IS IGNORANCE BLISS?

Media Exposure and Government Confidence in a Dynamic Landscape

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The code and data for the project can be found at https://github.com/jormur/Big-Data-Trust-Project

ABOUT ESS - European Social Survey

Our research is based on the European Social Survey (ESS) that is an academically driven multi-country survey that has been conducted across Europe since its establishment in 2001. Every two years, face-to-face interviews are conducted with newly selected, cross-sectional samples. The survey aims to measure the attitudes, beliefs and behaviors of people in more than 30 countries over the years.

Its main objectives are:

- to monitor and interpret changing public attitudes and values within Europe and to investigate how they interact with Europe's changing institutions;
- to advance and consolidate improved methods of cross-national survey measurement in Europe and beyond;
- to develop a series of European social indicators, including attitudinal indicators;
- to improve the visibility and outreach of data on social change among academics, policy makers and the wider public.

The sampling strategy of ESS is the design and implementation of equivalent sampling plans in all the countries. It is based on principles such as

1. the strictly random selection of individuals;
2. the mandatory representation of all resident persons aged 15 and over in each country, regardless of their nationality, citizenship or language.

The databases are divided by year, one round of survey every two years. Each round involves strict random probability sampling, a minimum target response rate of 70% and rigorous translation protocols.

In the following table there is a description for each round of survey.

ESS Round	Year	Description
Round 1	2002	NA
Round 2	2004	In the second round, the survey covers over 20 nations and employs the most rigorous methodologies. The hour-long face-to-face interview includes (amongst others) questions on family, work and well-being, health, and economic morality.
Round 3	2006	In the third round, the survey covers 25 countries. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round Three covering personal and social well-being and the organization of the life course in Europe.
Round 4	2008	In the fourth round, the survey covers 31 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round Four covering Experiences and Expressions of Ageism and Welfare attitudes in a changing Europe.
Round 5	2010	In the fifth round, the survey covers 28 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round Five covering Trust in the Police and Courts and Work, Family and Wellbeing (the latter is a partial repeat of a module from round 2).
Round 6	2012	In the sixth round, the survey covers 29 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round Six covering Europeans' Understandings and Evaluations of Democracy and Personal and Social Well Being (the latter is a partial repeat of a module from round 3).
Round 7	2014	In the seventh round, the survey covers 22 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round 7 covering Social Inequalities in Health and their Determinants and Attitudes towards Immigration and their Antecedents (the latter is a partial repeat of a module from round 1).

Round 8	2016	In the eighth round, the survey covers 23 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round 8 covering Public Attitudes to Climate Change, Energy Security, and Energy Preferences and Welfare Attitudes in a Changing Europe (the latter is a partial repeat of a module from Round 4).
Round 9	2018	In the ninth round, the survey covers 30 countries and employs the most rigorous methodologies. The hour-long face-to-face interview includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round 9 covering Justice and Fairness in Europe, and the Timing of Life (the latter is a partial repeat of a module from Round 3).
Round 10	2020	The tenth ESS round covers 32 countries. It includes questions on a variety of core topics repeated from previous rounds of the survey and two modules developed for Round 10. These are Digital Social Contacts in Work and Family Life, and Understandings and Evaluations of Democracy (the latter is a partial repeat of a module from Round 6).

INTRODUCTION TO OUR PROJECT

Motivation

In today's digital age, the widespread availability and consumption of media have drastically transformed the way information is disseminated and received. However, alongside the countless benefits that arise from easy access to information, there is a growing concern over the impact of media exposure on civil trust. Misinformation, fueled by the proliferation of unreliable sources and echo chambers, has emerged as a significant threat to public discourse and societal cohesion.

One of the key motivations for our project is to shed light on the relationship between media exposure and civil trust. We aim to investigate whether the quantity and quality of media consumption have an effect on individuals' trust in various societal institutions, including government, the legal system, and other essential pillars of democracy. By understanding the potential influence of media exposure, we can gain valuable insights into the dynamics that shape public opinion and contribute to the current climate of political extremism and polarization.

The prevalence of echo chambers and filter bubbles further accentuates the need for this analysis. With the advent of personalized algorithms and social media platforms tailored to individual preferences, people are increasingly exposed to information that aligns with their existing beliefs and biases. This phenomenon fosters the reinforcement of one's own views, while limiting exposure to diverse perspectives and alternative viewpoints. Consequently, this narrowing of information sources can perpetuate paranoia and reinforce distrust among individuals, inhibiting constructive dialogue and compromising the democratic process.

By investigating the effect of media exposure on civil trust, we aim to contribute to a deeper understanding of the challenges posed by misinformation and echo chambers in contemporary society. Our findings have the potential to inform policymakers, media organizations, and individuals alike about the implications of media consumption habits on civil trust. Through

evidence-based insights, we can work towards developing strategies to counteract the negative consequences of media exposure, foster a more informed and engaged citizenry, and ultimately strengthen democratic principles in the face of evolving media landscapes.

First selection of data

Since the ESS survey presents a giant amount of data for several years and for many countries, we had to face the issue of selecting countries and years that could have been consistent with our purpose. In addition, we had also to consider that not all countries took part in the questionnaire every year.

Our approach was as follows:

Step 1: Considering the size of our dataset, we thought it was more appropriate to narrow the scope of our research to a time period from 2016 to 2022. As we consider the phenomenon of exposure to information, and to social media in particular, we deemed it reasonable to look at a time period starting in 2016. In this way, we have a long enough time span to see how much social media has impacted the spread of information in recent years and thus also the impact this information has had on individuals. Furthermore, the time period considered extends to 2022, giving us the opportunity to investigate any changes that have occurred due to the pandemic.

Step 2: We observed which of these countries consistently took part in the questionnaire. We selected those whose results were available over a consecutive series of years to let us provide a continuous data analysis.

At the end we focused on **13 countries** over the **time period 2016 - 2022**:

1. Czechia
2. Estonia

3. Finland
4. France
5. Hungary
6. Iceland
7. Italy
8. Lithuania
9. Netherlands
10. Norway
11. Portugal
12. Slovenia
13. Switzerland

Step 3: Considering the huge amount of variables in the survey's datasets (roughly 500/600 in each dataset), we had to choose which were the most relevant for our scope. We had to keep in mind both the countries selected and the fields in which we wanted to consider the variables. Moreover, we had to choose the ones equal for every year of survey.

In this way, from hundreds of variables, we decided to keep only the following ones:

SECTION	VARIABLE NAME	DESCRIPTION	TYPE	MEASURE
Identifier and weight variables	**essround**	ESS round	Categorical	round 10 – 10 round 9 – 9 round 8 – 8
	idno	Respondent's identification number	Numeric	*Every respondent is assigned an id. number
	cntry	Country	Categorical	CZ – Czechia EE – Estonia FI – Finland FR – France HU – Hungary IS – Iceland IT – Italy LT – Lithuania NL – Netherlands NO – Norway PT – Portugal SI – Slovenia

				CH – Switzerland
SECTION	**VARIABLE NAME**	**DESCRIPTION**	**TYPE**	**MEASURE**
Media use and social trust	**netusoft**	Internet use, how often		1 – Never 2 – Only occasionally 3 – A few times a week 4 – More than 1,5 hours, up to 2 hours 5 – Most days 6 – Every day 7 – Refusal* 8 – Don't know* 9 – No answer*
	netustm	Internet use, how much time on typical day, in minutes	Numeric - continuous	6666 – Not applicable* 7777 – Refusal* 8888 – Don't know* 9999 – No answer*
	nwspol	Time spent watching, reading or listening to news about politics and current affairs	Numeric - continuous	7777 – Refusal* 8888 – Don't know* 9999 – No answer*
	ppltrst	Most people can be trusted or you can't be too careful	Numeric - discrete	On a scale from 0 to 10 0 – You can't be too careful 10 – Most people can be trusted 77 – Refusal* 88 – Don't know* 99 – No answer*
	pplhlp	Most of the time people are helpful or mostly looking out for themselves	Numeric - discrete	On a scale from 0 to 10 0 – People mostly look out for themselves 10 – People mostly try to be helpful 77 – Refusal* 88 – Don't know* 99 – No answer*
	pplfair	Most people try to take advantage of you, or try to be fair	Numeric - discrete	On a scale from 0 to 10 0 – Most people try to take advantage of me 10 – Most people try to be fair 77 – Refusal* 88 – Don't know* 99 – No answer*
SECTION	**VARIABLE NAME**	**DESCRIPTION**	**TYPE**	**MEASURE**
Politics, including: political interest, efficacy, trust, electoral and other forms of participation, socio-political orientations	**actrolga**	Able to take active role in political group	Categorical - ordinal	1 – Not at all able 2 – A little able 3 – Quite able 4 – Very able 5 – Completely able 7 – Refusal* 8 – Don't know* 9 – No answer*

