for government actions or views on the economic appropriateness of the measures). Interestingly, expecting the pandemic measures to have negative *macroeconomic* consequences had the opposite effect: People who had this view also tended to be more positive about the restrictions on individual freedoms. At the same time, they condemned the measures' exaggerated focus on health issues to the detriment of the

economy. All in all, it appears that we need a more differentiated self-interest explanation if we are to explain different attitudes towards the measures. Thus far, most studies show that concerns about health and economic threat go hand-in-hand when it comes assessing support levels for governmental COVID-19 measures (e.g. Oana et al., 2021).

Figure 11: Results of multilevel regressions on satisfaction with measures and attitudes towards COVID-19, using data for July-August 2020



Source: Eurobarometer 93.1; data weighted; 21 countries included; N (respectively): 18,362; 17,152; 18,275; 18,419.

Political trust delivers a much clearer picture. Specifically, trust in the national government was a strong predictor not only of people's support for national COVID-19 measures, but also of their tendency to view their personal freedoms as overly restricted during the pandemic (see Fig. 11). The greater the trust in government, the weaker the conviction. The same can be said about peoples' trust in the EU. Again, our data show that people who generally trust the EU were not only more supportive of the EU pandemic measures, but also less likely to think that their individual freedoms had been wrongly restricted during the crisis. Despite its influence on the latter, however, trust in the political system seemed not to significantly affect individual views about the *economic* proportionality of COVID-19 measures.

These results confirm the difference between these two attitudes. Criticism of the appropriateness of pandemic measures to business and the economy depends on the damage to the economy that people expect the measures to inflict. By contrast, attitudes towards the restrictions on freedoms follow a 'rally-around-the-flag' logic: Political trust and the prospect of macroeconomic harm caused by official pandemic measures mobilizes populations and suspends criticism on the issue of restricted freedoms. These results could complement the idea that personal concern and political trust are independent factors in support of the COVID-19 measures - either one of them should be present to secure satisfaction with the measures (Lalot et al., 2022). They also have a distinct impact on different attitudes regarding the justifiability of the measures.

Coming back to inconclusive results on social contacts as explanatory factor, when we control for other factors by looking at the respondent's social characteristics and partly including the qualities of one's social circle (see Fig. 10) yields an interesting result. Here, we find that people who had more contact with their friends and family during the pandemic, and who trusted their family and friends more than other sources, were also less likely to condemn pandemic measures for restricting their freedoms or for being too economically damaging, and were more likely to support them. By contrast, those who often discussed the measures online were of the exact opposite opinion. Thus, it does seem to make some difference whether people engaged in close online exchanges with loved ones or primarily engaged in online discussions with strangers. Of course, we cannot use this data to make any statement about existing causalities. Whether exchanging views with strangers in online forums led people to adopt the views about COVID-19 and the pandemic measures that prevailed there, or whether such forums attracted like-minded people, must remain an open question at this point.

After controlling for the influence of these well-known factors on political attitudes about COVID-19 measures, we still clearly observe that those who relied on social media as a main source of information during the pandemic were significantly more likely to reject the pandemic measures put in place by national governments and to agree that they unjustifiably restricted personal freedom (see Fig. 11). What about users' trust in social media as the main source of information? Surprisingly, one's trust in science and medicine had no additional impact on one's support for measures, and apparently can be explained by other interfering variables. Trusting traditional media as a source of information increased one's support for governmental COVID-19 measures and decreased the likelihood that one might view the restriction of personal freedoms as unjustified. By contrast, those who trusted social media the most during the crisis were also the most likely to reject government action during the crisis, to see it as unjustified, and especially to identify such action as harmful to the economy (see Fig. 10). This variable also has the strongest impact on attitudes in the regression.

In short, social media had a demonstrably clear effect on people's perception and interpretation of governmental measures during the COVID-19 pandemic. As social media use increased (see Fig. 7), satisfaction with government action fell (see Fig. 1). Although the data do not allow us to prove causal relationships, the changes observed are nevertheless remarkable in their simultaneity.

We know, however, that different social media platforms do have different architectures which might lead to differences in impact on COVID-19 attitudes. Facebook, for example, is both text- and image-based and is used to maintain dyadic relationships or friendships and for self-presentation. Twitter is only text-based and used for information purposes, whereas Instagram is image-based and used for self-promotion (Masciantonio et al., 2021). While Facebook as an "ordinary man" medium very often is associated with "alternative" news, misinformation and susceptibility to populist appeals related to anti-governmental sentiment, Twitter is known as an elite network that supports, rather than clearly criticizes, government action (Adi et al., 2014; Eriksson & Olson, 2016; see also Mellon & Prosser, 2017). While it has no such intention, Instagram may be subject to accidental politization, depending on the people posting.

