News, misinformation and support for the EU

Exploring the effect of social media as polarising force or neutral mediators

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Abstract

As social media platforms have become a staple news source for many EU citizens, we model repurposed Eurobarometer data from 27 EU member states to explore the possible polarising effects of social media use on public opinion about European integration. In a first step, we investigate whether social media use is correlated with decreased trust in the EU. In a second step, we probe the link between social media news consumption, fake news and polarisation by expanding the cross-sectional analysis with EU level analyses of the interaction between social media use and fake news. Our research paper finds no significant correlation between social media use and increased Euroscepticism at either step. We argue that this lack of significant social media effects at the aggregate level is an argument for why future research on social media effects should incorporate measures of these effects at both the individual and societal level. Thus, while our study focuses on a European context, it holds important lessons for future social media research outside of Europe too.

Keywords

European Union – Legitimacy – Media Effects – Public Opinion – Social Media – Trust

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Introduction

Recent debates at the European Union (EU) level have drawn a clear link between social media, post-truth politics and disinformation (High Representative of the Union for Foreign Affairs and Security Policy 2018), and have created concern regarding the potential of such media to segment the public spheres of EU member states. A similar understanding of social media as a spearhead of post-truth politics has led to debates in various countries about the causal links between social media use and decreasing trust in democratic institutions. This understanding has also spawned extensive literature investigating how misinformation spreads across social media and how social media users react to intentionally or accidentally falsified or incorrect information (Zannettou et al. 2019).

Investigation of media effects in the context of the EU is still in its early stages. We nevertheless already know that social media discourses on the EU, especially among right-wing populist actors, frequently attack the supranational decisions and elites of the EU (Engesser et al. 2017; Hameleers 2019), leading to a polarised debate. Despite a rich literature addressing how individual media content, both in social and traditional media, shapes support for European integration, the question of whether these findings extend to the national level is still comparatively understudied. This research paper contributes to the field of media effect studies by turning the focus to a relatively under-researched area. Rather than asking about the polarising effect of any individual message about the EU, we use Eurobarometer data from 2016 and 2018 to investigate whether social exposure to social media infrastructure independently drives increased Euroscepticism, or if it merely accelerates existing Euroscepticism. It thus answers the following research question: 'How does an increasing interaction with a social media infrastructure, through for instance the increasing use of platforms like Twitter and Facebook for daily news updates, news sharing and networking, influence support for European integration?' A large literature already investigates the effect of specific news content on support for European integration (see de Vreese and Boomgaarden 2006; de Vreese et al. 2011; van Spanje and de Vreese 2014; Vliegenthart et al. 2008). However, with very few exceptions (such as Nguyen and Vu 2019), the question of news source effects is comparatively under-investigated.

Our research paper proceeds as follows. We first take stock of the rich literature that addresses the broader question of how media content affects perceptions about European integration. We then discuss, with a basis in the literature investigating effects of social and online media consumption at the individual level, how the characteristics of social media, especially in combination with Eurosceptic framings, may alter perceptions of European integration at the aggregate level. Subsequently, presenting our approach and methods in more detail, we show how we have repurposed Eurobarometer data to investigate whether social media use correlates with lower support for the EU at the national level by analysing surveys fielded after the Brexit vote (2016) and the waning of

the migration crisis (2018). We test whether social media use either independently or in interaction with previously established predictors of Euroscepticism lead to lower support for the EU and its political integration. We derive this causal mechanism, which we will refer to as a frame recall mechanism, from how online debates frequently reinforce existing beliefs (Karlsen et al. 2017). Finally, we analyse how social media interacts with misinformation to create differentiated support for the EU.

Our analysis shows no consistently significant negative correlation between social media use and support for the EU. We even find that the interaction between social media use and specific indicators of Euroscepticism is associated with a higher probability of supporting the EU or its policies than the indicator on its own, as is, for example, the case with exclusively national identities, found by previous literature (Hooghe and Marks 2005) to be a strong correlate of Euroscepticism. Our aim here is not to disprove or dismiss the effect that social media may have, especially in light of the literature showing how individual frames may contribute to greater Euroscepticism. Instead, we argue that the link between individual distrust and a societal crisis of legitimacy may be more complex than the type of dose-response relationship that can be inferred from experimental literature on this question. We argue that drawing conclusions about the connections between social media use and Euroscepticism is difficult without considering the intermediating factors of domestic public spheres and media systems. Similarly, studies seeking to provide a comprehensive account of the effect that social media is likely to have on Eurosceptic beliefs must use a methodological toolbox that captures effects at both the individual and societal level. While our results primarily investigate this relationship in a European context, the same complex relationships may be found elsewhere. We thus argue that future research on social media should consider individual and aggregate level effects of social media use on political trust and explore why negative social media effects found at one level, using experimental methods, do not necessarily translate across levels.

Media effects and EU contestation

The literature about the effect of media coverage on opinions about the EU is rich and heterogeneous in terms of topics covered and methods used (Mosca and Quaranta 2017; de Vreese et al. 2016; van Spanje and de Vreese 2014). However, the trend thus far has been to study the effect of news media content rather than social media. Thus, the literature may overlook that each type of media will have features that could increase or decrease the chances of it having a polarising effect. Similarly, in social media, micro-targeting and algorithms that tailor content to each user could create polarised online public spheres (Bayer et al. 2019: 134; 58). De Zúñiga et al. (2017) also find that those who rely on social media for their daily news headlines end up less knowledgeable about politics. Altogether, this suggests that social media may lead to more differentiated public spheres.

Karlsen et al. (2017) find a similar polarising effect of online news and that exposure to online debates leads to reinforcement of previous opinions, despite people being exposed to opposing views. Since people engage with opposing views, online media may not be the echo chamber they are thought to be, but rather an arena of further attitudinal polarisation. This modification of the 'echo chamber' thesis echoes other research (Dubois and Blank 2018) and is an essential component of our conceptualisation of how social media might drive Eurosceptic beliefs. Increasingly polarised views about the EU may not necessarily stem from people selectively choosing content that confirms their own beliefs, but rather from their processing of content through familiar cognitive frames and refine arguments for their previously held beliefs.

A key finding of the literature on the connection between media exposure and support for the EU, is that framing matters. For instance, van Spanje and de Vreese (2014: 336-337) show that the probability of voting for Eurosceptic parties changes due to media exposure to Eurosceptic parties and beliefs. They further show that the framing of EU membership impacts support, with benefit framings correlating with a decreased probability of voting for Eurosceptic parties. Similarly, Karstens (2020) finds that framing labour migration as a risk to domestic workers creates opposition to labour migration.

The media effect literature finds no unconditional 'dose-response' relationship between media frames and changing political attitudes. De Vreese and Boomgaarden (2006: 29-32) show that such effects are mediated by interpersonal communication about politics and that the strength of the mediator varies with political sophistication. Furthermore, van Klingeren et al. (2017) point to a correlation between framing effects and the degree of conflict espoused by the content. Media content focusing on the conflict between two positions or showcasing opposing sides to an argument has the counterintuitive result of reinforcing existing beliefs.

Moreover, the effects are not universal across populations. De Coninck et al. (2019: 135) find no correlation in their cross-sectional study of the connection between media representation of immigrants and refugees in Swedish and Belgian media and attitudes towards the same groups. Harteveld et al. (2018: 170-171), in their study of the correlation between public opinion and media coverage of the same issue, find that those who belong to the far-right generally respond with less trust in the EU when immigration becomes a salient media topic. This finding suggests that both policy area and political orientation may lead to heterogeneous media effects.

Is the medium the message? Looking for media effects beyond media content

While a long line of studies shows that framing of news content matters, there is comparatively little focus on how the choices of media sources that individuals make impact the EU's legitimacy at the aggregate level. We could anticipate different media effect for different types of media sources due to the different

levels of journalistic intervention found in different types of news media. For instance, Ernst et al. (2019: 178) find that politicians are frequently less able to put forth populist frames in newspapers and on television shows due to greater levels of journalistic intervention. An explanation could be that those exposed to information about the EU on social media might have less of a chance of having misinformation corrected due to a comparative lack of journalistic intervention. Such correction has been found by previous research to mitigate misinformation effects (Hameleers 2019; Maertens et al. 2020). As the absence of such journalistic correction is more likely when misinformation about EU is shared via social media, we thus expect that social media users less politically sophisticated regarding the EU will respond to it by expressing less trust in the EU than those social media users with higher levels of sophistication regarding EU politics.

One crucial point is that social media platforms have become a core tool of professional journalism. Many journalists are active, and often influential, on social media in their professional capacity, while news media outlets maintain official profiles and rely on social media channels to disseminate their content. As a result, social media users may be exposed to much the same media framing of EU politics that is not qualitatively different from that consumed by nonusers of social media. However, the mechanisms Karlsen et al. (2017: 258) point to, where online debates strengthen previously held beliefs, may still lead us to find polarisation among more active social media users, even if news consumption is not their main reason for using social media. The most prominent role for social media may thus be to accelerate pre-existing polarisation, with media effects being differentiated according to one's underlying propensity to support integration. We further explore whether this effect applies equally to all aspects of integration or if some policy areas are more amenable to online polarisation, as van Klingeren et al. (2017) propose.