	cptppola	Confident in own ability to participate in politics	Categorical - ordinal	1 – Not at all confident 2 – A little confident 3 – Quite confident 4 – Very confident 5 – Completely confident 7 – Refusal* 8 – Don't know* 9 – No answer*
	euftf	European Union: European unication go further or gone too far	Numerical - discrete	On a scale from 0 to 10 0 – Unification already gone too far 10 – Unification go further 77 – Refusal* 88 – Don't know* 99 – No answer*
	freehms	Gays and lesbians free to live life as they wish	Categorical - ordinal	1 – Agree strongly 2 – Agree 3 – Neither agree nor disagree 4 – Disagree 5 – Disagree strongly 7 – Refusal* 8 – Don't know* 9 – No answer*
	gincdif	Government should reduce differences in income levels	Categorical - ordinal	1 – Agree strongly 2 – Agree 3 – Neither agree nor disagree 4 – Disagree 5 – Disagree strongly 7 – Refusal* 8 – Don't know* 9 – No answer*
	hmsacld	Gay and lesbian couples right to adopt children	Categorical - ordinal	*same as above*
	hmsfmlsh	Ashamed if close family member gay or lesbian	Categorical - ordinal	*same as above*
	lrscale	Placement on left right scale	Numerical - discrete	On a scale from 0 to 10 0 – Left 10 – Right 77 – Refusal* 88 – Don't know* 99 – No answer*
	polintr	How interested in politics	Categorical - ordinal	1 – Very interested 2 – Quite interested 3 – Hardly interested 4 – Not at all interested 7 – Refusal* 8 – Don't know* 9 – No answer*

	prtdgcl	How close to party	Categorical - ordinal	1 – Very close 2 – Quite close 3 – Not close 4 – Not at all close 6 – Not applicable* 7 – Refusal* 8 – Don't know* 9 – No answer*
	psppipla	Political system allows people to have influence on politics	Categorical - ordinal	1 – Not at all 2 – Very little 3 – Some 4 – A lot 5 – A great deal 7 – Refusal* 8 – Don't know* 9 – No answer*
	psppsgva	Political system allows people to have a say in what government does		*same as above*
	pstplonl	Posted or shared anything about politics online last 12 months	Categorical - nominal	1 – Yes 2 – No 7 – Refusal* 8 – Don't know* 9 – No answer*
	sgnptit	Signed petition last 12 months		*same as above*
	stfdem	How satisfied with the way democracy works in country	Numerical - discrete	On a scale from 0 to 10 0 – Extremely dissatisfied 10 – Extremely satisfied 77 – Refusal* 88 – Don't know* 99 – No answer*
	stfeco	How satisfied with present state of economy in country	Numerical - discrete	*same as above*

	stfedu	State of education in country nowadays	Numerical - discrete	*same as above*
	stfgov	How satisfied with the national government	Numerical - discrete	*same as above*
	stfhlth	State of health services in country nowadays	Numerical - discrete	*same as above*
	stflife	How satisfied with life as a whole	Numerical - discrete	*same as above*
	trstep	Trust in the European Parliament	Numeric - discrete	On a scale from 0 to 10 0 – No trust at all 10 – Complete trust 77 – Refusal* 88 – Don't know* 99 – No answer*
	trstlgl	Trust in the legal system	Numeric - discrete	*same as above*
	trstplc	Trust in the police	Numeric - discrete	*same as above*

	trstplt	Trust in politicians	Numeric - discrete	*same as above*
	trstprl	Trust in country's parliament	Numeric - discrete	*same as above*
	trstprt	Trust in political parties	Numeric - discrete	*same as above*
	trstun	Trust in the United Nations	Numeric - discrete	*same as above*
	vote	Voted last national election	Categorical - nominal	1 – Yes 2 – No 3 – Not eligible vote 7 – Refusal* 8 – Don't know* 9 – No answer*
	imsmetn	Allow many/few immigrants of same race/ethnic group as majority	Categorical - ordinal	1 – Allow many to come and live here 2 – Allow some 3 – Allow few 4 – Allow none 7 – Refusal* 8 – Don't know* 9 – No answer*
	imdfetn	Allow many/few immigrants of different race/ethnic group from majority	Categorical - ordinal	*same as above*
	impcntr	Allow many/few immigrants from poorer countries outside Europe	Categorical - ordinal	*same as above*
	imbgeco	Immigration bad or good for country's economy	Numerical - discrete	On a scale from 0 to 10 0 – Bad for the economy 10 – Good for the economy 77 – Refusal* 88 – Don't know* 99 – No answer*
	imueclt	Country's cultural life undermined or enriched by immigrants	Numerical - discrete	On a scale from 0 to 10 0 – Cultural life undermined 10 – Cultural lids enriched 77 – Refusal* 88 – Don't know* 99 – No answer*

	imwbcnt	Immigrants make country worse or better place to live	Numerical - discrete	On a scale from 0 to 10 0 – Worse place to live 10 – Better place to live 77 – Refusal* 88 – Don't know* 99 – No answer*
SECTION	**VARIABLE NAME**	**DESCRIPTION**	**TYPE**	**MEASURE**
Subjective well-being, social exclusion, religion, perceived discrimination, national and ethnic identity	**aesfdrk**	Feeling of safety of walking alone in local area after dark	Categorical - ordinal	1 – Very safe 2 – Safe 3 – Unsafe 4 – Very unsafe 7 – Refusal* 8 – Don't know* 9 – No answer*
	atchctr	How emotionally attached to [country]	Numerical - discrete	On a scale from 0 to 10 0 – Not at all emotionally attached 10 – Very emotionally attached 77 – Refusal* 88 – Don't know* 99 – No answer*
	atcherp	How emotionally attached to Europe	Numerical - discrete	*same as above*
	brncntr	Born in country	Categorical - nominal	1 – Yes 2 – No 7 – Refusal* 8 – Don't know* 9 – No answer*
	crmvct	Respondent or household member victim of burglary/assault last 5 years	Categorical - nominal	*same as above*
	ctzcntr	Citizen of country	Categorical - nominal	*same as above*
	dscrage	Discrimination of respondent's group: age	(Dummy), categorical - nominal	0 – Not marked 1 – Marked
	dscrdsb	Discrimination of respondent's group: disability	(Dummy), categorical - nominal	*same as above*
	dscretn	Discrimination of respondent's group: ethnic group	(Dummy), categorical - nominal	*same as above*
	dscrgnd	Discrimination of respondent's group: gender	(Dummy), categorical - nominal	*same as above*

	dscrgrp	Member of a group discriminated against in this country	Categorical - nominal	1 – Yes 2 – No 7 – Refusal* 8 – Don’t know* 9 – No answer*
	dscrlng	Discrimination of respondent's group: language	(Dummy), categorical - nominal	0 – Not marked 1 – Marked
	dscrntn	Discrimination of respondent's group: nationality	(Dummy), categorical - nominal	*same as above*
	dscrrce	Discrimination of respondent's group: colour or race	(Dummy), categorical - nominal	*same as above*
	dscrrlg	Discrimination of respondent's group: religion	(Dummy), categorical - nominal	*same as above*
	dscrsex	Discrimination of respondent's group: sexuality	(Dummy), categorical - nominal	*same as above*
	happy	How happy are you	Numerical - discrete	On a scale from 0 to 10 0 – Extremely unhappy 10 – Extremely happy 77 – Refusal* 88 – Don’t know* 99 – No answer*
	rlgdgr	How religious are you	Numerical - discrete	On a scale from 0 to 10 0 – Not at all religious 10 – Very religious 77 – Refusal* 88 – Don’t know* 99 – No answer*
	sclact	Take part in social activities compared to others of same age	Categorical - ordinal	1 – Much less than most 2 – Less than most 3 – About the same 4 – More than most 5 – Much more than most 7 – Refusal* 8 – Don’t know* 9 – No answer*
	sclmeet	How often socially meet with friends, relatives or colleagues	Categorical - ordinal	1 - Never 2 – Less than once a month 3 – Once a month 4 – Several times a month 5 – Once a week 6 – Several times a week 7 – Every day 77 – Refusal* 88 – Don’t know* 99 – No answer*