Table 1: Use of different kinds of social media (during the past 7 days) and attitudes towards COVID-19

	April-May 2020			September-October 2020		
	Facebook (no/yes)	Twitter (no/yes)	Instagram (no/yes)	Facebook (no/yes)	Twitter (no/yes)	Instagram (no/yes)
Satisfaction with governmental COVID-19 measures	**1,61 / 1,52**	1,55 / 1,54	**1,53 / 1,58**	**1,48 / 1,37**	1,41 / 1,38	1,40 / 1,41
Satisfaction with the EU COVID-19 measures	**1,41 / 1,34**	1,36 / 1,37	1,34 / 1,39	1,46 / 1,42	1,42 / 1,47	1,41 / 1,46
COVID-19 measures damage the economy more than they benefit health.	3,20 / 3,25	3,25 / 3,16	3,21 / 3,26	**3,42 / 3,57**	**3,55 / 3,41**	3,48 / 3,57
The restriction of freedoms due to COVID-19 is not justified.	0,48 / 0,45	0,47 / 0,43	**0,48 / 0,44**	**0,54 / 0,58**	**0,58 / 0,54**	0,57 / 0,56

Source: Own elaboration. Cells show the mean values of COVID-19 attitudes for specific social media categories. Significant differences are marked in bold.

A comparison of the social media platforms Twitter and Facebook (see Table 1) clearly shows that, in comparison to non-users, users of the latter were significantly less satisfied with the political measures at the beginning of the pandemic, and later criticized their governments' pandemic measures significantly more often. Twitter users, on the other hand, were more likely to agree during the second pandemic wave that the measures' health benefits outweighed their harm to the economy, and were more likely to support the restrictions on individual liberties.

To everyone's surprise, Instagram users show an impact similar to that of Twitter: namely, more support for governmental pandemic measures, and a tendency to view restrictions on personal freedoms under COVID-19 as justified. It seems that Instagram also attracts more progressive people and therefore could be also called an "elite network". Also of interest, significant relations between social media use and COVID-19 attitudes for Facebook and Twitter consolidated during the second pandemic phase, which suggests that the effects of (some) social media amplified as the pandemic progressed.

6. Conclusion and discussion

As the Eurobarometer data shows, despite an immense increase in social media use over the past two pandemic years, only a minority cite it as their primary source of information and exchange, and only a fraction of respondents sees it as a trustworthy source for pandemic- and vaccination-related information. Nevertheless, social media use increased significantly during the COVID-19 pandemic, and one-third of respondents used it as their primary source of information. Thus, while users who consume and discuss information on digital and social networks are still not a majority, this group has grown over time and overall is quite large. Moreover, as we have seen, the vast majority of Europeans still support governmental measures to combat the spread of COVID-19.

Our results, however, also hint at that the way we use social media might be vital. Those who used them to connect to friends and family show positive attitudes towards governmental measures to fight the virus. By contrast, those who communicated less with family and friends, but spent more time on social media, displayed lower levels of support for government actions during the pandemic. This may indicate that political discussions on social media actually work as a compensatory mechanism for those who are socially isolated, politically disillusioned, and socially disenchanted, offering them a sense of belonging and acceptance from their peers. Yet it is precisely these people who tend to hold alternative opinions and are more easily mobilized by populist actors. In this sense, the pandemic has also helped reinforce social divisions in the form of an "epidemic of loneliness."

Platform effects in our research are also present, confirming that Twitter is an "elite network" and therefore in contrast to Facebook, is related to more support for Corona measures. Surprisingly, Instagram demonstrates not a political effect similar to that of Twitter, i.e., one that leads to attitudes more supportive of the measures. However, the effects of different platforms should be further analyzed and theorized. Specific hypotheses are not available for all social media, which is why we also decided to explore them without having testable hypotheses in mind.

The direct health threat caused by the spread of COVID-19 increased people's support for the measures. The macroeconomic consequences of virus containment measures positively correlated with support, but led people to think that measures'

exaggerated focus on health issues was harming the economy. However, only when they suffered individual financial losses did people see the restrictions on individual freedoms as unjustified. This calls for a more elaborated and differentiated definition of threat in the COVID-19 pandemic research, since different worries and layers of threats cause different political attitudes. Current academic studies seem to overlook this.