We anticipate that polarisation could be activated or accelerated in the presence of specific EU news framing on social media. Given that citizens' attitudes about the EU are influenced by national governments and the domestic parties they support (Hooghe and Marks 2005: 435; Kanthak and Spies 2018), and that right-wing populist communication in social media about EU issues frequently have 'supranational elites' as targets (Engesser et al. 2017: 1118), we can thus expect that those who place themselves on the right of the political ideological spectrum, would be more likely to take their cues from such right-wing populist sources. Earlier studies find that Eurosceptic voters are more likely to rely on Eurosceptic news sources (Leruth et al. 2017). Exposure to populist frames about the EU in social media could make those primed to distrust the EU, such as those who define their identity as exclusive national, even more sceptical (Hameleers 2020: 813-820). This confirmation bias holds even when individuals are exposed to opposing views, in a process that Karlsen et al. (2017: 270) define as 'the double set of echo chamber and trench warfare effects', whereby confirmation and disconfirmation bias mechanisms are at work simultaneously, leading to increased polarisation of opinions. To the extent that such populist and Eurosceptic frames are met with different degrees of acceptability in different

countries (Bjola and Papadakis 2020), the mechanisms of polarisation and attitudinal retrenchment pointed to by Karlsen et al. (2017) may prepare the ground for differentiation inside each country. However, as shown by our literature review, we expect de-differentiation to be the norm at the European level. Due to how especially right-wing populist online discourse surrounding the EU has been marked by a polarised 'us versus them' framing, it may lead those taking their cues from such political leaders across the EU to adopt a more critical stance towards the EU. The effect of social media use could thus be to differentiate domestic spheres, while also de-differentiating opinion among similar publics at the European level.

Previous attempts to measure the effect of social media use on trust in the EU have been inconclusive. Nguyen and Vu (2019) find no significant polarisation of views of EU policies when comparing those who get most of their news from social media to those who get it from traditional media, regardless of previous attitudes towards the EU. However, while the two groups of respondents were balanced on variables like political knowledge and age, we believe that much of the real potential for social media to be a source of Euroscepticism lies in its interaction with other variables. For instance, those with far-right and far-left ideological leanings would be more likely to harbour Eurosceptic sentiments (van Elsas and van der Brug 2015). Thus, analyses of the effects of social media on support for the European Union that do not take into account what the public opinion literature finds to be significant predictors of Euroscepticism may misrepresent how such social media effects more plausibly manifest themselves.

For instance, Nguyen and Vu do not consider how social media effects may be moderated by specific knowledge of the EU, which is found to correlate with trust in the EU and support for its integration (Harteveeld et al. 2013; Karp et al. 2003). As Wilson and Hobolt (2015: 107-108) show, non-expert audiences are more likely than subject matter experts to believe that the EU has a more substantial influence over national policies than what is actually the case. This effect largely disappears among those with greater sophistication in their knowledge about the EU. Thus, social media users with less sophisticated knowledge of the EU may be less likely to detect misinformation about the EU and more likely to be affected by it.

Mosca and Quaranta (2017) find a similar lack of effect of relying on social media. On the other hand, a traditional news diet is significantly correlated with higher trust in their Italian, German and British samples. However, like Nguyen and Vu (2019), they do not consider the possibility that the effects may be conditioned by the level of specific knowledge about the EU. Their analysis, therefore, does not address whether social media users with lower levels of EU knowledge are more likely to experience attitudinal polarisation. Neither do they control for the exclusiveness of national identities that might be prevalent in the different groups. Such exclusiveness has been found to predict Euroscepticism by an extensive body of literature, starting with contributions like Hooghe and Marks (2005).

While the effect of social media use on political polarisation is empirically controversial, evidence suggests that social media users who follow public figures at the EU level gravitate towards far-right politicians, as far-right figures have far higher numbers of followers than those belonging to the centre or the left (Lappas et al. 2019: 72-73). This indicates that those who receive information about the EU through social media, whether the reception is active or passive, may be exposed to a right-wing populist discourse about the EU. This exposure may decrease their support for the EU as a system.

Combined with earlier evidence that diffuse Euroscepticism as a central feature of online news coverage of the EU and particularly of readers' comments (Michailidou 2015), Lappas et al.'s (2019) findings strengthen the supposition that those exposed to information about the EU online meet a largely Eurosceptic discourse. It is therefore likely that the greater the use of social media, the more likely the exposure to Eurosceptic frames.

The compound effect of social media use on previous polarisation is not restricted to the far-right, as both far-right and far-left voters tend to distrust traditional media sources (Bartlett 2014: 106). This is also implied by Karlsen et al. (2017), who find that people on opposite sides of the political spectrum are likely to have their views reinforced through online news consumption. As people with non-centrist political beliefs are more likely to be more Eurosceptic (van der Elsas and van der Brug 2015), we test whether the interaction between social media use and non-centrist political preferences has a stronger negative effect on support for European integration than either of the two in isolation. We anticipate that social media plays a role in perpetuating a 'spiral of Euroscepticism' (Galpin and Trenz 2017), by exposing those who may be more amenable to Eurosceptic beliefs to negative frames of the EU.

Given that previous literature (Michailidou 2015) has found that online news coverage of the EU has a diffusely Eurosceptic nature, and that the same right-wing populists who are likely to have the largest number of followers on social media (Lappas et al. 2019) also have framed the EU negatively (Hameleers 2019), it is likely that many are exposed to Eurosceptic content on social media. While we would have preferred to have information about the sentiments of social media content regarding the EU in the relevant period, previous literature indicates that the type of online content regarding the EU that social media users have access to is of a diffusely Eurosceptic nature. We argue that the effect of exposure to this diffusely Eurosceptic content will be to lower trust in the EU, and that the effect of such frames will be larger for those who are already likely to have some Eurosceptic sentiments. In such cases the processes of entrenchment pointed to by Karlsen et al. (2017) would create a space for even greater social media effects among these groups.

Our research question is the following: 'How does an increasing interaction with a social media infrastructure, through for instance the increasing use of platforms

like Twitter and Facebook for daily news updates, news sharing and networking, influence support for European integration?' We hypothesise the following:

H1: That trust in the EU will be significantly lower as social media use increases.

H2: That social media will be a critical driver of Euroscepticism in national contexts with greater levels of fake news.

H3: That trust in the EU will be significantly lower among social media consumers with low levels of knowledge about the EU when compared to social media use in isolation.

H4: That respondents with already polarised views about politics, operationalised through self-identification with a far-right or -left, will have their views about the EU further polarised as a function of increasing social media use.

H5: That the interaction between social media use and exclusive national identity will lead to more significant decline in support for the EU than exclusive national identity alone.

H6: That the polarisation of opinions stemming from social media use will be greater for support or opposition to migration policies than overall trust in the EU.

Data and methods

To investigate these hypotheses, we merge data from Eurobarometer 86.2 and 90.3 (European Commission 2019; 2020). The surveys were fielded in November 2016 and 2018. Our models are single level models with clustered standard errors at the country and year levels to facilitate precise significance testing even where residuals are correlated at the level of countries. These correlations may lead to standard errors that are biased downwards, and thus type 1 errors (Moulton 1990). We use the *vcovCL* function from the *sandwich* package, applying HC0 standard error corrections (Zeileis et al. 2020). (1) Firstly, we investigate the independent effect of being a social media user; (2) Secondly, we check for a correlation between the independent variable 'social media use' and low levels of sophistication regarding the EU, non-centrist political beliefs and exclusive national identity. In addition, we introduce fixed effects for country and year, to control for invariant effects at the level of time and countries that may lead to omitted variable bias (Mummolo and Peterson 2018).

We repeat this analysis for the cases of Hungary and Finland, basing it on the same data. Eurobarometer 46.4, from 2018 (European Commission 2018), showed that Hungary and Finland were the countries in which the smallest and largest percentage of respondents reported seeing news that they believe misrepresents reality in varying degrees (see Appendix figure A5 for descriptive statistics for all countries). We thus operationalise the level of fake news inside national media

systems by a measure asking respondents about their perceptions of how often they are exposed to fake news. While this is no perfect measure, in that it may lead us to either over- or underestimate the problem posed by fake news in particular contexts, self-perceived exposure to fake news may be a valuable proxy for the most ideal measure, an analysis of the veracity of claims about the EU made in social media in each particular country.