SECTION	VARIABLE NAME	DESCRIPTION	TYPE	MEASURE
	gndr	Gender	Categorical - nominal	1 – Male 2 – Female 9 – No answer*
	agea	Age of respondent, calculated	Numerical - discrete	999 – Not available*
	eisced	Highest level of education ES-ISCED	Numerical - ordinal	0 – Not possible to harmonize into ES-ISCED* 1 – ES-ISCED I, less than lower secondary 2 – ES-ISCED II, lower secondary 3 – ES-ISCED IIIb, lower tier upper secondary 4 – ES-ISCED IIIa, upper tier upper secondary 5 – ES-ISCED IV, advanced vocational, sub-degree 6 – ES-ISCED V1, lower tertiary education, BA level 7 – ES-ISCED V2, higher tertiary education, >= MA level 55 – Other 77 – Refusal* 88 – Don't know* 99 – No answer*
	hinctnta	Household's total net income, all sources	Numerical - ordinal	1 – 1st decile 2 – 2nd decile 3 – 3rd decile 4 – 4th decile 5 – 5th decile 6 – 6th decile 7 – 7th decile 8 – 8th decile 9 – 9th decile 10 - 10th decile 77 – Refusal* 88 – Don't know* 99 – No answer*
	iorgact	Allowed to influence policy decisions about activities of organization		On a scale from 0 to 10 0 – I have/had no influence 10 – I have/had complete control 66 – Not applicable* 77 – Refusal* 88 – Don't know* 99 – No answer*

	marsts	Legal marital status	Categorical - nominal	1 – Legally married 2 – In a legally registered civil union 3 – Legally separated 4 – Legally divorced/Civil union dissolved 5 – Widowed/ Civil partner died 6 – None of these (NEVER married or in legally registered union) 66 – Not applicable* 77 – Refusal* 88 – Don't know* 99 – No answer*
	uempla	Doing last 7 days: unemployed, actively looking for job	(Dummy), categorical - nominal	0 – Not marked 1 – Marked
	wkdcorga	Allowed to decide how daily work is organized	Categorical - ordinal	On a scale from 0 to 10 0 – I have/had no influence 10 – I have/had complete control 66 – Not applicable* 77 – Refusal* 88 – Don't know* 99 – No answer*
SECTION	**VARIABLE NAME**	**DESCRIPTION**	**TYPE**	**MEASURE**
Human values	**impfree**	Important to make own decisions and be free	Categorical - ordinal	1 – Very much like me 2 – Like me 3 – Somewhat like me 4 – A little like me 5 – Not like me 6 – Not like me at all 7 – Refusal* 8 – Don't know* 9 – No answer*
	impsafe	Important to live in secure and safe surroundings	Categorical - ordinal	*same as above*
	imptrad	Important to follow traditions and customs	Categorical - ordinal	*same as above*
	ipbhprp	Important to behave properly	Categorical - ordinal	*same as above*
	ipfrule	Important to do what is told and follow rules	Categorical - ordinal	*same as above*
	iphlppl	Important to help people and care for others well-being	Categorical - ordinal	*same as above*
	iprspot	Important to get respect from others	Categorical - ordinal	*same as above*
	ipstrgv	Important that government is strong and ensures safety	Categorical - ordinal	*same as above*
	ipudrst	Important to understand different people	Categorical - ordinal	*same as above*

*All these values will then be eliminated in the data cleaning process as they are considered as *missing values*

DATA CLEANING

The large size of our datasets (each dataset contained a number of observations in a range from 40.000 to 54.000) was one of the main strengths of our analysis. However, it required us to spend a relevant amount of time and effort on data cleaning.

We can summarize the data cleaning process in the following macro steps:

1. **Deleting the missing values**: we deleted all those values that corresponded to Not applicable, Refusal, Don't know and No answer, along with any NA values within our dataset;

2. **Adjustment in the classification type of variables**: the downloaded dataset showed most of the variables as integer/numeric variables, however, many variables are actually dummy variables, categorical/ordinal and dates. Changing the classification type of the variables was a necessary step to better manage, visualize and analyze our data;

3. **Creation of new variables**: for some variables, such as age, we inserted a new one showing the age ranges of the participants.

CONTROL VARIABLES

For our study, we have chosen to control for 27 different variables while analyzing the relationship between media consumption and trust in institutions. These control variables serve the purpose of accounting for potential confounding factors and ensuring that the observed variations of civil trust are not due to other factors at play. While keeping in mind that we needed to have values for each

13 countries and through different periods, we selected the following 27 control variables on the assumption that they might play a role in the level of trust people have in their institutions.

The following tables detail each variable, their data source, and the year of the data associated with the answers for each of the 3 years of the ESS survey.

Variables imported from World Bank DataBank *(World Development Indicators) at* https://databank.worldbank.org					
VARIABLE NAME	**VARIABLE CODE**	**VARIABLE DESCRIPTION**	**ROUND 8 YEAR**	**ROUND 9 YEAR**	**ROUND 10 YEAR**
population	SP.POP.TOTL	Population, total	2017	2019	2021
GDP_per_capita	NY.GDP.PCAP.PP.CD	GDP per capita, PPP (current international $)	2017	2019	2021
GDP_growth_per_capita	NY.GDP.PCAP.KD.ZG	GDP per capita growth (annual %)	2017	2019	2021
inflation	FP.CPI.TOTL.ZG	Inflation, consumer prices (annual %)	2017	2019	2021
inflation_GDP_deflator	NY.GDP.DEFL.KD.ZG	Inflation, GDP deflator (annual %)	2017	2019	2021
health_expenditure	SH.XPD.CHEX.GD.ZS	Current health expenditure (% of GDP)	2017	2019	2022 (2020 for CH, CZ, FI, FR, HU)
employment_ratio	SL.EMP.TOTL.SP.ZS	Employment to population ratio, 15+, total (%) (modeled ILO estimate)	2017	2019	2021
expense	GC.XPN.TOTL.GD.ZS	Expense (% of GDP)	2017	2019	2021
gini_index	SI.POV.GINI	Gini index	2017	2019 (2018 for CH, 2017 for IS)	2020 (2019 for NO, 2018 for CH, 2017 for IS)
poverty_ratio	SI.POV.DDAY	Poverty headcount ratio at $2.15 a day (2017 PPP) (% of population)	2018	2019 (2018 for CH, 2017 for IS)	2020 (2019 for NO, 2018 for CH, 2017 for IS)
labor_force_rate	SL.TLF.CACT.NE.ZS	Labor force participation rate, total (% of total population ages 15+) (national estimate)	2017	2019	2021
revenue	GC.REV.XGRT.GD.ZS	Revenue, excluding grants (% of GDP)	2017	2019	2021

tax_revenue	GC.TAX.TOTL.GD.ZS	Tax revenue (% of GDP)	2017	2019	2021
edu_expenditure	SE.XPD.PRIM.PC.ZS	Government expenditure on education, total (% of government expenditure)	2017	2019	2021
unemployment	SL.UEM.TOTL.ZS	Unemployment, total (% of total labor force) (modeled ILO estimate)	2017	2019	2021
life_expectancy	SP.DYN.LE00.IN	Life expectancy at birth, total (years)	2017	2019	2021
death_rate	SP.DYN.CDRT.IN	Death rate, crude (per 1,000 inhabitants)	2017	2019	2021
beds_per_1000	SH.MED.BEDS.ZS	Hospital beds (per 1,000 inhabitants)	2017	2018	2018 (2019 for IS
pop_above_65	SP.POP.65UP.TO.ZS	Population ages 65 and above (% of total population)	2017	2019	2021

Variable imported from United Nations Development Programme *(UNDP) at* https://hdr.undp.org/				
VARIABLE NAME	**VARIABLE DESCRIPTION**	**ROUND 8 YEAR**	**ROUND 9 YEAR**	**ROUND 10 YEAR**
hdi	Human Development Index (HDI)	2017	2019	2021
Variable imported from The Economist Intelligence Unit *at* https://www.eiu.com/n/campaigns/democracy-index-2022				
democracy_index	Democracy Index	2017	2019	2021
Variable imported from NUMBEO *at* https://www.numbeo.com/crime/rankings_by_country.jsp				
crime_index	Crime Index	2017	2019	2021
Variable imported from Transparency International *at* https://www.transparency.org/en/cpi				
corruption_index	Corruption Perception Index	2017	2019	2021
Variables imported from the World Health Organization (WHO - UN)				
from Global Health Expenditure Database at https://apps.who.int/nha/database/Select/Indicators/en				

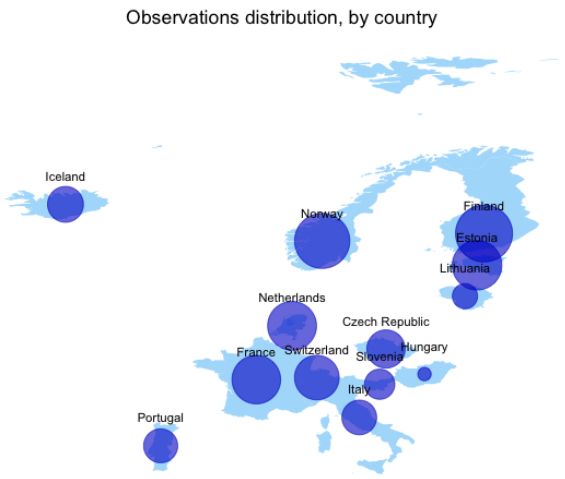
health_expenditure	Domestic Private Health Expenditure (PVT-D) per Capita in US$	2017	2019	2020
private_health_exp	Out-of-Pocket Health Expenditure (OOPS) per Capita in US$	2017	2019	2020
from the Global Health Workforce statistics database *at* https://www.who.int/data/gho/data/themes/topics/health-workforce				
doctors_per_10000	Medical doctors (per 10,000 inhabitants)	2017 (2018 for CZ)	2019 (2017 for IS)	2020 (2019 for EE, FI , FR, NL, PT, SI, 2017 for IS)
nurses_per_10000	Nursing and midwifery personnel (per 10,000 inhabitants)	2017	2019	2020 (2021 for EE, HU, IT, LT, NO)

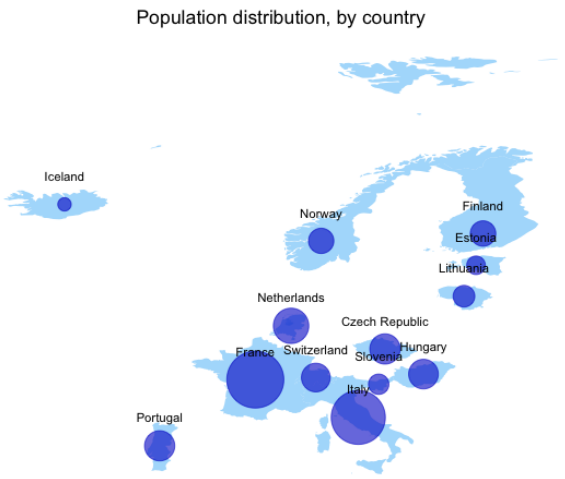
DATA VISUALIZATION

With the aim of getting a visual representation and of better understanding our data, we created different plots. In the following section we used different types of charts and plots in order to view the distribution of certain variables mainly across rounds and/or years.

