

When Ideology Matters More – Science and Vaccine Scepticism in Light of Political Ideologies and Partisanship during the Third COVID-19 Wave in Hungary¹

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Abstract: *As for the mitigation of the negative consequences of the coronavirus pandemic and the related crisis, governments should inter alia facilitate the willingness to vaccinate. However, related discussions became politicised, especially in countries with an extremely high level of partisan polarisation in opinions and media discourses, like in Hungary, which is the selected case of our study. As previous research about the United States shows, general trust in science is also influenced by the ideological alignment of individuals – people with conservative identification are more likely to question scientific results and recommendations, considering global warming, or the characteristics of the pandemic and the effectiveness of COVID-19 vaccines. In our study we examine two main questions: first, whether the ideological orientation and partisan alignment of Hungarian citizens influence their general trust in science, and second, whether the same factors influence their opinion on scientists' ability to develop effective vaccines against the coronavirus. Furthermore, we also investigate whether media consumption habits might influence these interrelations. According to the results of the representative online survey, the more conservative someone in Hungary identifies, the more likely they will be sceptical in terms of both questions. However, support of government or opposition parties does not determine whether they believe in the ability of scientists to develop effective vaccines, and it is influenced by their media consumption habits. We showed that (1) opposition supporters are much more different along their preferred media source than government supporters, (2) television watchers are of the same opinion independent of their party preference and (3) social media consumers*

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are generally more likely to reject scientific results. The phenomenon that supporters of the conservative government and of the alliance of opposition parties are different in terms of their media consumption is a surprising finding in the polarised Hungarian context. We provide two main explanations for this. First, it is most probably the consequence of the government's intensive campaign that encouraged vaccination. Second, the government used the issue of vaccination as a source of legitimacy regarding the effectiveness of their crisis management.

Keywords: *science scepticism, vaccine scepticism, public opinion, political ideology, partisan polarisation*

Introduction

Our study aims to contribute to the international literature on scientific scepticism from a specific perspective. Since 2020, the pandemic that has shaken the world has brought the issue of scientific scepticism to the fore, which may have been primarily reflected in the structure of opinion on vaccines during the COVID-19 pandemic. However, the science and anti-vaccine attitudes are not independent of a country's political situation and regime. In our study, we have therefore chosen a country that is a model country for political polarisation literature, Hungary. We believe that Hungarian trends can indicate how polarisation affects attitudes towards anti-science and, in particular, anti-vaccination.

The exogenous shock of the coronavirus pandemic crisis had a particular impact not only on political systems, but also on the perception of vaccines as the primary crisis management tool. The contingency that characterises politics in crises was particularly fraught with uncertainty since the beginning of the coronavirus pandemic, and governments were required to take crucial decisions and immediate actions in order to reach herd immunity by increasing vaccination rates in societies as quickly as possible. A further consequence of the exogenous shock is that the legitimacy of political institutions and the preservation of trust are paramount, while their lack can deepen the crisis further. The level of institutional trust determines not only the perceptions about the effectiveness of COVID-19 measures, but about the general management of pandemic crisis as well (Lieberoth et. al. 2021). To avoid further political crisis, political actors should reduce contingency and uncertainty and maintain a trustful environment (Körösényi et al. 2017: 18). This can be a particular challenge in extremely polarised countries like Hungary (Patkós 2019), which will be discussed as the case of our analysis in this study.

There are many methodological approaches to measuring partisanship and polarisation, and accordingly there is not a complete scientific consensus on

their measurability. However, there is a consensus that Hungary is one of the most polarised democracies in Europe in terms of partisan polarisation (Körösényi 2012; Palonen 2009; Patkós 2019). According to Veronika Patkós's extensive works on partisan polarisation, several types of polarisation can be distinguished: legislative, political, emotional, ideological and relational polarisation (Patkós 2015: 30). If we consider ideological polarisation, the most commonly applied measure is the left-right alignment of citizens. András Körösényi concluded that in Hungary, since the regime change, the liberal-conservative scale is the most frequently used conceptual framework besides the former left-right measures – our study will be analysed on the basis of the latter (Körösényi 2012: 3). One important characteristic of polarisation is that the position of the supported party on certain public policy issues significantly determines the opinion of its voters. The concept of partisan polarisation, as formulated by Veronika Patkós, goes back to party identity theory and does not consider voters' public policy preferences as a given, but considers party affiliation as the fundamental determinant of any position or opinion, i.e., it also explains public policy preferences – such as the judgement of a vaccine – by party identity (Patkós 2015: 31). Consequently, if vaccines are considered as the primary crisis management tool against the coronavirus pandemic, trust in scientific results and the ability of science to develop effective vaccines are crucial to handling the coronavirus crisis, and thus, partisan positions might be decisive.