As these are analysed separately, there is no spatial correlation between respondents. However, to account for correlation that may arise due to when the surveys were fielded, we cluster residuals at the year level using HC0 standard errors (Zeileis et al. 2020). This increases the precision of significance testing by reducing the possibility that correlated residuals downward bias standard errors. We also test, through cross-sectional analysis of the same data, whether there is any correlation between the interactions of social media use and perceptions of fake news saturation in the national media systems at the EU level.

We look for evidence of polarisation by comparing the estimated effect of social media use to the same variable's interaction with other sources of polarisation, such as non-centrist political beliefs. We will take interaction effects whose magnitude exceed those of the main effects as an indication that social media accelerates polarisation of beliefs about the EU by exacerbating already existing Euroscepticism.

Dependent variable

Our first dependent variable is a Eurobarometer question asking whether respondents tend to trust or tend not to trust the EU. We use this question as a proxy for someone's diffuse trust in the EU. As Armingeon and Ceka (2014: 81) point out, trusting the EU requires a belief that the EU will act on behalf of its citizens and implement policies in their best interest. However, polity support does not necessarily equal policy support. We therefore include a second dependent variable, a dummy indicating support or opposition to a common EU migration policy. As Harteveld et al. (2018) argue, this is an area in which one might find polarisation regardless of the type of media, and which is likely to trigger concerns over sovereignty. This policy area is thus a crucial case for the kind of effect we expect to find (Gerring 2007: 89).

Causal variable

The key variable of our study is how often respondents use online social networks (social media). The question is phrased 'Could you tell me to what extent you…? Use online social networks'. The response categories are 'Everyday/almost everyday', 'two or three times a week', 'about once a week', 'two or three times a month', 'less often', 'never'. This question offers two important improvements over a separate question asking about the respondent's primary news source for EU news. (1) First, self-reported media content recall is notoriously unreliable (Prior 2013: 114). Respondents may thus have been exposed to news about the EU through a range of different media, potentially

impacting any relationship between social media use and support for the EU. (2) Secondly, even those who use social media for other purposes than finding news about the EU may be exposed to Eurosceptic messages. This is especially likely among those who may have exhibited social media behaviour that may be a predictor of Euroscepticism, such as liking right-wing populist parties. We code 'no access to this medium' and 'Do not know' as missing values.

Media control variables

We rely on a broad range of control variables common in the media effects literature (Brosius et al. 2020; de Vreese and Boomgaarden 2006; de Vreese et al. 2016; Mosca and Quaranta 2017). We use the same control variables as predictors for both dependent variables. We first include a measure of political sophistication regarding the EU, which measures a respondent's objective knowledge of the EU through three questions. We dichotomise the measure of knowledge of the EU as either good or bad. We code all those answering with three 'Do not know' or wrong answers to the survey's factual questions as having low sophistication regarding the EU. Those with three correct answers are coded as having high sophistication. Our classification is identical to how the Eurobarometer typically scales knowledge of the EU. We consistently use low political sophistication regarding the EU as a control variable.

Knowledge of political processes is an important control variable, as higher levels of sophistication make it less likely for respondents to be swayed by counter attitudinal messages (de Vreese and Boomgaarden 2006). Specific knowledge of the EU has been found to independently correlate with support for the EU, even though the effect may be moderated by media effects (Karp et al. 2003; Marquart et al. 2019). It could thus be more important to control for specific knowledge of the EU, than political knowledge generally. We include, in addition, a specific measure of interest in EU politics, as those interested in politics generally may not have the same level of interest in the EU. Political interest is an important control variable in the study of media effects and has also been found to correlate with support for the EU independently of media exposure (Brosius et al. 2020; de Vreese et al. 2016).

Control variables for support for the European Union

In addition to the previous control variables, we include a wide range of control variables that are, to our knowledge, not previously used in the study of the effect of social media on support for the EU. These are common in the literature on public support for the EU.

The first such variable is trust in national institutions. We create an equally weighted index composed of variables measuring trust in the national government, parliament and political parties. Trust in national institutions and support for national governments has previously been found to predict support for the EU (Armingeon and Ceka 2014; Harteveld et al. 2013; Hooghe and Marks 2005). The index has a Cronbach's (1951) *alpha* of 0.8, suggesting that items

measure the same phenomenon. As the *alpha* is a controversial measure of dimensionality (Cronbach and Shavelson 2004; Sijtsma 2009; Taber 2018), we combine it with a parallel factor analysis (Hayton et al. 2004) of the three variables which suggests that they constitute one distinct variable. We also include a dummy for exclusive national identity. Exclusive national identities are found by previous research to be a strong correlate of Eurosceptic beliefs (Hooghe and Marks 2005). If one group of media users tended towards more inclusive identities, not controlling for this means that we may measure something other than the relationship between social media and support for the EU.

We include a similar measure composed of survey items measuring each respondent's perceptions about their country's economic and employment situation. Harteveld et al. (2013: 554), Hooghe and Marks (2005) and many others show how positive evaluations of a country's economy correlate with increased support for the EU. We assume that support for the EU also flows from positive evaluations of the national economic situation, making it a necessary control variable. That these are distinct variables is supported by a parallel factor analysis. Both indices have *alpha* values of 0.8.

Secondly, we include demographic variables used in the literature on public support for the EU (see Damstra et al. 2019; Gabel 1998; Hooghe and Marks 2005; Karp et al. 2003; Negri et al. 2021; van Elsas and van der Brug 2015). The first is political orientation on a left-right scale, with 0 being very left-wing and 10 very right-wing. We also include gender, age, level of education and manual worker status as a proxy for low income.

To operationalise pre-existing political polarisation, we construct dummies for left- and right-wing beliefs. That polarised and non-centrist beliefs on both sides of the political spectrum correlate with greater Euroscepticism have been found by previous literature (Leuffen et al. 2020; van Elsas and van der Brug 2015). Here, leftist beliefs are operationalised with values between 0-2 on this scale. Values 9 and 10 are coded as right-wing. Dummies for manual worker or white-collar worker status are proxies for low or high income. These groups may be expected to hold different amounts of human capital, which could also impact their support for integration (Gabel 1998: 346; Hooghe and Marks 2005: 434).

Regression model

Specific or diffuse support for the EU (Y) for each individual respondent $\boldsymbol{i}$ in country $\boldsymbol{j}$ can be expressed as a function of four sets of variables and a constant B_0. The constant represents the coefficient for a theoretical unit whose value on all independent variables was 0. (1) The first set of covariates is the respondents' primary source for news about the EU (X_1). (2) The second set is variables relating to political information about the EU (X_2). (3) The third set is variables that impact support for the EU regardless of media use, such as trust in national institutions or exclusive national identity (X_3), while (4) the fourth set is sociodemographic indicators (X_4). The model of support for migration policies and trust in the EU can be expressed as such:

$$Y_{ij} = B_0 + X_1\beta + X_2\beta + X_3\beta + X_4\beta \qquad \textit{(Equation 1)}$$

Our analysis comes with two caveats. The missing values may be non-randomly distributed, with some groups being more likely to abstain from answering surveys than others. This sample non-randomness might bias the estimates. In addition, there is the possibility that omitted variables may bias the results. However, we mitigate the omitted variable bias problem by including a wide variety of control variables relevant for explaining support for integration.

Results

In this section, we first show the cross-sectional single level models' results before proceeding to an analysis of the social media effects found in Hungary and Finland. The cross-sectional models have clustered standard errors, and corresponding confidence intervals, at the country-year level. The country models have standard errors clustered at the year level. Figures that show the coefficients of the control variables are reported as Appendix figures A1 and A2.

As shown in Figure 1, which details the effect of social media use on trust in the EU, there is little isolated effect of social media use on trust in the EU. This is evident by how the social media coefficients found in Figure 1 cluster along the zero and is in line with previous literature (Brosius et al. 2019), suggesting that the effect of digital media reliance may indeed be conditional upon previous polarisation.