Geographic distribution and dimension

In doing these plots we wanted to visualize the structure of our dataset in terms of the geographical distribution of the observations; These plots in fact help us almost immediately to understand how our sample is split between the various countries under observation. Furthermore, to gain an even deeper understanding, we decided to compare the structure of our sample to the actual population distribution of the countries.

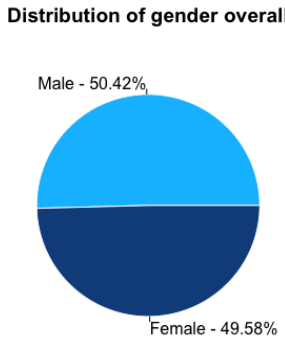


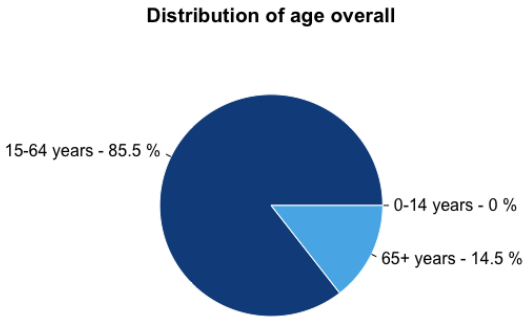


As we can see from the plots, our sample has a disproportionate number of observations for those countries that actually have a smaller population. Specifically, the countries with an overabundance of observations are: Finland, Estonia, Norway and Iceland. For this reason, when we proceed to apply our model, control variables linked to the actual population will be used in order to manage and weight our sample correctly.

Demographics

For this section we considered the dataset as a unique one, therefore without considering the different rounds. In general, the following graphs are useful to check whether our sample is balanced in terms of age and gender.





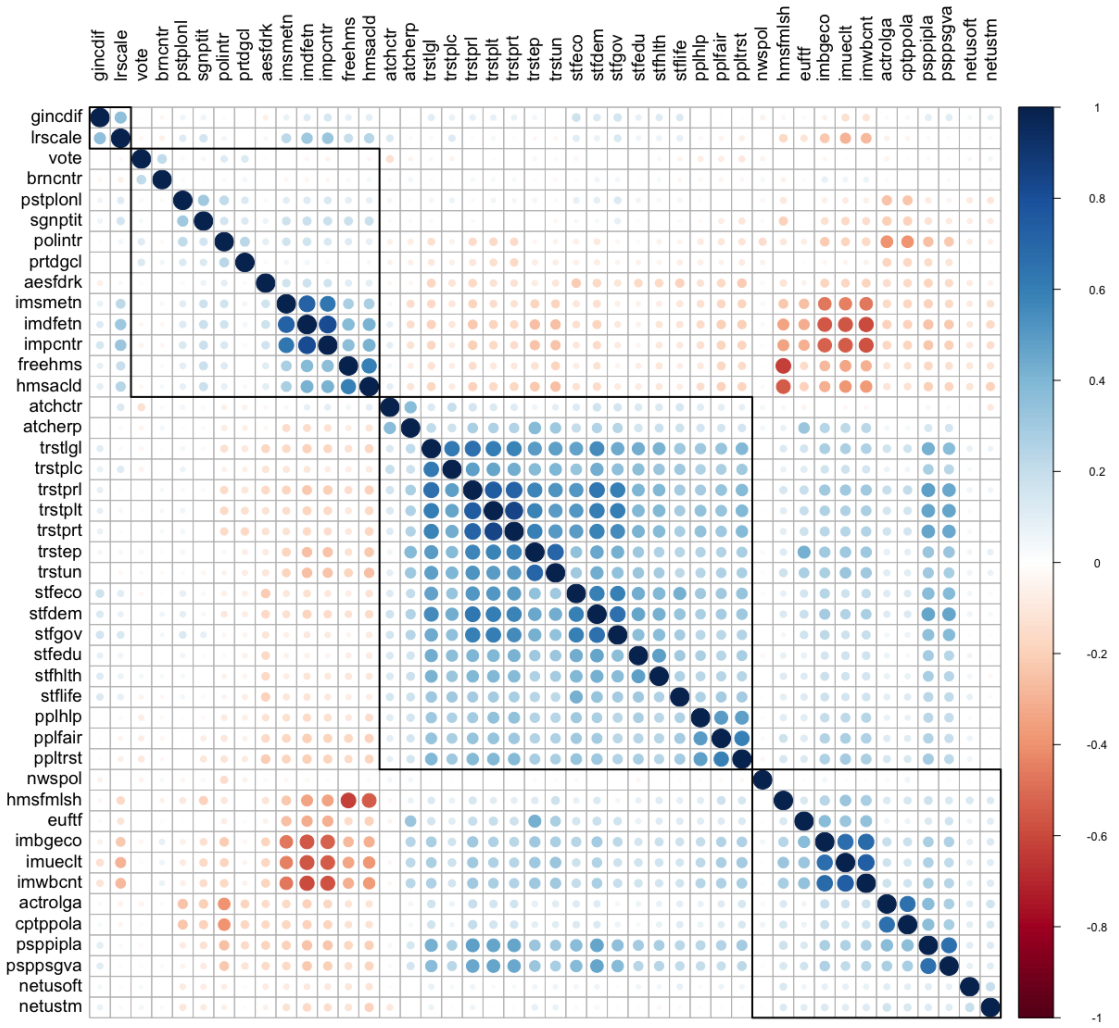
What we can glean from these two graphs is that, in terms of gender, our sample does not differ much from the European population; in fact, according to ISTAT data: on 1 January 2020 there were 219 million men and 229 million women in the EU. This corresponds to a ratio of 104.7 women per 100 men, which means the difference in percentage terms is only 4.7 % more women than men[1].

As far as the age distribution of our sample is concerned, in order to be able to compare it with real data, we have divided our sample into three age groups, as it was divided by the World Bank. According to this latest data, from 2011 to 2021, the age groups have remained almost unchanged and are around 15% (0-14 years), 65% (15-64) and 20% (65 and older)[2]. We were thus able to see that our sample does not appear to represent the lowest age group (0-14) while it shows a slight surplus of people in the intermediate 15-64 range compared to 65+.

[1] ISTAT Website https://www.istat.it/demografiadelleuropa/bloc-1b.html?lang=it#:~:text=Il%201%C2%B0%20gennaio%202020,in%20pi%C3%B9%20rispetto%20agli%20uomini

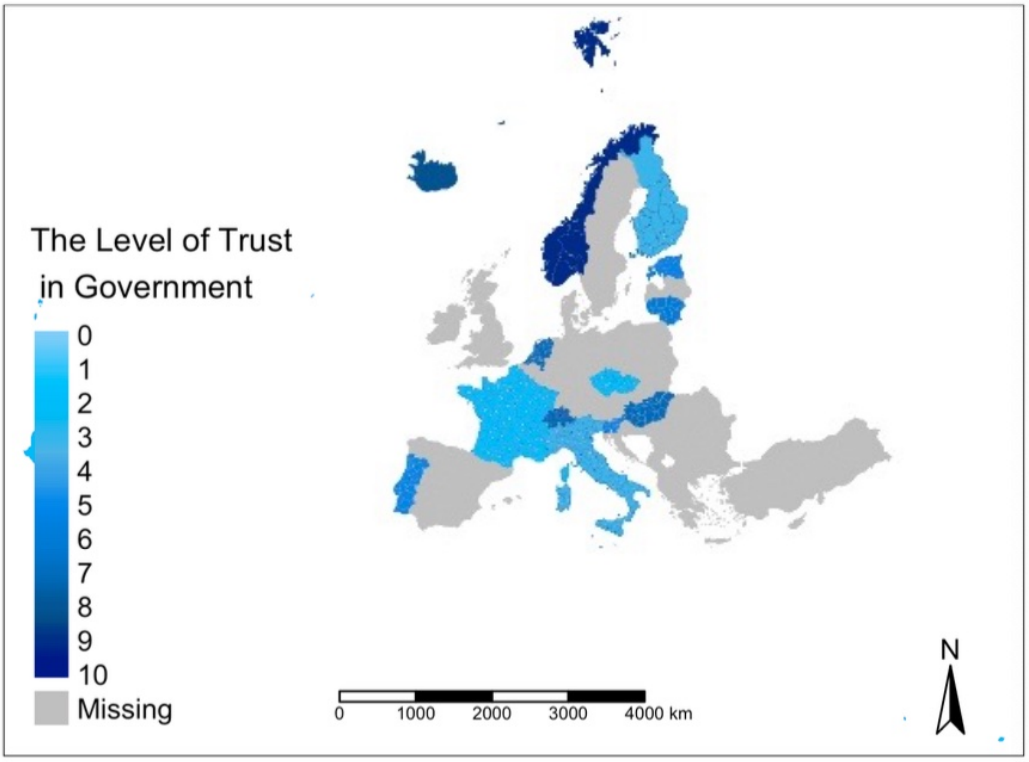
[2] Statista and World Bank https://www.statista.com/statistics/253408/age-distribution-in-the-european-union-eu/