Therefore, to understand related attitudes in more detail, trust in science during the coronavirus crisis should be scrutinised more carefully in terms of partisanship and ideology, and the Hungarian case can provide informative and valuable lessons in this regard. However, these aspects are not exclusive in terms of the assessment of anti-covid vaccines. The critical role of trust in science in terms of compliance attitudes with COVID-19 measures was already explored in several papers (see e.g. Plohl – Musil, 2021), but the role of ideological and partisan polarisation still remained under-discovered. More generally, the example of the United States has been used to report several results that go beyond the critical or pro-science stance that is typical for Republicans and Democrats in general (Bauer et al. 2000; Gauchat 2012). However, previous research highlights science scepticism of conservatives in particular (Latkin et al. 2021; McCright et al. 2013; Mooney 2012; Lewandowsky et al. 2013), and this is confirmed by the climate change and crisis-related scepticism as well, which have been on the rise in recent years. While acceptance of the scientific consensus aligns with the personal beliefs of Democrats (and higher educated people), conservatives and Republicans are less receptive to scientific discourse and evidence on global warming (Dunlap – McCright 2016). The Republican think-tank world also produced a significant amount of knowledge on this issue, with 92 percent of climate scepticism books published between 1972 and 2005 (Jacques et al. 2008). This clearly demonstrates the responsibility of political

groups and surrounding intellectuals in attitudes towards scientific activities and developments.

Beyond general science – and climate change scepticism, US Republicans show significantly less concern about the coronavirus pandemic compared to Democrats (Conway et al. 2021); moreover, Republicans consider government measures less necessary (Cakanlar et al. 2020). Cakanlar and his colleagues also pointed out that behind these considerations there are political, rather than empirical, reasons. Namely, conservative people are not threatened more by the health or economic consequences of the coronavirus than liberals are. Other researchers also highlighted the importance of media coverage of the coronavirus and showed that Republicans create significantly more posts that downplay the seriousness of the coronavirus or suggest conspiracy theories behind the current state of the world (Calvillo et al. 2020, Havey 2020). However, some research reject the media's polarising effect on the opinions on the coronavirus (see e.g. Meyers 2021). Therefore, differences in opinions most probably root deeper than in differences in sources and content of daily news consumption.

However, as emphasised above, most related research examined the US population, and we have less knowledge on other partisan countries, especially from the European context. Furthermore, as in most policy issues in polarised countries, media consumption habits play an important role in citizens' opinion. Namely, the type of media from which people get most politics-related information seriously influences their positions on certain topics. This is mostly due to the polarised media system of Hungary, which has been established since 2010 (Bajomi-Lázár 2013). Consequently, media channels mostly reflect the standpoint of either the governing or the opposition parties, and since most citizens' media consumption remains in their 'opinion bubble', media effects are highly relevant in these cases.

The purpose of our study is to explore the interrelations between ideological alignments, partisan positions and media consumption habits of individuals, and how much they trust science in general and accept scientific recommendations in relation to handling the COVID-19 pandemic in the Hungarian context. Thus, we examine the following questions:

- RQ1. Do ideological and partisan polarisation persist among Hungarian respondents on a specific issue like COVID-19 vaccination?
- RQ2. Are supporters of the Hungarian governing right-wing party Fidesz also characterised by the science scepticism of conservative citizens in the extremely polarised United States?
- RQ3. How do media consumption habits influence the above interrelations?

To answer our research questions, we present the theoretical considerations behind the relationship between trust in science, ideology and partisanship, and introduce the results of an online survey analysis conducted in Hungary.