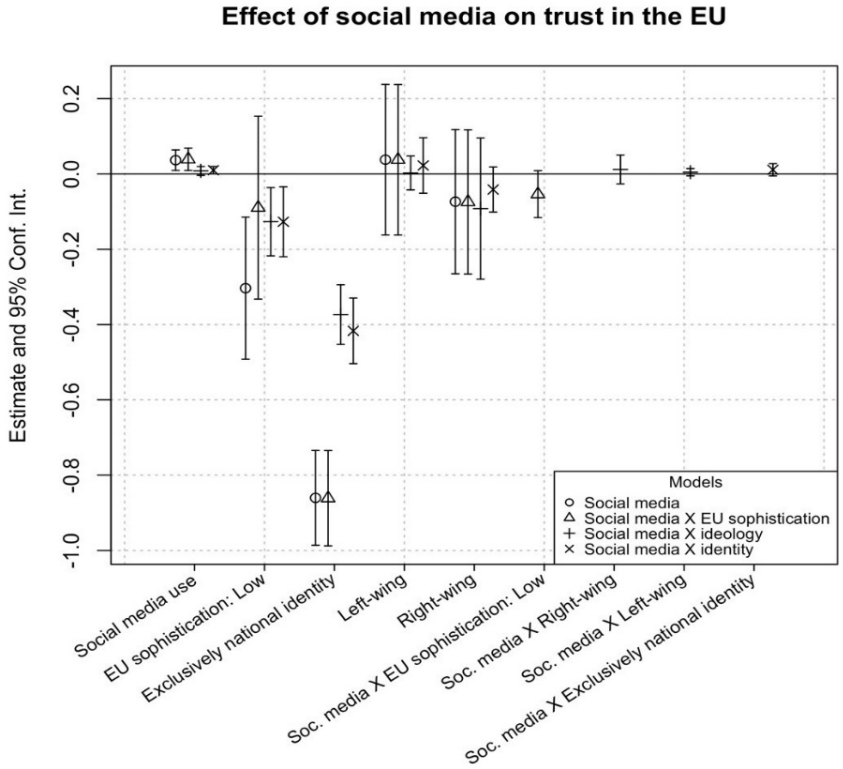

Figure 1: Trust in the EU. Fixed effects omitted. All effects log-odds. SEs clustered by country and year.

No significant correlation is found even for social media users with low levels of knowledge about the EU, which suggests that the connection between social media use and increased distrust may be more tenuous than our hypotheses suggest. The same pattern is found for support for common migration policies (Figure 2), as shown by the clustering of the social media coefficients around the line indicating no correlation.

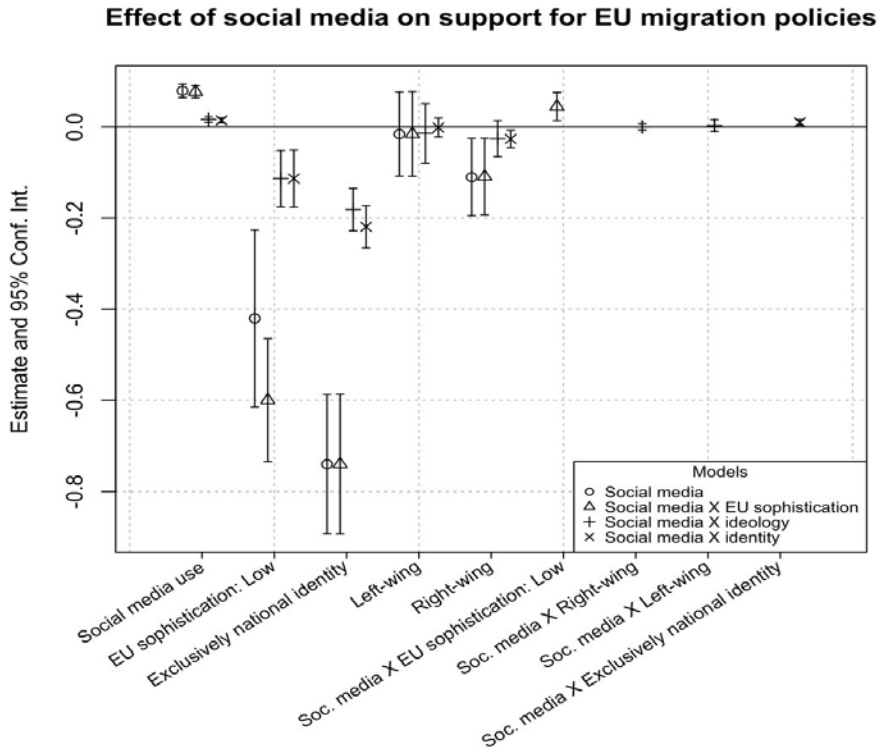

Figure 2: Support for migration policies. Fixed effects omitted. All effects log-odds. SEs clustered by country and year.

The absence from our findings of a consistent relationship between social media use and Eurosceptic beliefs regarding common EU migration policies, while potentially surprising in light of the subject area, is consistent with previous literature (Brosius et al. 2019; Marquart et al. 2019). We may infer, therefore, that such media effects may be highly context dependent. It is also noteworthy that the effect of social media seems to be increased support for EU migration policies among those with low levels of political sophistication. The consequence of such social media use, on the aggregate level, could thus potentially be to allow for a de-differentiation of preferences between individuals within member states.

However, analyses at the EU level do not take into account the strongly differentiated nature of European media systems and public spheres (Michailidou and Trenz 2020), and how they may lead to different social media effects. One important feature of such spheres is the prevalence of misinformation found inside particular media systems. We therefore need to analyse social media effects in countries with a different prevalence of fake news, as reported by respondents' perceived exposure to such misinformation. This is not only academically important. Key policy documents, such as the EU action plan to combat disinformation (High Representative of the Union for Foreign Affairs and Security Policy 2018), operate from an implicit assumption that social media are arenas uniquely able to spread disinformation and destabilise trust in institutions. Understanding whether such an effect of social media use is found in the country where the largest share of the population reports a weekly perceived exposure to fake news, Hungary, and the one where the smallest share does so, Finland, can help us understand whether this assumption is accurate.

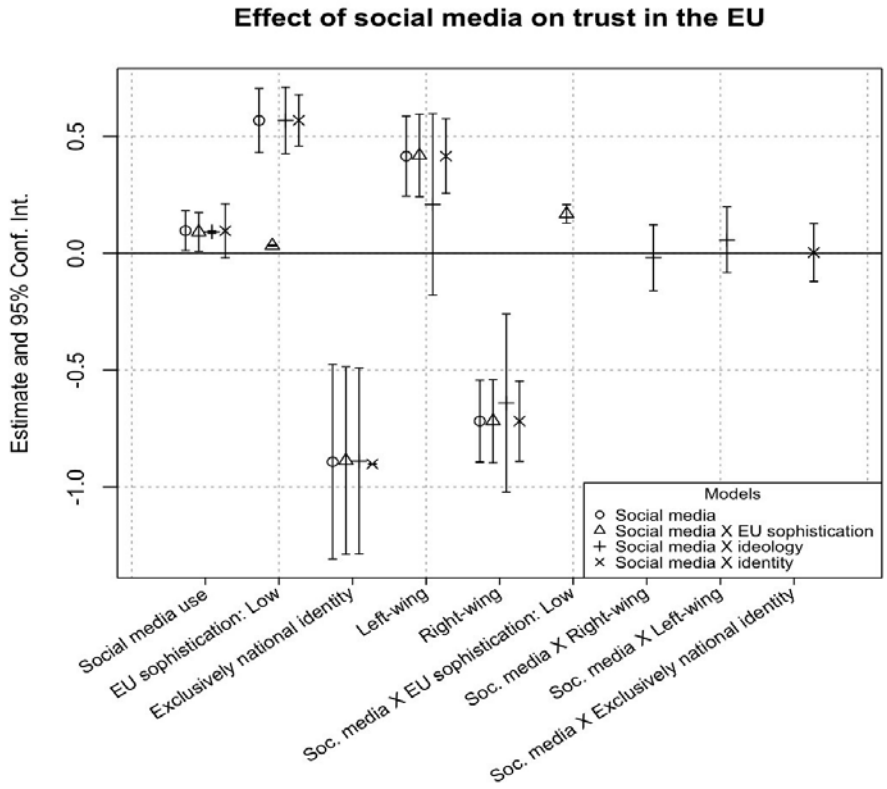

Figure 3: Trust in the EU in Hungary. SEs clustered by year. All effects log-odds. Fixed year effect omitted.

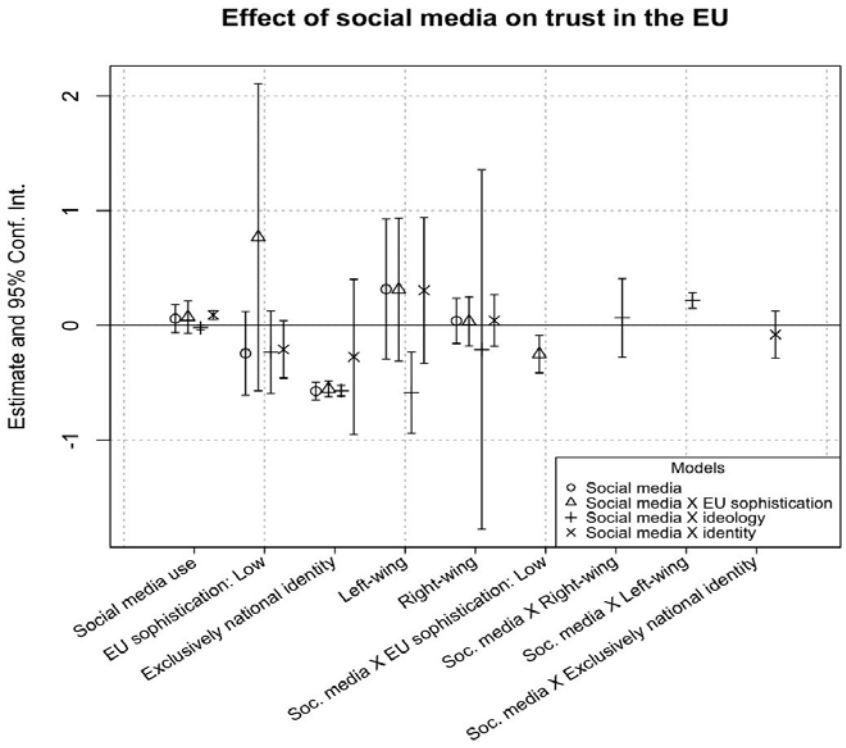

Figure 4: Trust in the EU in Finland. SEs clustered by year. All effects log-odds. Fixed year effect omitted.