Correlation between variables



Considering there are many factors influencing the trust in governement, this paper employs the corrplot function to visually display the correlation between variables. The function utilizes algorithms to reorder the correlation matrix efficiently. Additionally, the size of circles and the gradient colors effectively highlight a significant inclination towards politically like-leaning values as result.

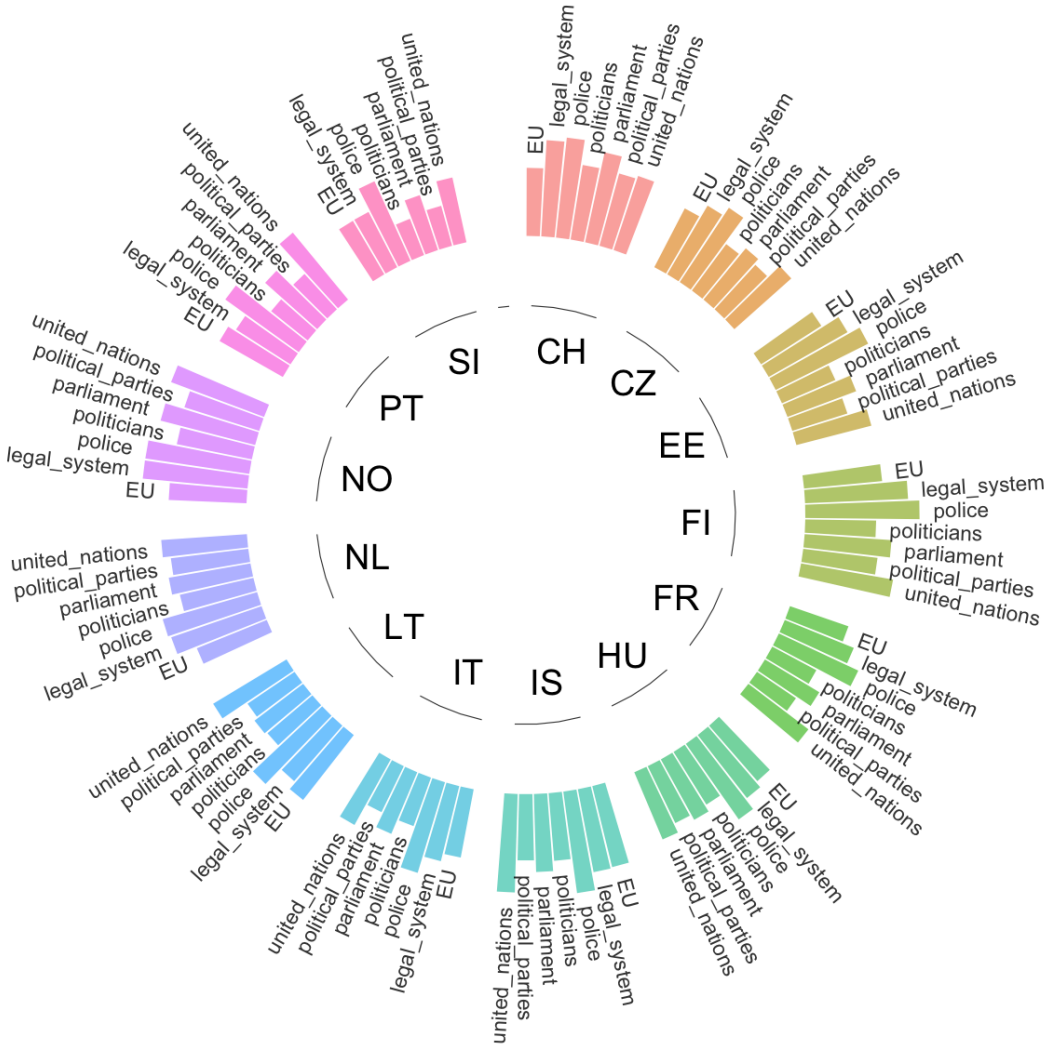
Level of trust among countries



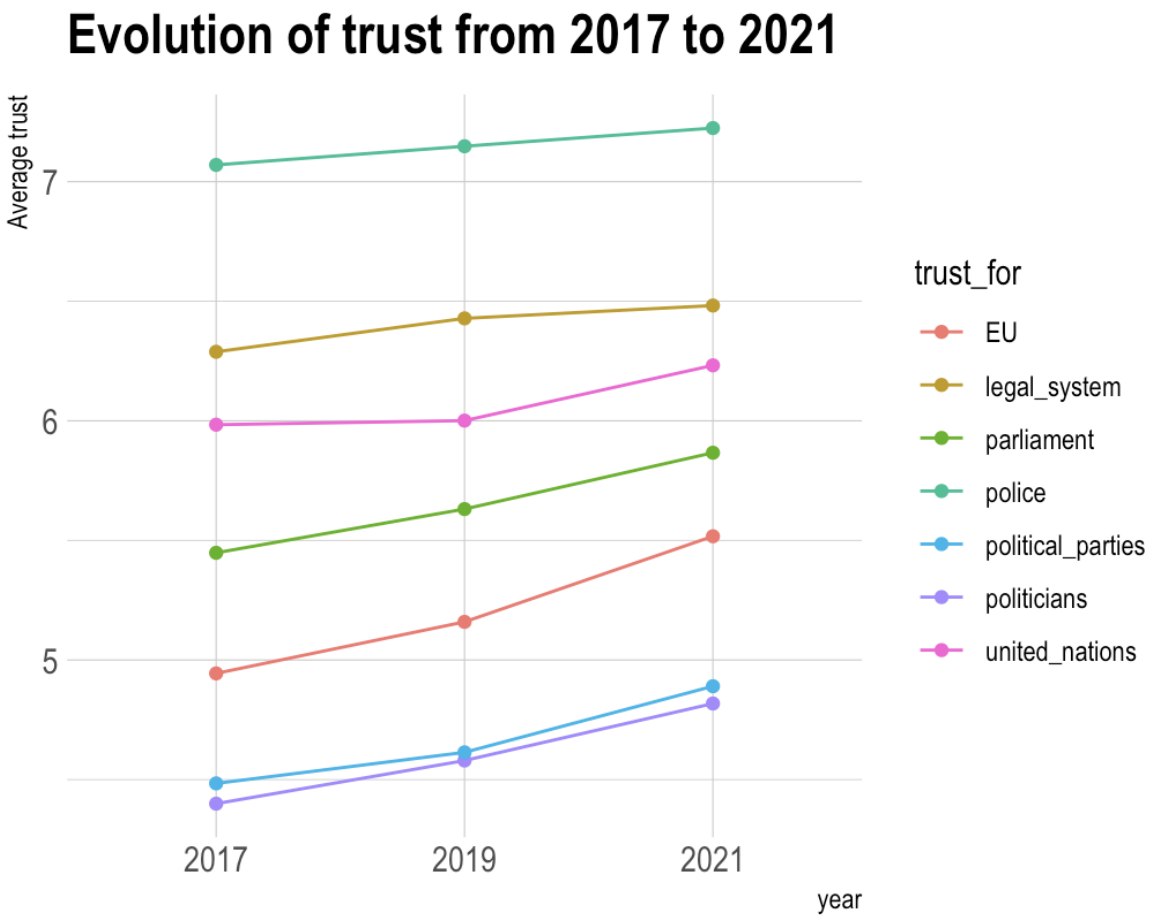
This paper explored the outcomes of trust in government using a choropleth map. Trust levels were categorized into three groups. North European countries (Norway, Ireland, Estonia, Iceland) showed high-level trust. Central and Western European countries (France, Italy, Greece, Czech Republic, Hungary, Portugal, Slovenia, Switzerland) exhibited mid-level trust. Lithuania had a low-level trust.

Trust levels

In the last section, we have used circular bar plots and connected scatter plots to get a first glimpse of what are the levels of trust of citizens in each country (trust in EU, police, legal system, etc.), but also the levels of trust over time. The choice of making these graphs lies in the fact that, trust being one of the topics of study, we thought it reasonable to have a first general overview before proceeding with the application of the model.