Science scepticism, ideology and partisanship

Trust in institutions and scientific results is a key factor in judging the effectiveness of vaccines, but, as a previous study in this regard showed, good perception of crisis management can also be associated with low vaccine tolerance (Figueiredo – Larson, 2021). General science scepticism and the related cultural influences clearly affect individual perceptions on the role of science in managing the coronavirus crisis, since vaccine discussions are also embedded in broader political and social discourses. In this respect, communication and media content on social and political polarisation play a particularly important role. Research on the coronavirus outbreak in Brazil has shown that supporters of the virus-sceptic president Jair Bolsonaro are not only less informed about the virus, but also more likely to accept conspiracy theories about it (Gramacho et al. 2021). Furthermore, some populist governments are more likely to relativise the consequences of the pandemic, namely, they tend to exaggerate the effects of the threats of the coronavirus to ensure their indispensable role in crisis management. A further aim is to represent the ‘offended’ people in their communication, opposed by elite groups, such as experts, pharmacies or supranational organisations, like the World Health Organization (WHO). The constant changes in the WHO’s publicly communicated position regarding how much various measures can prevent someone from being infected (e.g. the effectiveness of surgical masks or keeping distance) also caused serious confusion and hindered governments to carry out consistent policies against the spread of the coronavirus.

As a result, the followers of populist governments may not take health measurements seriously, which can strengthen science scepticism further (Baylerlein et al. 2021). Jonathan Kennedy has already shown in a study before the outbreak of the coronavirus crisis that the institutional critique of populist parties – which is manifested in both political and scientific communities – has an impact on their vaccine hesitancy (Kennedy 2019).

Perceptions about the coronavirus measures are distorted by the high degree of affective polarisation in the United States, to the extent that they are judged solely in terms of support and rejection of the Trump administration (Druckman et al. 2020). Partisan differences in opinions have increased as the virus has spread in the United States, and this has been reflected in vaccination rates as well. Donald Trump’s scepticism about the coronavirus was associated with a decreasing willingness to vaccinate among his supporters, compared to Biden’s supporters (Kates et al. 2021).

Considered as another textbook example of extreme partisan polarisation, Hungary appears to demonstrate a similar case to that of the United States: late March 2020 survey results showed supporters of the governing Fidesz-KDNP, as opposed to other electoral groups to perceive the health care system as prepared to deal with the coronavirus epidemic, and to believe the government’s pandem-

ic information policy to be adequate. The extent of the government-opposition polarisation is illustrated by the fact that only one in twenty opposition voters agreed with the related statements on the latter issue (IDEA Institute 2020a).

The polarisation in the perception of different types of vaccines increased dramatically in the summer of 2021 in Hungary. The epidemic and its management had been constantly politicised, and the issue's political discussion had evolved in line with expectations, including the question of the health system's preparedness, the government's management of the crisis in the early stages of the epidemic, and the assessment of the Eastern and Western vaccines as well. While government supporters demonstrated much higher tolerance of Eastern vaccines, opposition supporters remained extremely critical of them. Seemingly, the politics of an 'Eastern opening' of the governing party, which has been characterising the values and policies of the Orbán governments in the last 12 years, was represented in vaccine diplomacy and related public attitudes as well. Strong diplomatic and economic relationship with countries like Russia and China has been an important and transparent aim of the Hungarian prime minister since 2010.

During the second wave of the epidemic in Hungary in December 2020, the proportion of people unwilling to be vaccinated (48 %) was also significant compared to the global vaccine refusal rates (IDEA Institute 2020b). This was particularly significant given that, despite Hungary's regionally high vaccination willingness at that time (The Wellcome Global Monitor 2018), 20 % of the population is characterised by a general scepticism and anti-vaccination attitude (Political Capital 2018).²

The Hungarian Central Statistical Office (HCSO) has regularly published the KSH Weekly Monitor since the end of November 2020, which also asked about COVID-19 vaccinations.³ According to the report of 21 December 2020, only one in six to one in seven of those surveyed were sure that they would be vaccinated. A more meaningful increase in confidence in vaccination and recognition of the need for vaccination can be seen as a consequence of the third surge in the epidemic, which was accompanied by extremely high mortality rates. This was compounded by the lack of direct experience and feedback on the vaccine, which was still in the test phase at the time (Nardi – Troiano 2021). Hungarian people's vaccination attitudes may have been strongly influenced by the fact that the government was the only one in the EU to diversify its procurement of experimental vaccines: in addition to 24 million doses of Western vaccines, it ordered 7 million doses of Eastern (Chinese and Russian) products, which were

2 Source: Euronews, 26/03/2020. See: <https://hu.euronews.com/2020/03/26/idea-a-magyarok-tobbsege-szerint-az-egeszsegugy-nem-kap-eleg-tamogatast-a-jarvany-megfekez>.