The data also shows that peoples' belief in the appropriateness of pandemic measures (especially the restriction of individual liberties) and general satisfaction with governmental action correlate significantly with their overall trust in the national political system. While this is not very surprising, it does strengthen the thesis that the COVID-19 policy critiques and protests in various European countries reinforced (or simply made more visible) existing conflicts, highlighting and intensifying an existing lack of trust in the political system. This also clearly explains the differences we found in respondents' approval of the pandemic measures and their willingness to vaccinate in different EU states.

In this context, we cannot speak of a growing social polarization in the context of the COVID-19 pandemic, since we assume that polarization pits two similarly sized groups against each other. However, during the pandemic a social split occurred between a growing minority of Europeans who distrust the government's actions and (in particular) doubt the correctness of the measures taken, and a majority who approve of the measures and largely support the government's actions. The question of the appropriateness of restricting individual freedoms for the protection of society points to a virulent social conflict. As the data impressively show, the users of social media platforms tend to oppose majority opinion and government action.

Social media, these results imply, are active drivers of these emerging overall social conflicts. It thus makes sense, we propose, to talk of *mediatized conflicts* in the public sphere (cf. Eigmüller & Trenz, 2020; Livingstone & Lunt, 2014). The relevant questions here concern which specific digital media were in particularly high demand during the crisis, and what role social media played during times of widespread social distancing. Media organizations and the specific *modus operandi* of each shape the way people communicate and interact in politics, culture, and in their private relationships (Galpin & Trenz, 2017). Far from having a merely passive influence on conflicts and their outcomes, social media are active drivers of these conflicts.

We still know very little about the influence of social media on attitudes and polarization, and thus on social conflicts. For a long time, the thesis of communicative "filter bubbles" and social "echo chambers" was popular, which stated that the Internet and, more specifically, social media draw like-minded people to connect with each other and confirm and reinforce each other's opinions. This, in turn, was seen as the reason for the increasing (especially political) polarization and

radicalization among social media users, who only see information that reflects and strengthens their own political opinions (cf. e.g. Pariser, 2011; Sunstein, 2017).

However, other studies show that digital interactions across different political camps are more common than one would expect (Barnidge 2017). Exposure to different political news seems to be even higher among users of social media than among those of traditional media. However, the impact of such digital interactions on political opinion formation is still unclear. While Mutz (2006) argues that engaging with opposing political opinions leads to political moderation, Bail et al. (2018) have shown that virtual contact with opposing political opinions sharpens political polarization under certain circumstances. What exactly the polarizing effects of social media use are, and how they are related to certain individual conditions (such as political attitudes and general political interest) is still unclear in this context.

However, the data show very clearly that populist opposition to the pandemic measures imposed by European governments, although sometimes very popular, do not represent a majority view. Indeed, these populist movements face certain paradoxes (Brubaker, 2021).

To begin with and contrary to what might be expected, during the pandemic scientific knowledge was in high demand and trusted as rarely before. In all EU member states, medical professionals were cited as the most trusted source of information on issues related to a COVID-19 vaccination, often followed by health authorities and government institutions (see Fig. 9, "Other"). This data demonstrates that many pandemic movements against the perceived "mainstream", challenging and questioning scientific expertise, represented minority views.

Moreover, populist movements are commonly crisis phenomena themselves, as they depend on the occurrence – and not infrequently the creation and invocation – of crises in order to flourish (Brubaker, 2021). During the pandemic, however, it was largely governments that proclaimed the crisis, and populists who denied its existence and decried countermeasures as excessive and disproportionate. Again, in almost all EU member states, the data show that this in no way represented a majority view. People viewed restrictions on individual freedoms as sensible measures to protect the health of society, although approval ratings on this issue did change considerably over the course of the pandemic. At the start of the crisis, only a small minority saw the restrictions on freedom as disproportionate and felt that the benefits of lockdown significantly outweighed its economic costs. This changed considerably in the second half of 2020, when nearly a third of the population in some EU states came to oppose the measures (see Fig. 6). Even so, this remained a minority view in most countries.

Finally, populism tends to be protectionist, yet during the pandemic it was the state that was perceived and severely attacked by populist movements as being "overprotective" with its measures (Brubaker, 2021). Yet according to the data,

an overwhelming majority of Europeans largely supported these "overprotective" restrictions on personal freedoms.