From this graph we can see that there are no major differences between countries. In general, all countries show moderate levels of trust in different institutions. Furthermore, it can be seen that all countries share higher levels of trust in the legal system, police and united nations. On the contrary, the lowest levels concern political institutions (parliament, politicians and political parties).



The interesting thing we can see from this graph is that, contrary to our initial intuition, trust levels have increased over the years. In general, as we also saw in the previous graph, the highest levels of trust are towards the police, the legal system and the United Nations, and they all show moderate and increasing levels. Political parties and politicians, although still on the rise, are the institutions towards which citizens place the least trust. Furthermore, it is possible to observe that trust in the EU had the greatest increase during the covid period, which could be justified by the efforts that European countries took to overcome the crisis period. Finally, it is possible to observe that the level of trust in the legal system is the only one to have a different trend from all the others.

To conclude, looking at these two graphs we can say that it is not possible to observe great differences between countries. In addition, it is important to emphasize that the levels of trust we are observing are very moderate and are in the lower middle part of the scale. This is important

because at the level of interpretation this means that, despite the upward trends, citizens have moderate or low levels of trust.

BUILDING THE MODEL

In our study, we aimed to examine the relationship between exposure to news media and reported trust in government using a large dataset consisting of three rounds of survey data collected over a span of six years. With tens of thousands of individuals providing responses to hundreds of questions, our dataset contained a wealth of information, including more than 75 variables.

To address the complexity and potential confounding factors inherent in such a rich dataset, we employed two complementary empirical models: double selection and fixed effects models.

The double selection model was chosen to identify the variables most relevant to our research question and control for potential confounders. Given the large number of variables, it was crucial to employ a method that could effectively handle variable selection while accounting for the multiple testing issue. Double selection is a powerful approach that combines the strengths of the lasso and the post-lasso inference. It automatically selects the most relevant variables and provides reliable estimates by controlling the false discovery rate. By employing double selection, we were able to identify the variable that best captured the effect of exposure to news media on reported trust in government, while mitigating potential biases from other variables in the dataset.

Furthermore, we utilized a fixed effects model to account for unobserved time-invariant heterogeneity among individuals. The fixed effects approach is particularly appropriate for panel data analysis, as it allows us to control for individual-specific characteristics that may remain constant over time but could potentially influence both exposure to news media and trust in government. By including individual fixed effects, we effectively removed the influence of time-invariant factors, focusing on within-individual changes over time. This model specification

allowed us to isolate the variation in reported trust in government that can be attributed to changes in exposure to news media, while holding constant individual-specific heterogeneity.

By employing both the double selection and fixed effects models, we ensured a robust analysis that addresses the complexities of our dataset. The double selection model enabled us to identify the key variable of interest, while the fixed effects model accounted for unobserved time-invariant factors. Together, these models provided a comprehensive and rigorous framework for examining the relationship between exposure to news media and reported trust in government, enhancing the validity and reliability of our findings.

Selected Variables

The table below presents the selected variables taken from the original dataset, as determined by the *hdm* package found in R.

The double selection method consists of two steps: the first step involves selecting potential predictors based on their association with both the treatment variable (exposure to news media) and the outcome variable (trust in government). This step helps filter out variables that are unrelated to the causal relationship of interest. We leveraged the *hdm* package's *rlassoEffect()* function to perform this initial variable selection.

In the second step, the double selection method performs a second round of variable selection using the previously selected variables. This step aims to identify the variables that have a direct causal effect on the outcome, after controlling for the potential confounding variables. The *hdm* package provides a convenient implementation of this step through the *rlassoEffect()* function.

Using this iterative process, the double selection method effectively identifies a subset of variables that are both associated with the treatment and outcome variables and have a direct causal impact on the outcome. By employing this method, we were able to mitigate potential bias and confounding

effects, leading to a more robust estimation of the causal relationship between exposure to news media and trust in government.

Overall, the double selection method offered a rigorous approach to variable selection, allowing us to identify the most relevant predictors while accounting for potential confounding factors. By applying this method within the *hdm* package in R, we ensured the validity and reliability of our results, enhancing the credibility of our findings in uncovering the intricate relationship between media exposure and government trust in our dynamic survey dataset.

VARIABLE NAME	DESCRIPTION	TYPE	MEASURE
trstprl	Trust in country's parliament	Numeric - discrete	*same as above*
nwspol	Time spent watching, reading or listening to news about politics and current affairs	Numeric - continuous	7777 – Refusal* 8888 – Don't know* 9999 – No answer*
GDP_per_capita		Numeric - continuous	In $USD
GDP_growth_per_capita			
netusoft	Internet use, how often		1 – Never 2 – Only occasionally 3 – A few times a week 4 – More than 1,5 hours, up to 2 hours 5 – Most days 6 – Every day 7 – Refusal* 8 – Don't know* 9 – No answer*
cptppola	Confident in own ability to participate in politics	Categorical - ordinal	1 – Not at all confident 2 – A little confident 3 – Quite confident 4 – Very confident 5 – Completely confident 7 – Refusal* 8 – Don't know* 9 – No answer*
freehms	Gays and lesbians free to live life as they wish	Categorical - ordinal	1 – Agree strongly 2 – Agree 3 – Neither agree nor disagree 4 – Disagree 5 – Disagree strongly 7 – Refusal* 8 – Don't know* 9 – No answer*
gincdif	Government should reduce differences in income levels	Categorical - ordinal	1 – Agree strongly 2 – Agree 3 – Neither agree nor disagree 4 – Disagree

			5 – Disagree strongly 7 – Refusal* 8 – Don't know* 9 – No answer*
lrscale	Placement on left right scale	Numerical - discrete	On a scale from 0 to 10 0 – Left 10 – Right 77 – Refusal* 88 – Don't know* 99 – No answer*
psppipla	Political system allows people to have influence on politics	Categorical - ordinal	1 – Not at all 2 – Very little 3 – Some 4 – A lot 5 – A great deal 7 – Refusal* 8 – Don't know* 9 – No answer*
sgnptit	Signed petition last 12 months		*same as above*
stfdem	How satisfied with the way democracy works in country	Numerical - discrete	On a scale from 0 to 10 0 – Extremely dissatisfied 10 – Extremely satisfied 77 – Refusal* 88 – Don't know* 99 – No answer*
stfeco	How satisfied with present state of economy in country	Numerical - discrete	*same as above*
stfedu	State of education in country nowadays	Numerical - discrete	*same as above*
stfgov	How satisfied with the national government	Numerical - discrete	*same as above*
stfhlth	State of health services in country nowadays	Numerical - discrete	*same as above*
trstep	Trust in the European Parliament	Numeric - discrete	On a scale from 0 to 10 0 – No trust at all 10 – Complete trust 77 – Refusal* 88 – Don't know* 99 – No answer*
trstplt	Trust in politicians	Numeric - discrete	*same as above*
vote	Voted last national election	Categorical - nominal	1 – Yes 2 – No 3 – Not eligible vote 7 – Refusal* 8 – Don't know* 9 – No answer*
dscrrce	Discrimination of respondent's group: color or race	(Dummy), categorical - nominal	*same as above*
revenue	Revenue, excluding grants (% of GDP)		
tax_revenue	Tax revenue (% of GDP)		
expense	Expense (% of GDP)		
employment_ratio	Employment to population ratio, 15+,		

	total (%) (modeled ILO estimate)		
gini_index	Gini index		
hdi_index	Human Development Index (HDI)		
nurses_per_10000	Nursing and midwifery personnel (per 10,000 inhabitants)		

Results

The output of *summary(doubleselect)* [shown in the table below] shows the estimate, standard error, t-value, and p-value for the effect of the selected treatment variable on all of the potentially usable outcome variables (derived from the various survey items denoting trust).

Double Selection Regression Estimates				
Variable	**Estimate**	**Std. Error**	**t value**	**Pr(>|t|)**
Trust In Parliament	3.99E-06	1.56E-04	0.026	**0.98**
Trust In Legal System	3.72E-05	1.58E-04	0.236	**0.814**
Trust In Police	-5.32E-05	1.61E-04	-0.33	**0.741**
Trust In Politicians	1.40E-05	1.23E-04	0.114	**0.909**
Trust In Political Parties	4.00E-05	1.22E-04	0.327	**0.743**
Trust In European Parliament	-0.0002071	0.0001673	-1.238	**0.216**
Trust In The United Nations	2.21E-05	1.80E-04	0.122	**0.903**

The analysis of the effect of media exposure on trust in various institutions yielded interesting findings. The estimated effects of media exposure on trust levels in different institutions were examined using the double selection method. The results indicate that none of the estimated effects were statistically significant.

For the variables related to trust, the measured trust levels followed a decreasing order: police, legal system, United Nations, parliament, EU, political parties, and politicians. Notably, all trust levels

showed an overall increasing trend over the observed years, except for trust in the legal system, which exhibited a slight wavering and a lesser increase compared to the other institutions.