The picture in Finland and Hungary, as shown by Figure 4 and 3 respectively, is similar to that of the EU as a whole. It seems, rather than driving further distrust in the EU, the interaction between social media and such predictors may occasionally be correlated with increased support when compared to the indicator of Euroscepticism alone. This is clear by how the interaction between social media use and the indicators of such Euroscepticism are much closer to the line indicating no effect in both analyses than the indicators of Euroscepticism indicating significant negative correlations. The one indication we find of a relationship consistent with our hypotheses is that social media seems to lower trust among those with low levels of political sophistication about the EU in Finland. The fact that there is no trend consistent with our hypotheses in either country raises questions about the strength of social media effects at the aggregate level. These questions are out of the scope of this paper but should be further investigated in future research.

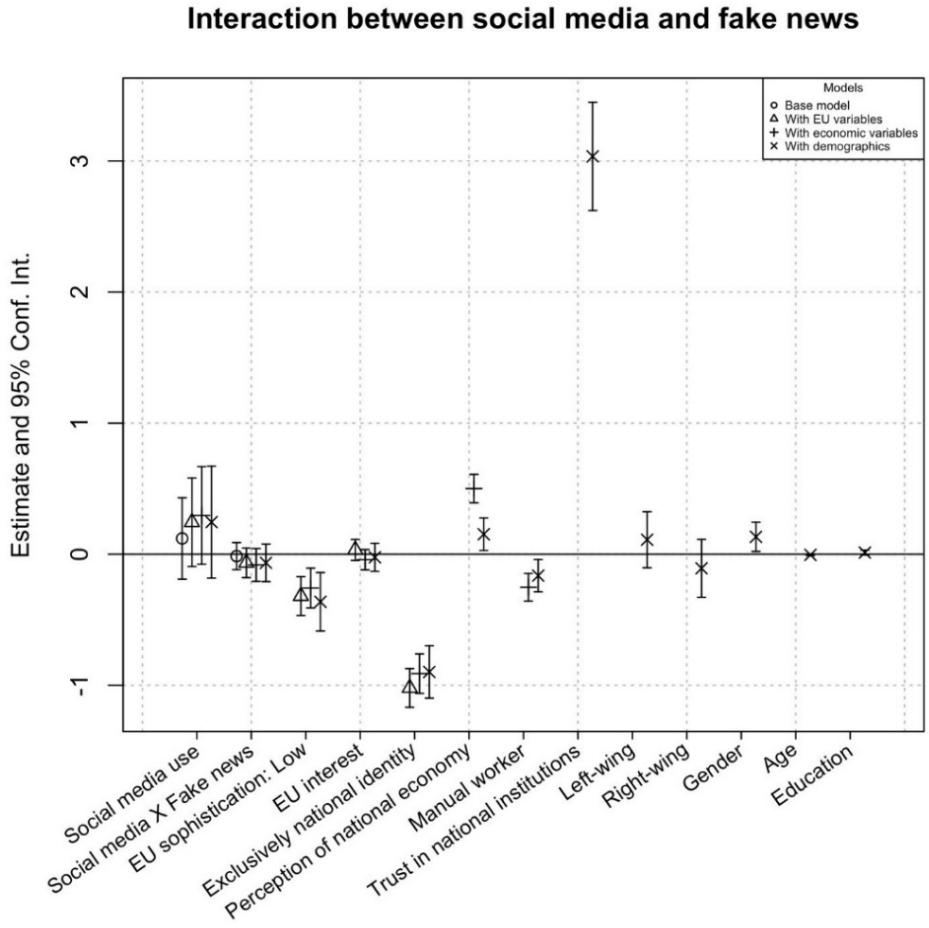

Figure 5: Support for migration policies. Fixed effects omitted. All effects log-odds. SEs clustered by country and year.

As shown in Figure 5, the same relationship also holds at the cross-sectional level, as there is no significant relationship between the interaction between social media use and fake news and decreased trust in the EU even when including all countries. As becomes clear from seeing Figure 5, the coefficients indicating the interaction between social media use and perceived fake news exposure are not correlated with a decreased probability of trusting the EU. This applies regardless of model specification, as shown by the stepwise modelling of Figure 5.

Concluding discussion

The results offer no consistent evidence for the hypothesis that social media independently decreases support for the EU. Furthermore, only the hypothesis that social media decreases support for the EU among those with little knowledge of the EU and exclusive identity is partially supported. However, the results are inconsistent and not found in the same samples. Thus, any effect of social media may be highly context specific and dependent on a wide range of variables outside of the scope of this study.

Bjola's and Papadakis's (2020) viral infection paradigm could be useful in explaining why social media use decreases trust in the EU specifically among Finns with little political sophistication regarding the EU, even though the effect is negligible. Bjola and Papadakis (2020: 643) argue that propaganda parts way with actual diseases in how it may be welcomed by parts of a citizenry, such as those with low levels of knowledge about the EU. These are, as previously established, more likely to be swayed by counter attitudinal messages. This explanation draws on the recent turn towards what Dahlgren (2018: 25) terms 'epistemic cacophony', where accepted facts and scientific modes of producing knowledge are presented as one of many equally valid truths. However, the fact that even individuals likely to be further polarised by social media use, like those with exclusive national identities, exhibit no consistent pattern of being so, indicates complex links between individual and societal polarisation. It thus follows that capturing a more accurate effect of social media polarisation requires a two-level research program, in which one measures the effect of specific content at the individual level, but also the effect of exposure to media systems at the aggregate level.

The almost non-existent support for our hypotheses in the Hungarian case is especially interesting, as the Eurosceptic discourse of the political elites in Hungary constitutes the kind of polarised public sphere that we consider conducive to societal social media effects. For instance, Hungarian prime minister Viktor Orbàn put forth a narrative in which EU actors wanted to transport foreigners to Hungary, altering the cultural make-up of the country, and that the current EU regime was a threat to the cultural cohesiveness of Europe (Hargitai 2020: 192). In addition to a generally Eurosceptic discourse, conspiracy narratives were purposefully used in the same period (Plenta 2020). These narratives framed George Soros as the leader of a plan to erode Europe's cultural heritage, colluding with EU decision-makers to increase immigration to Europe (Plenta 2020: 521). Given the prevalence of such frames in media discourses surrounding the EU in these years, and the polarising nature of social media, one would expect a stronger social media effect here. That these frames do not contribute to greater Euroscepticism when correlated with social media use, even in interaction with other predictors of Euroscepticism, suggests that the effects of exposure to individual frames do not necessarily aggregate to a national level. The absence of social media effects at the aggregate level does not discount or cancel the negative effect that social media may have on the democratic public sphere on the whole. Instead, effects may be more subtle and have individual effects that are softened at the aggregate level. This mitigation of a social media effect is in line with recent literature (Mosca and Quaranta 2017; Nguyen and Vu 2019).

The Finnish and Hungarian results raise important questions, especially given how member states' public spheres are differentiated. One question is whether the structural features of EU coverage, such as the background of EU correspondents, contribute to a de-differentiated coverage of the EU, which may explain why there is very little difference in the social media effects. Recent

literature has found that today's EU correspondents generally develop a weaker level of pro-EU socialisation than what was the case before, due to their shorter stays in Brussels (Lorenz 2017; Chronaki and Frangonikolopoulos 2020). This could arguably lead to more Eurosceptic coverage in both newer and older member states (Michailidou and Trenz 2020). However, given that the Hungarian case also features an element of what may be termed misinformation, in the shape of narratives positing that EU elites had the goal of altering Europe, it is a reasonable assumption that this would lead to stronger effects than what could be expected for exposure to Eurosceptic coverage in general. We thus need more research to establish why such narratives seem to have little bite, even within a social media infrastructure where such narratives may have the effect of exacerbating already existing Euroscepticism.

Our contribution to the extant literature is thus two-fold. We first show that the individual adverse effects of negative framing typically found in framing effect studies do not necessarily translate to the national level, despite the likely exposure to Eurosceptic discourse that we expect to be associated with social media use. We thus argue that any attempt to analyse social media effects needs to account for both individual and societal effects, as the former do not automatically aggregate to a national level. Such a research program must also explore how social media effects are conditioned by the quality of journalism, the functioning of the democratic public sphere and political efforts to counter negative effects of misinformation. Understanding the role of democratic public spheres in increasing the resiliency to misinformation, and why they may also fail to do so, can help understand how social media may lead to more fragmented public spheres more generally.

