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https://orcid.org/0000-0003-4758-8588

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Laura Galdikienė

Trust and Social Norms in Collective Action Problems: Essays in Behavioral Economics

DOCTORAL DISSERTATION

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Academic Supervisor – Prof. Dr. Jūratė Jaraitė-Kažukauskė (Vilnius University, Social Sciences, Economics, S 004).

Academic Consultant – Dr. Agnė Kajackaitė (University of Milan, Social Sciences, Economics, S 004).

This doctoral dissertation will be defended in a public meeting of the Dissertation Defense Panel:

Chairman – Prof. Dr. Vincentas Rolandas Giedraitis (Vilnius University, Social Sciences, Economics, S 004).

Members:

Assoc. Prof. Dr. Stefania Bortolotti (University of Bologna, Social Sciences, Economics, S 004),

Assoc. Prof. Dr. Giedrė Dzemydaitė (Vilnius University, Social Sciences, Economics, S 004),

Dr. Yannick Joye (Vilnius University, Social Sciences, Management, S 003),

Assoc. Prof. Dr. Robertas Zubrickas (Vilnius University, Social Sciences, Economics, S 004).

The dissertation shall be defended at a public meeting of the Dissertation Defense Panel at 13:00 on the 25th of October in Room 417 of the Faculty of Economics and Business Administration Vilnius University. Address: Saulėtekio av. 9, Vilnius, Lithuania. Tel. +37052366126; e-mail: evaf@evaf.vu.lt

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Laura Galdikienė

Pasitikėjimas ir socialinės normos kolektyvinio veiksmo problemose: Esės apie elgsenos ekonomiką

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Mokslinė vadovė:

Prof. dr. Jūratė Jaraitė-Kažukauskė (Vilniaus universitetas, socialiniai mokslai, ekonomika, S 004).

Mokslinė konsultantė:

Dr. Agnė Kajackaitė (Milano universitetas, socialiniai mokslai, ekonomika, S 004).

Gynimo taryba:

Prof. dr. Vincentas Rolandas Giedraitis (Vilniaus universitetas, socialiniai mokslai, ekonomika, S 004).

Nariai:

Doc. dr. Stefania Bortolotti (Bolonijos universitetas, socialiniai mokslai, ekonomika, S 004),

Doc. dr. Giedrė Dzemydaitė (Vilniaus universitetas, socialiniai mokslai, ekonomika, S 004),

Dr. Yannick Joye (Vilniaus universitetas, socialiniai mokslai, vadyba, S 003),

Doc. dr. Robertas Zubrickas (Vilniaus universitetas, socialiniai mokslai, ekonomika, S 004).

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Laura Galdikienė
September 9, 2024
Vilnius, Lithuania.

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INTRODUCTION

Background and relevance

Collective action problems, or social dilemmas, have garnered considerable interest from researchers across various fields, including economics. These problems arise in situations where individuals would benefit from cooperating to achieve a common goal. However, conflicting self-interests often prevent cooperation (Olson, 1965). This can lead to public goods not being provided, such as a clean and/or healthy environment, or to the depletion of common resources, such as fisheries or forests. Recent global developments have underscored the importance of understanding and addressing collective action problems.

In 2020, the world faced a global health crisis—the COVID-19 pandemic. Containing the spread of the infectious disease and mitigating its consequences required societal cooperation through social distancing, mask-wearing, vaccinations, and compliance with other health measures. However, some individuals frequently decided not to help prevent the spread of the virus. Although the pandemic has largely been contained, addressing other pressing social dilemmas, particularly climate change, remains a global challenge. Without substantial and rapid reductions in greenhouse gas emissions, climate change will cause irreversible damage to humans and ecosystems (IPCC, 2022). Yet, significant climate action has proven elusive at national and global levels.

Traditional collective action theory, as pioneered by Olson (1965), argues that individuals cannot solve collective action problems independently and require externally enforced rules. However, empirical evidence indicates that groups of people can solve many collective action problems without external intervention (for a review, see Ostrom, 2000). In overcoming collective action problems, particularly involving a limited number of individuals, communities or entire societies frequently rely on resources such as trust or social norms, which facilitate cooperation (Fukuyama, 1996; Ostrom, 2000; Putnam, 2000). These cooperation-enhancing resources are generally referred to as social capital.

Generalized or social trust, extending beyond immediate social circles, fosters cooperation by mitigating exploitation concerns, and thereby the perceived risks associated with cooperation (Yamagishi and Sato, 1986). Institutions that enforce rules and penalize free riders enhance cooperation, highlighting the role of institutional trust in overcoming collective action problems. Social norms, which reflect expectations about the behavior or

values of others, also influence actions and beliefs regarding collective action problems. Compliance with social norms fulfills individuals' desires to conform, avoid punishment, benefit from coordinated actions, or heed informational cues (Constantino et al., 2022). Nevertheless, exposure to situations requiring collective action, such as war (Guriev and Melnikov, 2016), natural disasters (Skidmore and Toya, 2014; Veszteg et al., 2015; Cassar et al., 2017), or health crises (Aassve et al., 2021; Eichengreen et al., 2021, 2023), can affect the development of social capital itself, either increasing or reducing societies' potential to address future collective action problems.