The lack of statistically significant relationships between media exposure and trust in these institutions challenges the prevailing notion that media plays a direct and influential role in shaping trust levels. It suggests that other factors beyond media exposure may have a more significant impact on trust formation.

The distinct trend observed in trust in the legal system, where it did not increase as significantly as other institutions, is intriguing. This discrepancy might be attributed to specific factors related to the legal system itself or contextual influences that affect public perceptions of trust in this particular institution. Further qualitative investigation and analysis of contextual factors can shed light on these dynamics and provide a deeper understanding of the nuances surrounding trust in the legal system.

Regarding trust in the European Parliament, the estimated effect was also not statistically significant. This result diverges from the overall increasing trend observed in trust levels for the other institutions. The implications of this finding could suggest that media exposure might have a different impact on trust in the European Parliament compared to other institutions. Factors such as the perception of the European Union, political dynamics at the European level, or the influence of other social and cultural factors may contribute to this distinct result. Exploring these factors in future research can enhance our understanding of the complexities involved in shaping trust in the European Parliament and its relationship with media exposure.

The analysis reveals that media exposure does not demonstrate a statistically significant effect on trust levels in various institutions. The differing trends in trust levels, particularly in the legal system and the European Parliament, warrant further investigation to uncover the underlying dynamics that contribute to these patterns. The findings highlight the need for a comprehensive and

multidimensional approach to understanding the intricate relationship between media, trust, and public perceptions in different institutional contexts.

For thoroughness, we also conducted a fixed effects model to account for country and time effects. The estimates of that model are shown in the table below for trust in European parliament (as that had the greatest deviation for the previous regression estimates.

Fixed Effects Model Estimates					
Variable	**Estimate**	**Std. Error**	**t value**	**Pr(>|t|)**	**Significance**
full_dataset.cntryCZ	-5.4676935	3.00423728	-1.82	0.069549	.
full_dataset.cntryEE	-3.1016577	3.23552431	-0.9586	0.338358	
full_dataset.cntryFI	-1.9227233	4.02216314	-0.478	0.632903	
full_dataset.cntryFR	-3.4299161	4.78846808	-0.7163	0.474255	
full_dataset.cntryHU	-5.4546323	4.99420616	-1.0922	0.275442	
full_dataset.cntryIS	**5.34171935**	**2.47241614**	**2.1605**	**0.031358**	*
full_dataset.cntryIT	-3.9950448	5.61458104	-0.7115	0.477182	
full_dataset.cntryLT	-4.8099707	3.77601213	-1.2738	0.203507	
full_dataset.cntryNL	-1.3171511	3.31402038	-0.3974	0.691261	
full_dataset.cntryNO	-0.973505	4.7158611	-0.2064	0.836564	
full_dataset.cntryPT	-2.7048376	3.94012533	-0.6865	0.492827	
full_dataset.cntrySI	-3.6637419	3.63085372	-1.0091	0.313591	
full_dataset.nwspol	0.00017551	0.00082646	0.2124	0.831933	
full_dataset.proddate	-0.0022797	0.00133969	-1.7016	0.089642	.
essround	0.62381337	0.58023332	1.0751	0.28301	
netustm	**0.00158911**	**0.00053438**	**2.9737**	**0.00313**	**
cptppola	-0.2000974	0.10731824	-1.8645	0.063021	.
psppipla	**0.69046111**	**0.12400263**	**5.5681**	**4.89E-08**	***
sgnptit	0.11535457	0.20497076	0.5628	0.573914	
stfeco	0.06027107	0.06091134	0.9895	0.323055	
stfedu	**0.1605111**	**0.06165466**	**2.6034**	**0.009593**	**
stfgov	**0.26689894**	**0.0536386**	**4.9759**	**9.87E-07**	***
stfhlth	0.10890325	0.05971348	1.8238	0.068975	.

vote	0.16363553	0.17816992	0.9184	0.358981	
imsmetn	**-0.3041032**	**0.13981558**	**-2.175**	**0.030245**	*
dscrntn	-0.1851212	0.95051145	-0.1948	0.845686	
dscrrce	**2.92235006**	**0.96942518**	**3.0145**	**0.002747**	**
iprspot	0.02646206	0.0780612	0.339	0.734804	
revenue	0.12998502	0.18869838	0.6889	0.491339	
tax_revenue	-0.1507158	0.25376791	-0.5939	0.552925	
edu_expenditure	-0.2582234	0.21089543	-1.2244	0.221556	
employment_ratio	-0.2757457	0.22488662	-1.2262	0.220902	
unemployment	-0.4889943	0.3087946	-1.5836	0.114128	
democracy_index	-0.7921259	1.24113338	-0.6382	0.523711	
death_rate	**0.79110423**	**0.23922712**	**3.3069**	**0.001033**	**
time2	-0.2232546	0.27733645	-0.805	0.421327	
time3	-0.9012131	0.62412973	-1.444	0.149579	
time4	-0.6103905	1.67787888	-0.3638	0.71622	

The fixed effects model was applied to analyze the relationship between trust in the European Parliament and various factors. The estimated effects of different variables on trust in the European Parliament are presented below. However, it should be noted that not all of the estimated effects were statistically significant.

Among the country-specific fixed effects, the coefficients for several countries were negative but did not reach statistical significance. These include the Czech Republic, Estonia, Finland, France, Hungary, Italy, Lithuania, Netherlands, Norway, Portugal, and Slovenia. The negative coefficients suggest that individuals from these countries tended to exhibit lower levels of trust in the European Parliament compared to the reference country.

On the other hand, the coefficient for Iceland was positive and statistically significant, indicating that individuals from Iceland had higher levels of trust in the European Parliament compared to the reference country. This finding suggests that contextual factors specific to Iceland may have contributed to the higher trust levels observed.

Regarding the other variables, several exhibited statistically significant effects on trust in the European Parliament. Notably, variables such as net use time, education level, government satisfaction, race discrimination, and death rate showed significant positive effects on trust. This implies that individuals who spent more time using the internet, had higher education levels, expressed greater satisfaction with the government, reported less race discrimination, and lived in countries with lower death rates tended to have higher levels of trust in the European Parliament.

Conversely, variables such as the perception of media influence, political polarization, and economic indicators did not exhibit statistically significant effects on trust in the European Parliament. This suggests that factors beyond media exposure, political polarization, and economic conditions play a more prominent role in shaping trust in this particular institution.

It is important to highlight that the lack of statistical significance for certain variables should not undermine their potential influence on trust in the European Parliament. The non-significant estimates may be attributed to factors such as limited sample size, measurement errors, or the complex interplay of various determinants of trust.

The findings from the fixed effects model provide insights into the factors associated with trust in the European Parliament. The positive influence of factors such as net use time, education level, government satisfaction, race discrimination, and death rate indicates the multidimensionality of trust formation in this context. Further research is needed to explore the underlying mechanisms and contextual factors that drive trust dynamics in the European Parliament.

In conclusion, the fixed effects model revealed both significant and non-significant effects of various factors on trust in the European Parliament. The analysis underscores the complexity of trust formation and highlights the importance of considering country-specific factors, individual characteristics, and contextual influences when examining trust in supranational institutions.

Discussion

While we find no significant result using our specified model, our lack of a “result” is still a result. Contrary to common thinking and prevailing concerns surrounding the rise of echo chambers, heightened paranoia, and political extremism in the digital age, our research findings challenge the popular narrative. Prior to conducting this study, it was widely believed that individuals' exposure to media, particularly online platforms, would contribute to a decline in civil trust and an increase in societal divisions. However, our empirical model results suggest a different picture, one that challenges these assumptions and calls for a nuanced understanding of the complex dynamics at play.

In recent years, the proliferation of online information sources and the prevalence of social media platforms have led to the formation of echo chambers, where individuals are exposed primarily to information that aligns with their pre-existing beliefs and biases. This phenomenon, coupled with the amplification of extreme viewpoints in online spaces, has fueled concerns about the erosion of trust in institutions, including the government. However, our findings do not support the hypothesis that media exposure has a statistically significant impact on civil trust.

The lack of a significant relationship between media exposure and civil trust raises intriguing questions about the factors driving societal trust dynamics in the digital era. It suggests that while echo chambers and online extremism may exist, their influence on individuals' overall trust in the government might not be as significant as anticipated. This finding calls for a deeper examination of the multifaceted nature of trust formation, taking into account other variables, contextual factors, and mechanisms that may shape individuals' perceptions and attitudes.

Furthermore, our results challenge the notion that increased media exposure inevitably leads to greater distrust in the government. While the spread of misinformation and the polarization of public discourse are undeniably pressing issues, our study suggests that media consumption alone

may not be the sole driver of declining trust. It underscores the importance of considering a broader range of factors, such as socio-political context, historical events, economic conditions, and individual experiences, in shaping trust dynamics.

This discrepancy between common assumptions and our empirical findings highlights the complexity of trust formation in the digital age. It urges researchers and policymakers to adopt a more nuanced and evidence-based approach when addressing issues related to media influence and societal trust. Moving forward, a comprehensive understanding of the interplay between media exposure, echo chambers, paranoia, extremism, and civil trust requires interdisciplinary collaboration, advanced research methodologies, and a continued exploration of the underlying mechanisms driving these phenomena.