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Appendix

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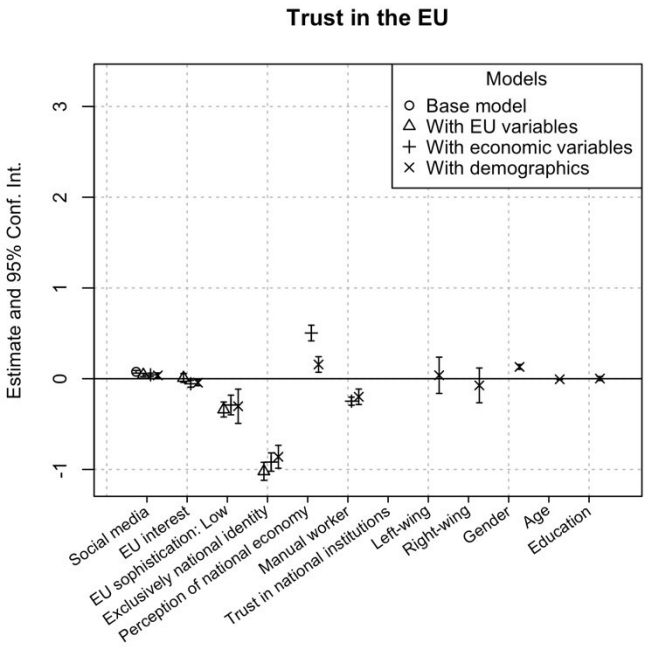
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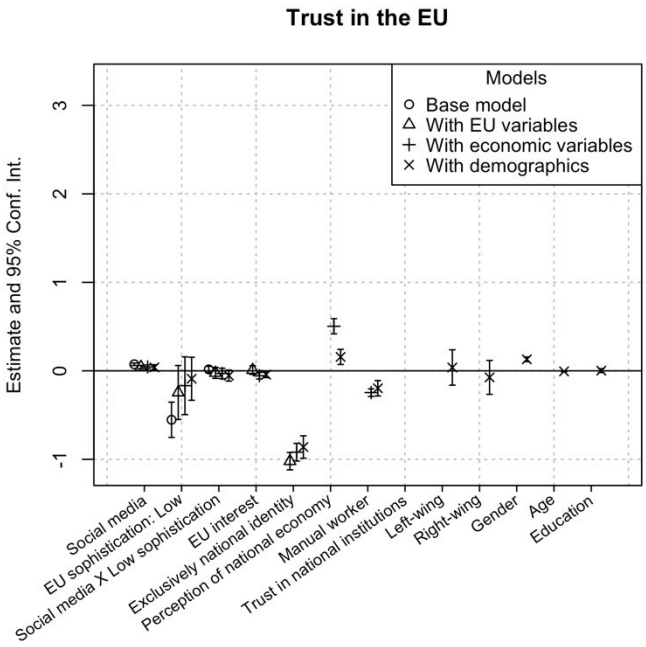
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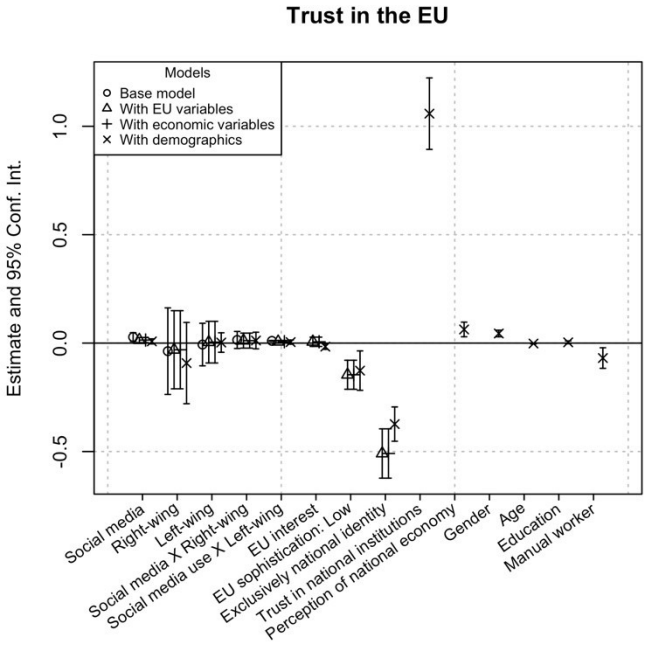
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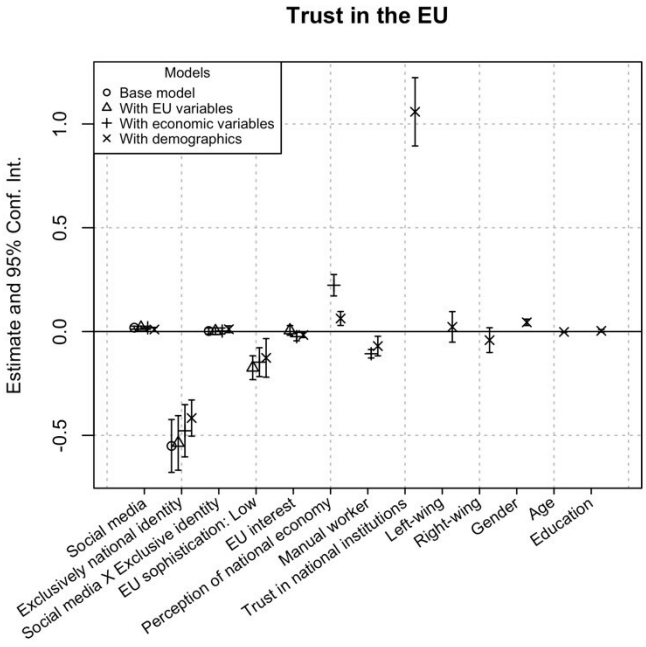
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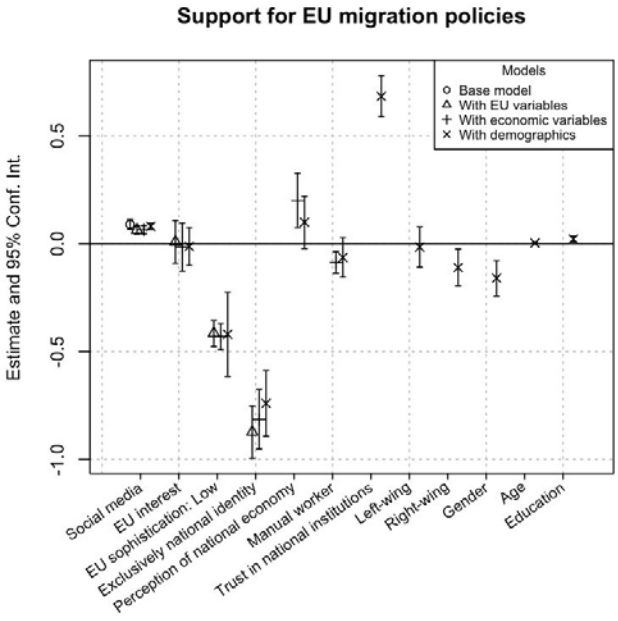
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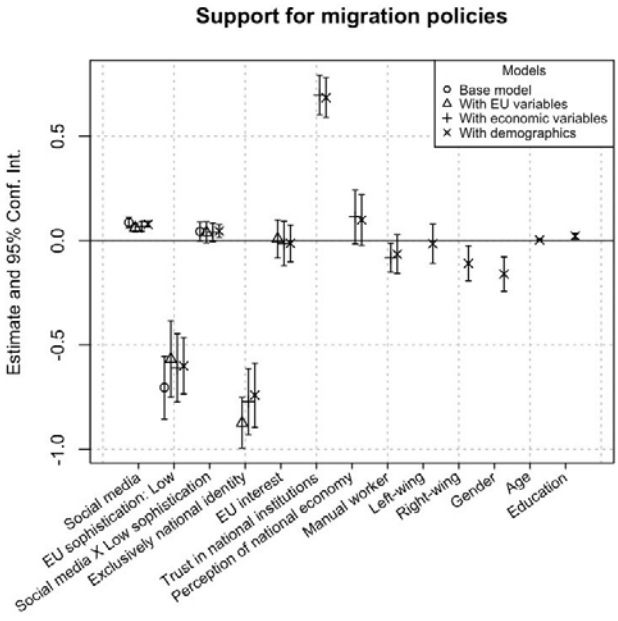
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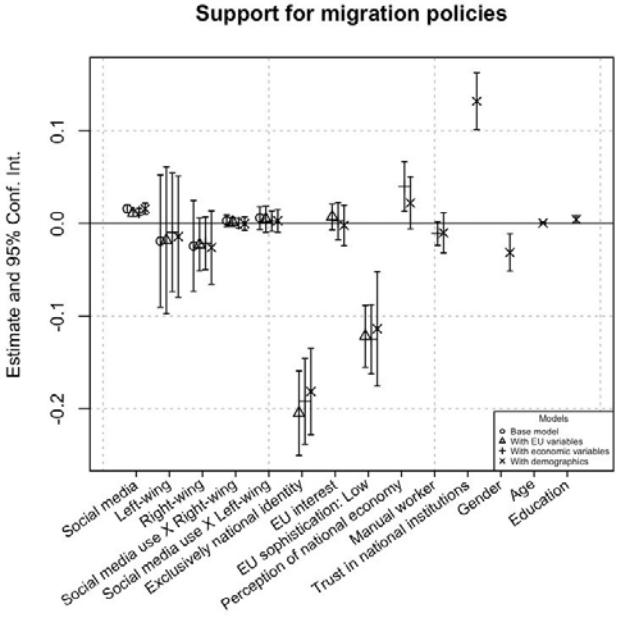