3 Source: KSH Weekly Monitor. See: <https://www.ksh.hu/heti-monitor/covid.html>.

not formally adopted by the European Union until the completion of this study. Hungary was second in the EU after Malta to reach 50% vaccination coverage (Our World in Data 2021), but the rate of vaccination coverage growth slowed down significantly in the aftermath, ending up in the middle among EU countries by early September 2021 (Mathieu et al. 2021).

Data, variables and methodology

Our research questions are analysed by using survey data via self-completed online questionnaires. There were two rounds of data collection, the first between 20 and 25 April 2021 and the second between 20 and 25 May 2021.⁴ This was the period of the third coronavirus wave, when the vaccination process accelerated in Hungary, and the government's political communication focused on convincing people to get vaccinated. The online sample was collected by IDEA Institute from users of the entire Hungarian web and social media through CAWI surveys, and the N=3410 sample is representative of Hungarian society in terms of gender, age and region. Besides these population rates, sample weighting considered factors such as the respondents' web and Facebook usage, the time spent on social media platforms and how actively they use these social network sites. The margin of error is ± 2.2 percentage points. Our hypotheses on general science scepticism and specific scepticism about science's ability to develop effective vaccines were tested using logistic regression models, media consumption habits are included as additional interaction terms.

The questionnaire operationalises our research questions on general scientific scepticism with the following statement: 'Most of the time scientific results appear to be just a cover, and researches seem to serve political and economic interests.' Trust in the ability of scientists to handle the coronavirus with effective vaccines is measured by the statement: 'Scientists worldwide are doing their utmost to properly understand the nature of the coronavirus and to develop effective vaccines against it.'⁵ Respondents agreeing or strongly agreeing with the above statements were assigned an index of 1, while those disagreeing or strongly disagreeing received a 0 index. With regard to the interpretation of estimations, it should be noted that sceptical attitudes mean agreement with the first statement and disagreement with the second statement. Correlation between the two variables is $r = -0.479$, meaning that general distrust in science can indeed determine vaccine scepticism.

4 For the analysis we integrated these two survey rounds and analyse them together, since public opinions, even on COVID-19 related issues, do not change significantly within one month. However, this way the high number of cases will result in a strong reliability of regression results.

5 While the formulation of the first question relies on recent studies about climate change attitudes and the politicisation of sciences (see e.g. Yan et al. 2021; Bolsen – Druckman, 2015), the question about scholars' ability to develop effective vaccines was formulated to be answered as least automatic as possible, relying on the first question, and thus, to uphold the external validity of these survey questions.

Media consumption habits are measured by the question: ‘From which sources do you mostly get information about the coronavirus?’ Respondents were able to mark television, online news portals or social media as the most important source of information. In order to arrive at comparable logistic regression models, we included the same set of control variables in every case. These control variables are the following: respondents’ political preferences and attitudes, and important sociodemographic characteristics. The most important explanatory variables of our research are the respondents’ ideological orientation on a liberal-conservative scale from 1 to 5, and their party preference, where, based on the polarised political situation in Hungary, we compared government supporters with supporters of the alliance of opposition parties. In terms of sociodemographic characteristics, we considered the respondent’s gender, size of settlement, level of education, age and their expected financial situation in relation to the coronavirus crisis. The latter was constructed as a factor variable consisting of five scales that measure the various perceived financial threats that individuals have to face because of the economic crisis caused by the coronavirus pandemic.

Results

We ran every possible combination of the interaction between party preference and various media channels, but only highlighted those in our study, where the interaction terms provided significant results (see Appendix 1–3.). The estimations between ideology, party preference and the two types of science scepticism are consistent in every model and thus provide satisfying answers to our first two research questions. The logistic regression models meet the necessary criteria, meaning that the R square indexes provide satisfying and acceptable results (Peng et al. 2002).

Generally it is shown that the respondents’ ideological orientation significantly influences both their general trust in science and their specific trust in the ability of scientists to develop an effective anti-Covid vaccine. As the estimations of our featured independent variable shows, the more conservative the respondents, the more likely they are to be sceptical about science in general and the less likely they trust scientists’ efforts to develop effective vaccines against the coronavirus disease. In contrast, pro-Fidesz stances have a significant effect only on general attitudes towards science, showing that Fidesz supporters are less likely to be sceptical with science in general. Thus, the high degree of partisan polarisation, which is otherwise present in Hungarian society in various issues, cannot be observed in relation with confidence in scientists to develop effective vaccines, namely, partisan alignment and trust in coronavirus vaccines are independent.