All in all, our study challenges the prevailing belief that media exposure leads to a decline in civil trust, particularly in the context of echo chambers, paranoia, and extremism. While these concerns remain valid, our research findings call for a more nuanced understanding of trust dynamics, acknowledging the influence of a range of variables and the complex interplay of societal factors. By questioning common assumptions and further investigating the intricacies of trust formation, we can develop evidence-based strategies to foster a more informed, resilient, and trusting society in the digital age.

PROJECT LIMITATIONS

Limitations of the Double Selection Method

While the double selection method has demonstrated its effectiveness in variable selection and causal inference, it is important to acknowledge its limitations. First and foremost, the method assumes a specific model specification, such as linearity or functional form, to estimate the causal effects accurately. If the assumed model does not accurately capture the true relationship between

variables, the estimated effects may be biased or unreliable. Therefore, careful consideration should be given to the chosen model specification and potential misspecifications in the analysis.

Moreover, the double selection method relies on certain assumptions, including correct specification of the treatment and outcome variables, absence of unmeasured confounding, and the absence of selection bias. Violating these assumptions can lead to biased or misleading results. It is crucial to assess the plausibility of these assumptions in the given context and consider potential sources of bias that may impact the validity of the estimated causal effects. Given the nature of our data, it is entirely up to the procedure of the survey makers whether the collected data is biased or not.

Furthermore, the generalizability of the selected variables and estimated effects should be carefully interpreted. The double selection method identifies variables based on the observed data and may not capture the true underlying causal structure in different contexts or populations. Additionally, interpreting the selected variables solely in terms of their causal influence can be challenging. The double selection method aims to identify variables with a direct causal impact on the outcome but does not provide insights into the specific mechanisms or pathways through which these variables exert their effects.

Lastly, it is important to acknowledge the issue of multiple hypothesis testing when using the double selection method. Since the method tests multiple hypotheses for each potential variable during the selection process, there is an increased risk of false-positive findings or inflated Type I error rates if appropriate adjustments are not made.

Limitations of the Data

While the European Social Survey (ESS) provides valuable data for our research, it is important to acknowledge certain limitations inherent to this dataset. Firstly, the ESS is based on self-reported survey responses, which may be subject to recall bias or social desirability bias. Respondents' recollection of media exposure and their level of trust in government may be influenced by

subjective interpretations and personal biases. Moreover, social desirability bias may lead individuals to provide responses they perceive as socially acceptable or aligning with societal norms, rather than reflecting their true beliefs or behaviors. These biases can introduce measurement error and affect the accuracy and reliability of the data.

Another limitation of survey data, particularly when utilizing survey items that ask for favor or employ spectrums of agreement and disagreement, is the potential for response bias. Respondents may interpret the scales differently, resulting in varying levels of agreement or disagreement. Additionally, respondents may experience response fatigue or choose a neutral response option as a default, irrespective of their actual opinions. This can reduce the granularity of the data and limit the ability to capture nuanced variations in attitudes and beliefs.

Causal analysis using survey data also faces certain inherent limitations. Establishing causality requires careful consideration of confounding factors and the potential for reverse causality. While survey data can provide valuable insights into associations between variables, establishing a causal relationship is challenging due to the presence of unobserved factors and the inability to control for all relevant variables. Additionally, survey data may be prone to selection bias, as certain segments of the population may be less likely to participate, leading to potential non-representativeness and limiting the generalizability of the findings.

When using survey items that ask for favor and employ spectrums of agreement and disagreement, it is important to recognize the limitations of these response formats. The interpretation of favor or agreement can be subjective and influenced by various factors such as cultural background, individual values, or prior experiences. This subjectivity can introduce ambiguity and reduce the precision of the measurements. Moreover, the placement of response options and the absence of a clear anchor point can further complicate the interpretation of results and introduce variability in respondents' interpretations.

It is crucial to acknowledge these limitations when interpreting the findings from our analysis. While the ESS dataset and survey data provide valuable insights into the relationship between media exposure and civil trust, the inherent biases, limitations in causality inference, and challenges associated with survey items that ask for favor and employ spectrums of agreement and disagreement need to be considered. A comprehensive understanding of these limitations allows for a more nuanced interpretation of the results and highlights the need for further research using complementary methodologies to validate and strengthen our findings.

RECOMMENDATIONS

To enhance the quality and robustness of the research on the effect of media exposure on civil trust, several recommendations and improvements can be implemented. Firstly, diversifying data sources by incorporating additional datasets, such as online media tracking or social media analytics, can provide a more comprehensive understanding of media exposure. This supplementation of data helps to mitigate the limitations of self-reported survey data and allows for a broader range of perspectives and behaviors to be captured.

In addition, extending the temporal scope through longitudinal analysis can strengthen causal analysis. While the three rounds of data across six years in the European Social Survey (ESS) present an opportunity, including more waves of data or exploring other longitudinal datasets can provide a deeper understanding of the relationship between media exposure and civil trust over time. Longer-term data collection enables the identification of trends and potential lagged effects, offering a more robust analysis.

To gain a more holistic understanding, employing a mixed-methods approach is recommended. Integrating qualitative research methods, such as interviews or focus groups, alongside quantitative survey data allows for in-depth insights into individuals' perceptions, motivations, and experiences

regarding media exposure and civil trust. This combination of approaches enables triangulation of findings and enhances the credibility and comprehensiveness of the research.

To strengthen causal inference, incorporating experimental design elements is crucial. Randomized controlled trials (RCTs) or quasi-experimental designs can be utilized to manipulate media exposure and assess its direct impact on civil trust. Through random assignment of participants to different treatment groups and control conditions, researchers can isolate the causal effect of media exposure, providing more robust and valid findings.

Improvements can also be made to the survey instrument itself. Considering the limitations associated with survey items that ask for favor and employ spectrums of agreement and disagreement, it is important to refine the survey instrument. Employing validated scales and standardized measurement tools that have undergone rigorous psychometric testing, along with clear instructions, well-defined response options, and anchor points, can help minimize response biases and enhance the reliability and validity of the data.

Controlling for potential confounding variables is another critical aspect of causal analysis. Including relevant covariates, such as demographic characteristics, political orientation, and media consumption habits, in the analysis can reduce the impact of omitted variable bias and strengthen the causal inference. Carefully selecting and controlling for these confounding variables will lead to more robust conclusions.

To enhance the generalizability of the findings, replication and external validation of the study are recommended. Replicating the research using different datasets and in diverse contexts can strengthen the validity of the findings. External validation through independent datasets or comparative studies across different countries or regions can further enhance the reliability of the research and identify potential contextual factors that may influence the relationship between media exposure and civil trust.

By implementing these recommendations and improvements, we would be able to enhance the quality, reliability, and validity of the research findings. Addressing the limitations identified earlier and refining the methodological approach contributes to a more comprehensive understanding of the impact of media exposure on civil trust and paves the way for future advancements in the field.

CONCLUSIONS AND FUTURE RESEARCH PROSPECTS

Our research aimed to investigate the effect of media exposure on civil trust. Through the analysis of three rounds of data spanning six years from the European Social Survey (ESS), we found no statistically significant relationship between media exposure and civil trust. While our results did not support the hypothesized impact, our study contributes to the existing literature by providing insights into the complexities of this relationship and highlighting the need for further research.

It is important to acknowledge the limitations of our study. The use of survey data, while valuable for capturing large-scale trends and attitudes, presents inherent limitations, including potential measurement biases, self-reporting errors, and the inability to establish causal relationships. Furthermore, the selection of survey items that ask for favor or employ spectrums of agreement and disagreement may introduce response biases and limitations in capturing the nuanced dimensions of civil trust.

To overcome these limitations and strengthen future research, several recommendations and improvements can be made. Diversifying data sources by incorporating additional datasets, extending the temporal scope through longitudinal analysis, and employing a mixed-methods approach can provide a more comprehensive understanding of media exposure and its impact on civil trust. Additionally, incorporating experimental design elements, refining the survey instrument, controlling for confounding variables, and conducting replication and external validation studies can enhance the quality, reliability, and generalizability of the findings.

Looking ahead, future research ventures can explore alternative methodologies and data sources. The inclusion of online media tracking, social media analytics, and qualitative research methods can offer deeper insights into the dynamics of media exposure and civil trust. Moreover, investigating the role of contextual factors, such as cultural differences and political climates, can provide a more nuanced understanding of the relationship.

In conclusion, while our study did not find a significant effect of media exposure on civil trust, it underscores the need for continued exploration in this field. It paints a more optimistic image than what was hypothesized. One that doesn't lend itself to fear mongering rhetoric that the loud minority often report and spread. The evolving nature of media consumption, the prevalence of misinformation, and the impact of digital platforms on public discourse necessitate ongoing research to unravel the complex dynamics at play. By addressing the limitations and incorporating the recommended improvements, future studies can advance our understanding of the relationship between media exposure and civil trust, contributing to the development of evidence-based strategies for fostering a more informed and trusting society.

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