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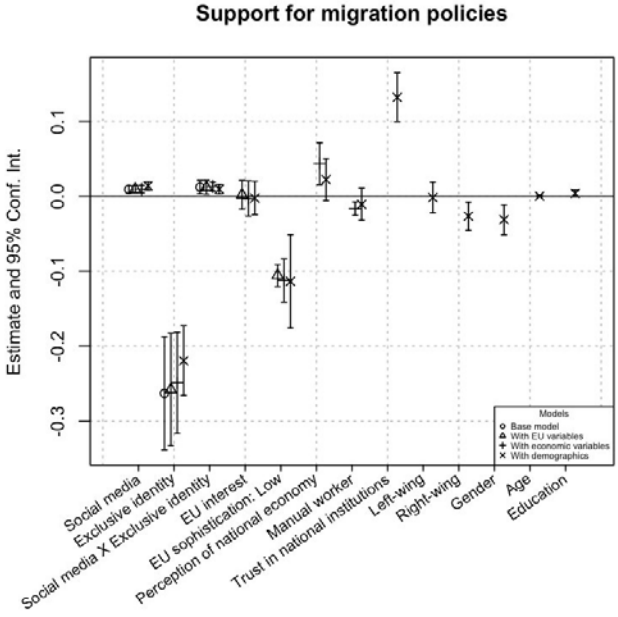
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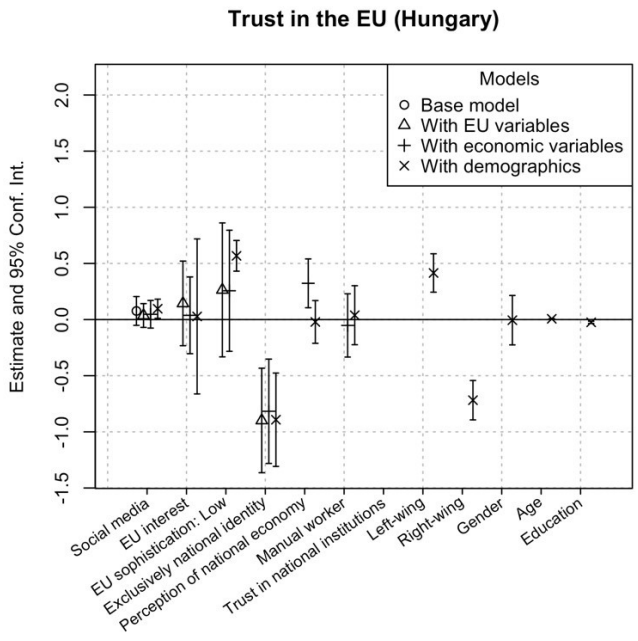
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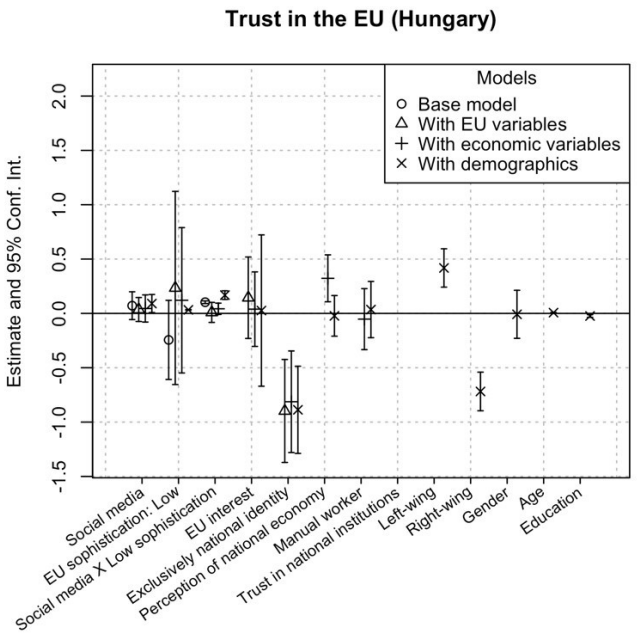
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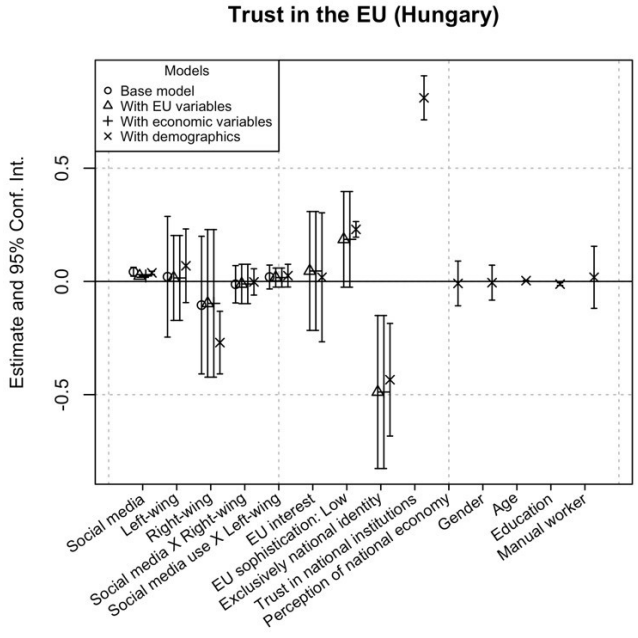
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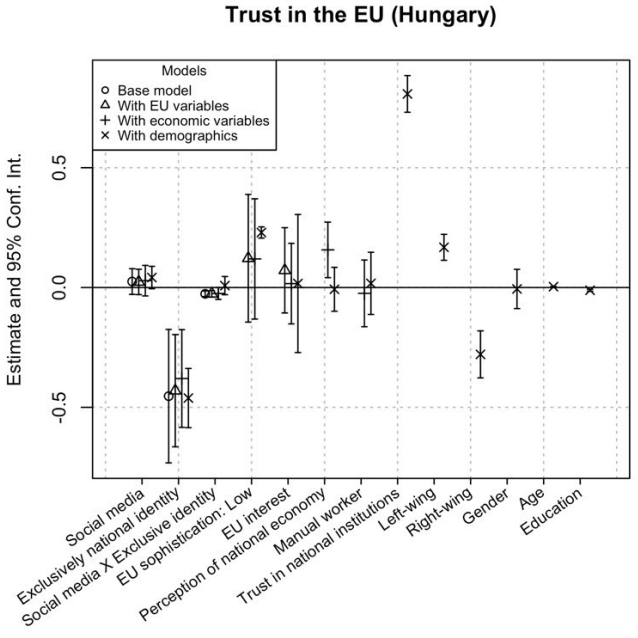
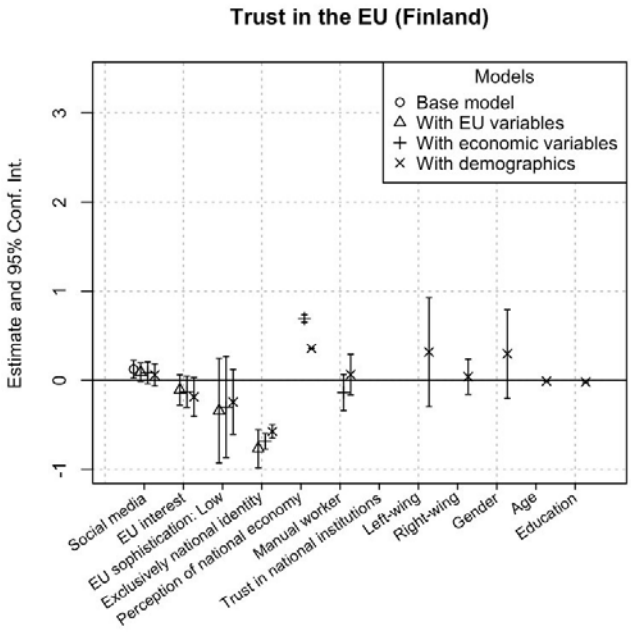
Right-wing
Social media X Right-wing
Social media use X Left-wing
EU interest
EU sophistication: Low
Exclusively national identity
Trust in national institutions
Perception of national economy
Gender
Age
Education
Manual worker