Table 1: Descriptive statistics of variables in our regression models

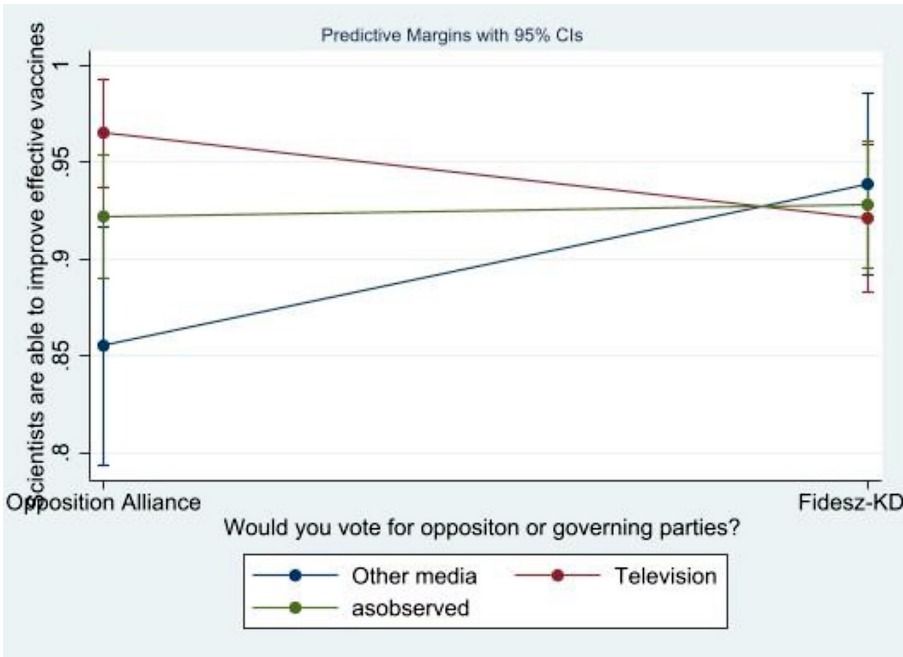
	Minimum	Maximum	Mean	Standard deviation
Dependent variables				
Scientists worldwide are doing their utmost to properly understand the nature of the coronavirus and to develop effective vaccines against it (1: agree, 0: does not agree)	0,00	1,00	0,11	0,31
Most of the time scientific results appear to be just a cover, and researches seem to serve political and economic interests (1: agree, 0: does not agree)	0,00	1,00	0,40	0,49
Political ideology and party preference				
Would you consider yourself rather a liberal (1) or a conservative (5) person?	1,00	5,00	3,00	1,15
Would you vote for Fidesz (1) or the Opposition Alliance (0)?	0,00	1,00	0,44	0,50
<i>Most typical type of media where they gather information and news about the coronavirus? 0: not indicated, 1: indicated</i>				
Television	0,00	1,00	0,51	0,50
Online	0,00	1,00	0,64	0,48
Social media	0,00	1,00	0,60	0,49
<i>How did the coronavirus influence your financial situation? (-1: got worse, 0: did not change or it does not exist, 1: got better)</i>				
Income	-1,00	1,00	-0,30	0,62
Savings	-1,00	1,00	-0,24	0,62
Paying bills	-1,00	1,00	-0,25	0,51
Loan repayment	-1,00	1,00	-0,17	0,49
Financial support for family members	-1,00	1,00	-0,30	0,59
Socio-demography				
Size of settlement	0,00	100,00	44,45	35,82
Education	0,00	20,00	12,32	2,66
Male (1) Female (0)	0,00	1,00	0,47	0,50
Age	17	89	47,89	16,06

Source: IDEA Institute, April-May 2021. Authors' own compilation.

There is also a significant correlation between coronavirus information sources and trust in science. However, while information from online news portals significantly decreased the likelihood of distrust in science both in general and increased trust in science in relation to the coronavirus, information from social media does not have an influence on it. Respondents who learn about the coronavirus primarily from television are significantly more likely to trust scientists’ ability to treat the virus effectively. This is presumably due to the aforementioned predominance of pro-government views in television content (Bajomi 2013) primarily aimed at maximising the rate of vaccinated people within Hungarian society.