However, a basic premise of our research – that social and digital media are increasingly shaping the way people communicate and interact in politics, culture, and in their private relationships – does seem to be playing out, at least in the case of the COVID-19. As we can see the behavior of the media during the pandemic, the use of social media is rising sharply. But this means that the geographical and social scope of communication also widened during the pandemic, and that different media practices have involved a whole range of different actors.

Against this background, the significance of social media in the emergence and development of social tensions and divisions is threefold:

First, social media gives voice to topics and debates that are either very quiet, or simply go unheard in public discourse. Users of these media can easily bypass both traditional media platforms and their gatekeepers; they can also generate and use publicity in ways that go far beyond that of traditional access channels.

Second, social media gives more people a voice, such that the private actually does become public (when desired). Social networks shape individual opinions, but the individual positioning of every user also controls and influences the opinion-forming process of the group. As we have seen, during the pandemic these dynamics have exploded the boundaries of the digital space and blurred the boundary between online and offline mobilisation. Our knowledge of these dynamics and the causal mechanisms behind them is still very sparse.

This, however, already points to the limitations of our study. First, and as already mentioned, the available data do not allow for any causal explanations: Are people who oppose government action to combat the pandemic more likely to have access to social media than others, or does information sharing via social media encourage such attitudes? This is not only a crucial question in the context of the COVID-19 pandemic; it also drives social science media research generally (see e.g. Bail, 2021). Second, and relatedly, we have no knowledge of what people actually consume on social media, i.e., whether they consume and share news and political opinions, or view entirely apolitical content.

While the Eurobarometer data does not allow us to draw a causal relationship between media use and political attitudes, there can be no question that social media and traditional media debates differ in their content. The former gives much more space to individual impressions and experiences than to strong insights or any corresponding recommendations for action. The Eurobarometer data also indicate (and this is our *third* point) that increased use of social media is related to the content of social conflicts and their dynamics. Thus, they have a profound influence on the transformation of the public sphere, even – and especially – in times of COVID-19.

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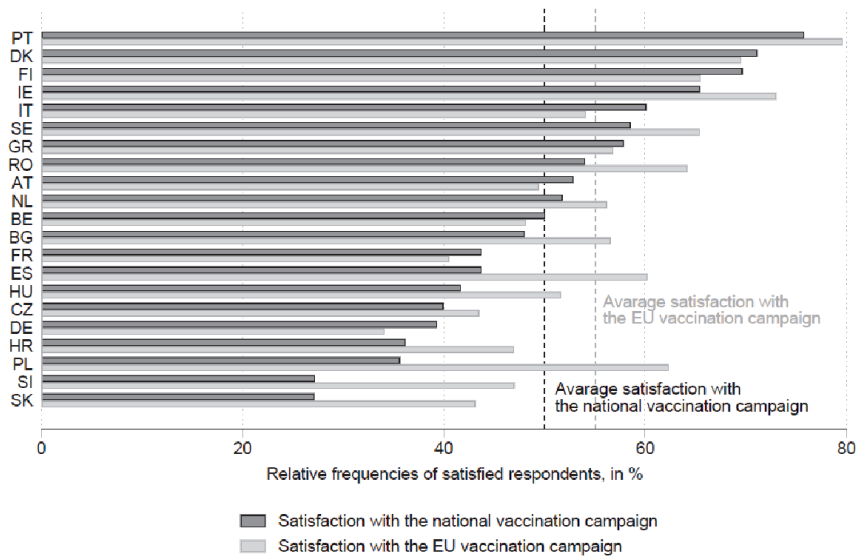
Appendix

Description of Eurobarometer data: We are using the Corona Barometer from the first and third pandemic waves, corresponding to the periods April-May 2020 (*European Parliament COVID-19 Survey, Round 1*) and September-October 2020 (*European Parliament COVID-19 Survey, Round 3*), as well as the Eurobarometer for July-August 2020 (*Eurobarometer 93.1*). The Flash Eurobarometer of May 2021 (*Flash Eurobarometer 494: Attitudes on vaccination against COVID-19*) was used for some additional supportive analyses. Data from three other surveys (Eurobarometer *94.1* from October-November 2020, *Eurobarometer 94.2* from November-December 2020, and *Eurobarometer 95.1* from March-April 2021) were also included, although individual data for these surveys was not available at the time of analyses, therefore they do not allow strong conclusions. All surveys were commissioned by the EP or EC and conducted by renowned market and public opinion research institutes in various EU member states.