Trust in the EU (Hungary)
Models
Base model
With EU variables
With economic variables
With demographics
Estimate and 95% Conf. Int.
Social media
Exclusively national identity
Social media X Exclusive identity
EU sophistication: Low
EU interest
Perception of national economy
Manual worker
Trust in national institutions
Left-wing
Right-wing
Gender
Age
Education

A4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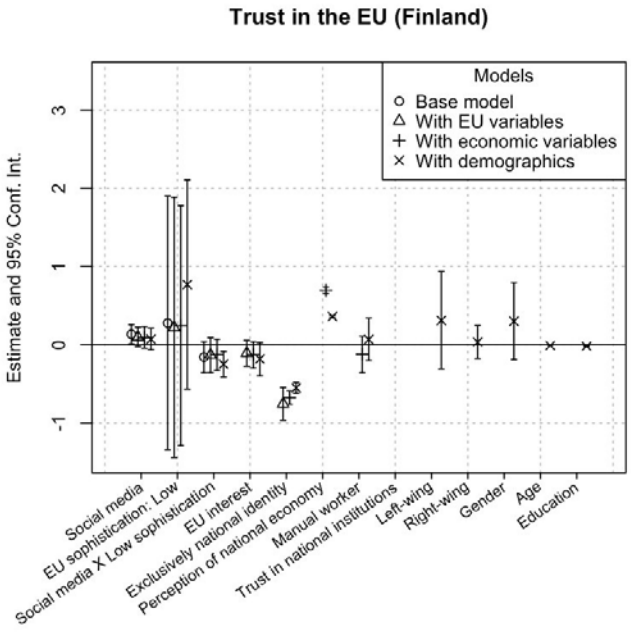
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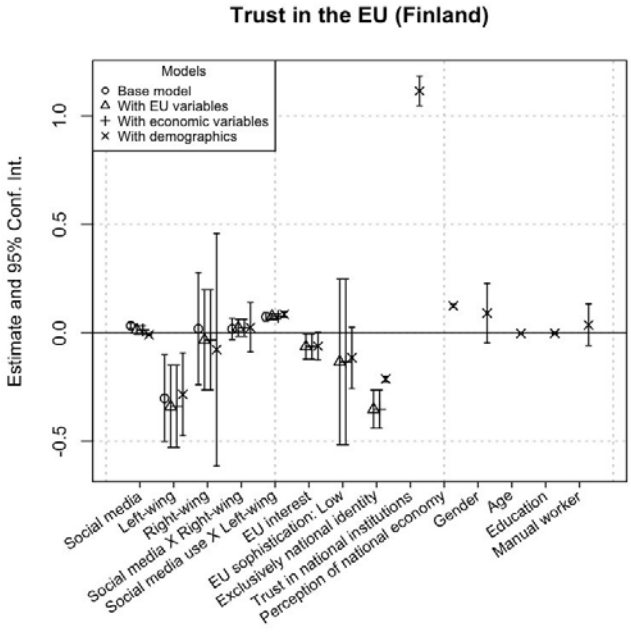
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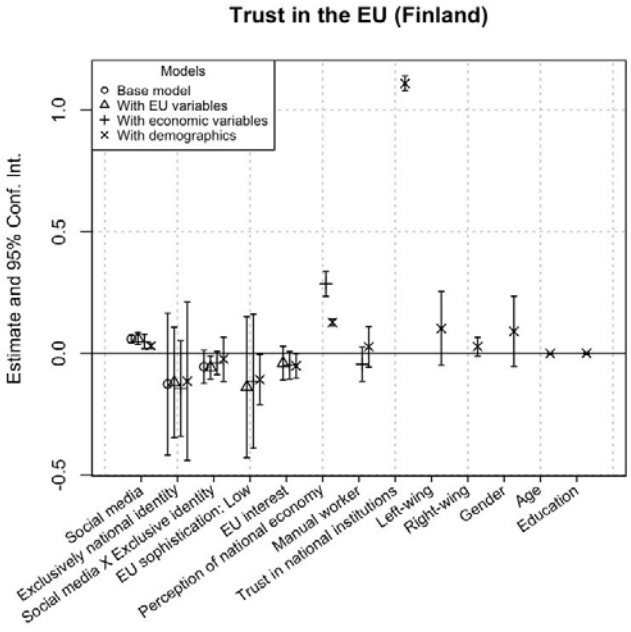
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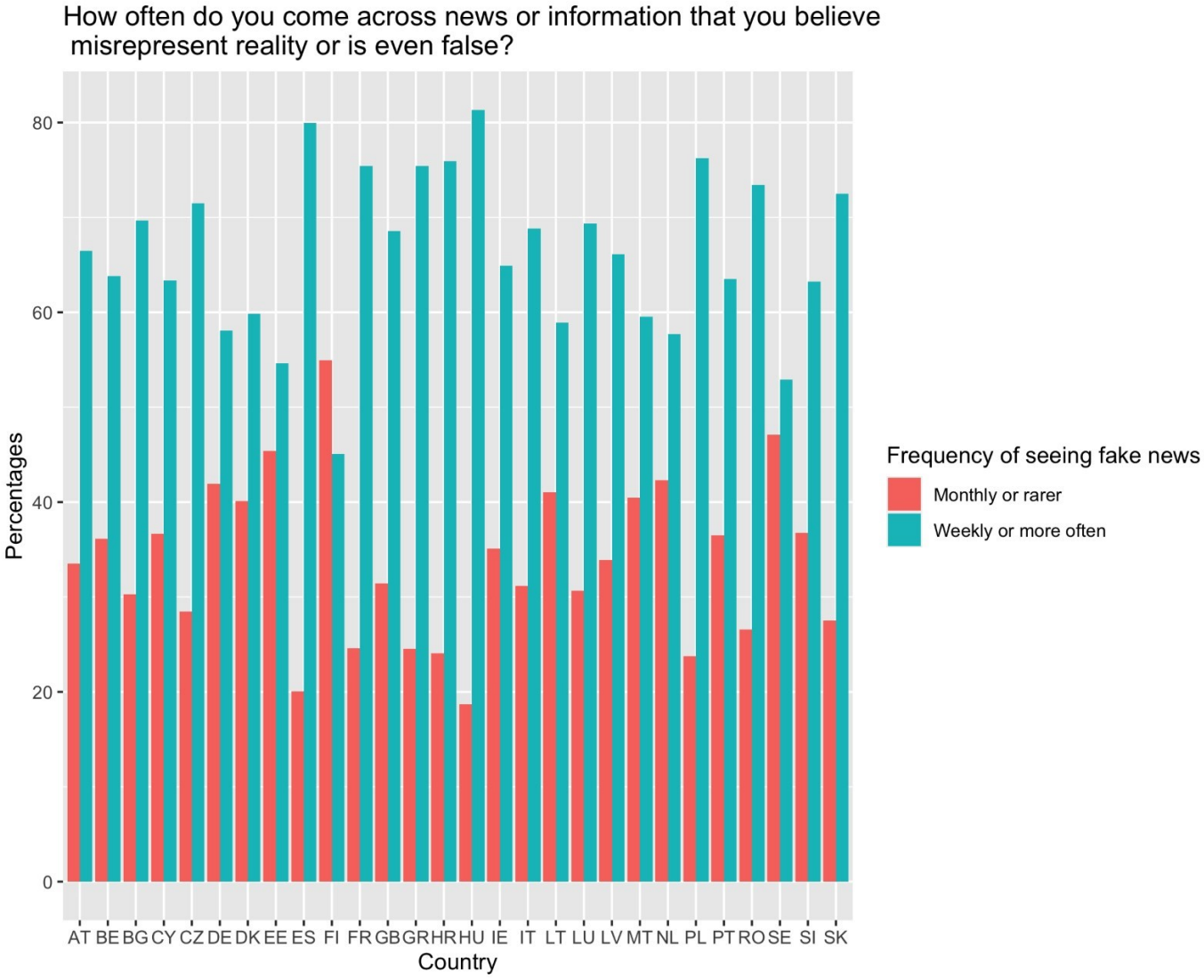
Trust in national institutions
Left-wing
Right-wing
Gender
Age
Education

A5


How often do you come across news or information that you believe misrepresent reality or is even false?
Percentages
80
60
40
20
0
AT BE BG CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LT LU LV MT NL PL PT RO SE SI SK
Country
Frequency of seeing fake news
Monthly or rarer
Weekly or more often

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