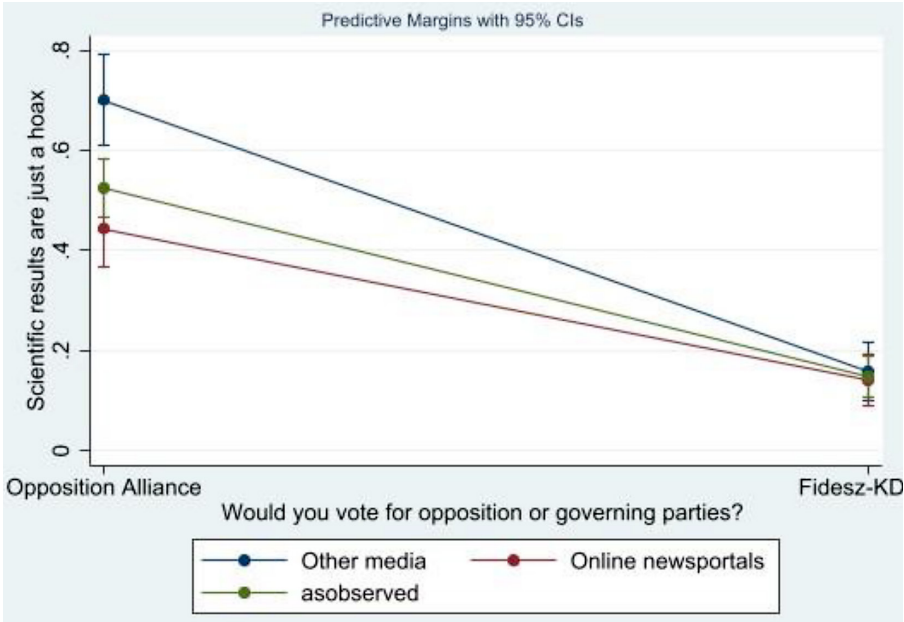
To get answers to our third research question, we included several interaction terms in our logistic regression models. The interactions measure the joint correlation of ideology and media consumption habits (whether the respondent gains information about the coronavirus primarily from television, online news portals or social media) related to science scepticism. The following three figures illustrate the margins plot of the significant interactions.

Figure 1: Party preference & Television on scepticism about scientists’ ability to improve effective vaccines



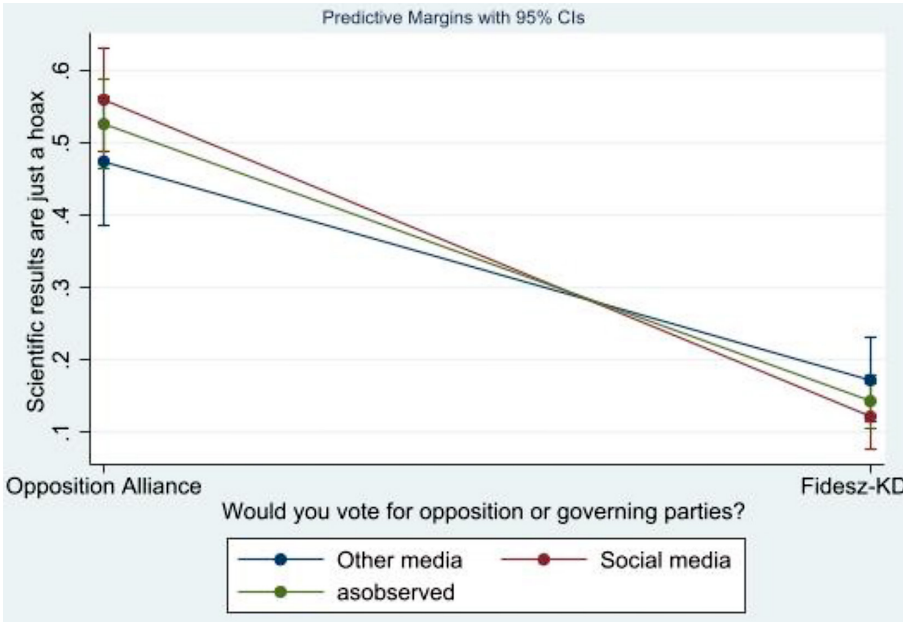
Source: IDEA Institute, April-May 2021. Authors’ own compilation.

Figure 2: Party preference & Online news portals on general science scepticism



Source: IDEA Institute, April-May 2021. Authors' own compilation.

Figure 3: Party preference & Social media on general science scepticism



Source: IDEA Institute, April-May 2021. Authors' own compilation.