Unfortunately, some time- and country-specific comparisons are not possible, since aside from the two COVID-19 surveys, the questions and countries included in

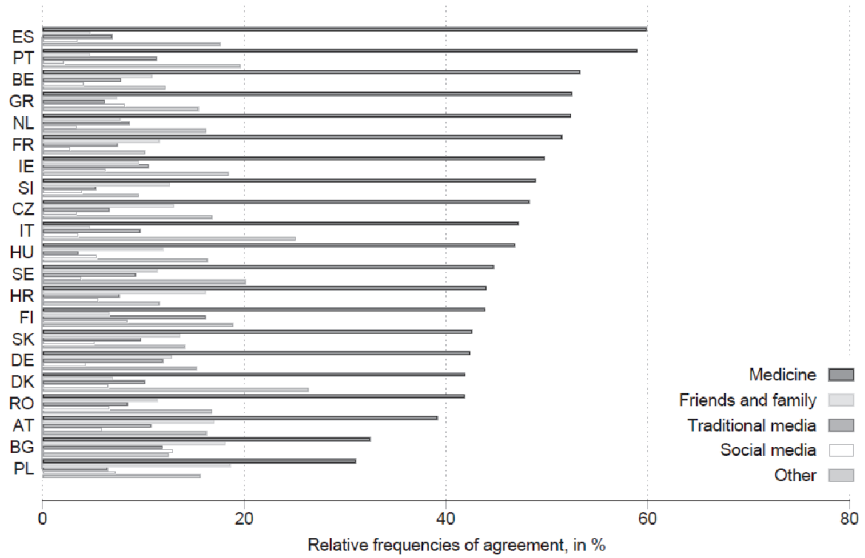
the sample were not congruent across all surveys. For this reason, most of our results represent cross-sectional data taken at a single point in time. Also, due to incongruency of included questions, we have results for different variables coming from different phases of the pandemic. Thus, we cannot rule out the possibility that effects are somehow related to the timing differences of the surveys. Nevertheless, surveys still allow us to draw some interesting conclusions about social media use and public opinion during the COVID-19 pandemic. To facilitate data comparability, we opted to use data for the same set of countries. Thus, only countries that participated in all the used surveys are addressed in our analysis.

Figure A1: Levels of satisfaction with national and EU vaccination campaigns in different European countries, May 2021



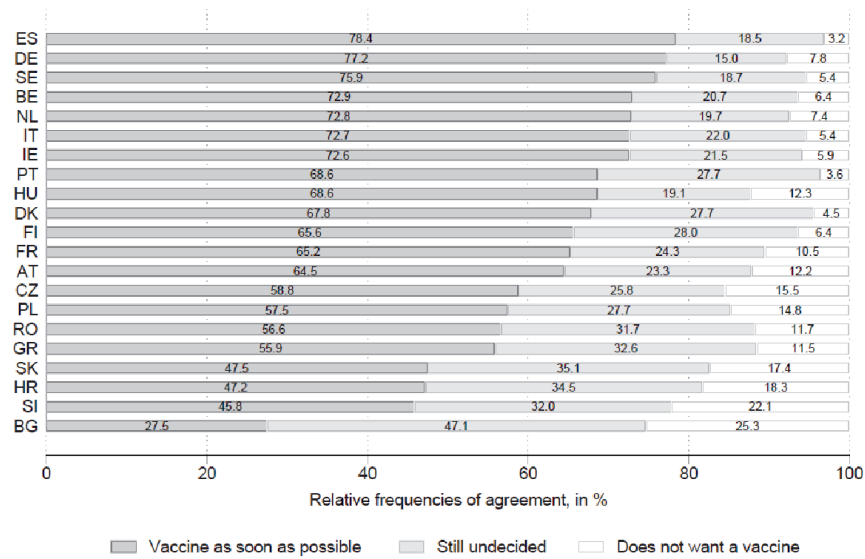
Source: Flash Eurobarometer 494: Attitudes on vaccination against COVID-19; N= 20,019.

Figure A2: Most trusted sources of vaccination-related information across European countries, May 2021



Source: Flash Eurobarometer 494: Attitudes on vaccination against COVID-19; N= 22,435.

Figure A3: Vaccination readiness in different European countries, May 2021



Source**:** Flash Eurobarometer 494: Attitudes on vaccination against COVID-19; N=22,435.