What these interaction terms show is that while government supporters share the same opinions on issues independent of the source of information, opposition voters are different in these terms. We see that opposition voters who gain coronavirus relevant information mostly from television are significantly more likely to believe that scientists are able to improve effective vaccines. Moreover, these people's opinion does not differ significantly from the government supporters' stances. On the other hand, those opposition supporters who read online news portals primarily are less likely to claim that scientific results are usually just a hoax. Last, opposition supporters who read covid related news in social media are significantly more likely to believe that science is a hoax compared to government supporters. This is most likely due to the fact that 'fake news' and science sceptical stances are mostly found on social media channels, and, as previous research already showed, people who most often read social media newsfeeds are most likely to be influenced by this information (Kreko 2020).

Previous research results are confirmed by the fact that the level of education has a particularly significant role in the respondents' trust in science: the higher the respondent's educational level, the less likely they are to be sceptical about science in general and its ability to develop effective vaccines in particular. In addition, people facing financial difficulties are more likely to trust scientists in improving effective COVID-19 vaccines, whereas older respondents are more likely to demonstrate general science scepticism. However, age does not determine trust in science's ability to develop effective vaccines.

In conclusion, we can state that the logistic regression analysis provided answers to our research questions: although conservative people tend to demonstrate significantly more scepticism concerning scientific activities in general and COVID-19 vaccines in particular, individual partisan positions on these questions are modified by their media consumption habits. Therefore, although the ideological position of Fidesz supporters would suggest lower trust in science in relation with COVID-19 as well, the government's clear position about the importance of vaccination mitigated the role of political ideology in opinions about how science is capable of managing the unknown epidemic and economic situation caused by the coronavirus pandemic.

Conclusions

In our study, we wanted to contribute to scientific scepticism literature. We investigated how anti-science and anti-vaccine attitudes have developed due to the pandemic in Hungary. This country is considered a model country in the international scientific literature on political polarisation. In particular, we investigated how ideological polarisation influenced attitudes towards science and vaccination during the pandemic.

As we emphasised at the beginning of our study, the exogenous shock of the coronavirus epidemic has had a global impact on political systems as well as on opinions and attitudes. In a country as polarised as Hungary, the government's most important task was to endogenise the effect of the exogenous shock, to reduce contingency and uncertainty, and maintain an environment of trust (Körösényi et al. 2020). This especially applies to trust in science and scientific results, which determines civil compliance with scientific guidelines. Increased trust and cooperation contributes to a more effective mitigation of negative pandemic consequences. Although the Hungarian government initially did not acknowledge the real consequences of the coronavirus, they soon took the lead and became the primary administrator in this issue. Since the end of 2020, their legitimacy is based on the success of vaccination, which they communicate extensively. Relying on their overwhelming presence in media ownership, the communication could effectively persuade at least the governing party's supporters.

However, in the extremely polarised Hungarian political environment, it is not evident that Hungarian respondents have followed the strong governmental will and intentions regarding COVID-19 vaccination. Indeed, if Fidesz supporters are characterised by a similar science scepticism to that of self-proclaimed conservatives in the US (Lewandowsky et al. 2013), this may also be reflected in attitudes towards vaccines. Reservations about science may spill over into vaccine refusal, leading to lower vaccination coverage and even a loss of legitimacy for the governing right-wing party.

However, our results show a much more complex picture. There is a divergence of opinions between general science scepticism and coronavirus vaccine-specific scepticism. While science scepticism among Fidesz and conservative voters is very similar to that of Republican voters in the US, meaning that they tend to reject scientific advances, the structure of opinions related to the COVID-19 vaccines is more subtle. The statement that 'Scientists worldwide are doing their utmost to properly understand the nature of the coronavirus and to develop effective vaccines against it' is independent of party preferences, i.e., statistically similar proportions of both government and opposition supporters accept it. Furthermore, we also showed that media consumption habits might modify this interrelation. We believe that our results about the interaction effect between television, online news portals, social media and party preference can provide an important aspect for future research, namely, that party preference alone might not suggest or determine policy positions of individuals, but media consumption habits should be considered as well.

While Fidesz as a right-wing governing party has communicated clear messages about science in general during the coronavirus pandemic, the management of the crisis has become a central element of their policy. The position and actions of the government were easily decoded by their supporters: vaccination

not only saves lives, but it also saves the economy, which in turn helps to sustain individual existences. As a result, science scepticism and anti-vaccine attitudes demonstrate a certain variance: party preference does not influence attitudes towards vaccines at all, and the views of anti-science conservatives became more nuanced. This assumption is supported by the fact that information sources with different political influence play a significant role in the tendencies of anti-science and anti-vaccine attitudes, too.

Although our analysis provided important insights regarding the potential impact of political ideology and partisan positions on people's confidence in science in general and the management of the coronavirus pandemic in particular, it is important to note that the recent year may have brought new trends in opinion, as the rate of vaccinated people has increased in Hungary and worldwide. Therefore, further efforts are required to analyse this issue in other polarised countries and in subsequent periods in order to deepen our knowledge about science- and vaccine scepticism in polarised societies.

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Appendix 1

DV: Scientists are able to improve effective vaccines	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Liberal-conservative	-.38	.162	-2.34	.019	-.698	-.062	**
News portals	1.004	.304	3,3	.001	.408	1,6	***
Social media	-.428	.3	-1.43	.153	-1.015	.159	
Financial circumstances	.667	.175	3.80	0	.323	1.011	***
Size of residence	-.004	.004	-0.95	.34	-.012	.004	
Education	-.036	.061	-0.59	.554	-.155	.083	
Male	-.231	.293	-0.79	.43	-.805	.343	
Age	.014	.01	1.42	.156	-.005	.034	
Fidesz vs. Opposition	1.013	.565	1.79	.073	-.095	2.121	*
Television	1.627	.465	3.50	0	.716	2.537	***
Fidesz x television	-1.909	.647	-2.95	.003	-3.177	-.641	***
Constant	2.656	.997	2.67	.008	.703	4.61	***

Mean dependent var	0.920	SD dependent var	0.272
Pseudo r-squared	0.113	Number of obs	821
Chi-square	48.450	Prob > chi2	0.000
Akaike crit. (AIC)	403.176	Bayesian crit. (BIC)	459.702

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: IDEA Institute, April-May 2021. Authors' own compilation.

Appendix 2

DV: Scientists are able to improve effective vaccines	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Liberal-conservative	.275	.096	2.87	.004	.087	.463	***
News portals	-.766	.21	-3.65	0	-1.179	-.354	***
Television	-.419	.204	-2.06	.04	-.819	-.019	**
Financial circumstances	-.144	.109	-1.32	.187	-.358	.07	
Size of residence	-.006	.003	-2.11	.035	-.012	0	**
Education	-.19	.038	-4.98	0	-.265	-.115	***
Male	-.025	.201	-0.12	.902	-.419	.37	
Age	.006	.007	0.84	.402	-.007	.018	
Fidesz vs. Opposition	-1.724	.355	-4.85	0	-2.421	-1.027	***
Social media	.41	.253	1.63	.104	-.085	.906	
Fidesz x social media	-.871	.406	-2.15	.032	-1.666	-.077	**
Constant	2.183	.627	3.48	0	.954	3.411	***

Mean dependent var	0.372	SD dependent var	0.484
Pseudo r-squared	0.194	Number of obs	705
Chi-square	161.274	Prob > chi2	0.000
Akaike crit. (AIC)	695.534	Bayesian crit. (BIC)	750.232

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: IDEA Institute, April-May 2021. Authors' own compilation.

Appendix 3

DV: Scientists are able to improve effective vaccines	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Liberal-conservative	.259	.095	2.72	.007	.072	.445	***
Social media	.078	.201	0.39	.699	-.316	.471	
Television	-.422	.205	-2.06	.04	-.825	-.02	**
Financial circumstances	-.147	.11	-1.34	.181	-.363	.068	
Size of residence	-.006	.003	-2.19	.029	-.012	-.001	**
Education	-.2	.039	-5.16	0	-.275	-.124	***
Male	-.048	.202	-0.24	.813	-.445	.349	
Age	.006	.007	0.84	.401	-.007	.019	
Fidesz vs. Opposition	-2.839	.399	-7.12	0	-3.621	-2.057	***
News portals	-1.224	.28	-4.38	0	-1.772	-.676	***
Fidesz x news portals	1.079	.423	2.55	.011	.25	1.908	**
Constant	2.896	.665	4.35	0	1.592	2.04	***

Mean dependent var	0.372	SD dependent var	0.484
Pseudo r-squared	0.196	Number of obs	705
Chi-square	163.255	Prob > chi2	0.000
Akaike crit. (AIC)	693.552	Bayesian crit. (BIC)	748.250

*** $p < .01$, ** $p < .05$, * $p < .1$.

Source: IDEA Institute, April-May 2021. Authors' own compilation.