Research problem

The empirical literature largely supports a positive relationship between trust and cooperation in many social dilemmas (e.g., Van Lange et al., 1998; Murphy, 2004; Uslaner and Brown, 2005; Mannemar Sønderskov, 2009; Bäck and Christensen, 2016; Harring et al., 2019). However, most studies have focused on small-scale collective action problems, leaving gaps in understanding how insights from local dilemmas apply to larger-scale problems. The global scale and public health importance of the COVID-19 pandemic offer a unique opportunity to explore the role of trust in addressing large-scale collective action problems. Vaccination against infectious diseases, as one example, not only provides direct immunity but also offers indirect protection to others. However, individuals can free-ride by choosing not to be vaccinated, taking advantage of the immunity provided by others. Failure to achieve cooperation in vaccination behavior may diminish the effectiveness of health crisis containment.

While there is extensive research on trust and vaccinations during the COVID-19 pandemic (e.g., Kreps et al., 2020; Grüner and Krüger, 2021; Lazarus et al., 2021; Romano et al., 2021; Sturgis et al., 2021; Thunström et al., 2021; Bass et al., 2022), significant gaps remain. Many studies examine only one or a few types of trust, potentially leading to biased estimates. Moreover, there is limited evidence on how specific forms of trust, such as trust in strangers or pharmaceutical companies, influence vaccination behavior during a pandemic. Lithuania, a European country with historically low levels of trust (European Commission, 2021; Haerpfer et al., 2022) that was significantly affected by the COVID-19 pandemic (The Economist, 2020), is excluded from most studies. Therefore, Chapter 1 of the thesis explores: How do different forms of trust relate to willingness to vaccinate during the COVID-19 pandemic in Lithuania?

Climate change represents one of the most significant collective action problems of our time (IPCC, 2022), and while there is widespread agreement among individuals in Western countries (European Commission, 2023; Leiserowitz et al., 2023), individuals tend to systematically misperceive social norms related to climate change. That is, due to the overwhelming visibility of contrasting views, individuals consistently underestimate the climate-friendly actions and beliefs of others (Leviston et al., 2013; Geiger and Swim, 2016; Sokoloski et al., 2018; Mildenberger and Tingley, 2019; Sparkman et al., 2022; Andre et al., 2024). This phenomenon of widespread misperception of actions or beliefs, also known as "pluralistic ignorance," may reduce individuals' motivation to engage in climate action themselves, including their willingness to raise the issue of climate change in public—a phenomenon known as "self-silencing" (Geiger and Swim, 2016).

The existing literature suggests that providing accurate information regarding true beliefs or behaviors can correct misperceptions of social norms (Miller and Prentice, 2016; Bursztyn et al., 2020; Dillon and Lochman, 2022), including those related to climate change (Pompeo and Serdarevic, 2021; Fang and Innocenti, 2023; Andre et al., 2024). However, the extent to which such interventions can affect climate action remains inconclusive (Pompeo and Serdarevic, 2021; Fang and Innocenti, 2023; Andre et al., 2024). Moreover, while policy-centered climate actions, including support for climate policies, are critical for actual policy implementation (Page and Shapiro, 1983; Burstein, 2003), research on social norm misperceptions focused on climate action linked to policies, such as policy-focused climate activism or participation in public discussions of climate policies, is limited. The studies that do examine climate action linked to policies often focus predominantly on the private dimension, that is, actions that remain largely invisible to others. This neglects the more visible, public climate actions (Mildenberger and Tingley, 2019; Fang and Innocenti, 2023; Andre et al., 2024). Therefore, Chapter 2 of the thesis explores the question: Can informational interventions aimed at correcting misperceptions about climate policy support increase individuals' willingness to engage in policy-centered private and public climate action?

Given the role of social capital in addressing collective action problems, the literature has placed considerable attention on the factors that influence its development, particularly the development of trust (e.g., Putnam et al., 1993; Alessina and La Ferrara, 2002; Nunn and Wantchekon, 2011). While some studies argue that trust is an inert cultural construct (Bisin and Verdier, 2001; Guiso et al., 2008; Tabellini, 2008), others demonstrate that significant events

can profoundly impact the development of trust (Skidmore and Toya, 2014; Veszteg et al., 2015; Van der Cruijsen et al., 2016; Algan et al., 2017; Cassar et al., 2017; Ananyev and Guriev, 2019). Health crises, in particular, have been shown to affect trust levels (e.g., Aassve et al., 2021; Li et al., 2021; Aassve et al., 2022, Gambetta and Morisi, 2022; Casoria et al., 2023). However, research on the relationship between the COVID-19 pandemic and trust has provided mixed results and warrants further investigation.

The pandemic's effects on trust may depend on how the health crisis is communicated to the public (Aassve et al., 2021). Previous findings in the literature indicate that, depending on the content of the message, exposure to information disseminated through mass media can both increase hostility between people (DellaVigna et al., 2014; Yanagizawa-Drott, 2014; Wang, 2021) and help build interpersonal trust (Antoci et al., 2019; Blouin and Mukand, 2019). During the COVID-19 pandemic, much of the public communication took the form of norm-based narratives, that is, messages or stories evaluating societal health behavior in terms of compliance or non-compliance with pandemic norms. The effects of such narratives on trust remain unexplored, therefore Chapter 3 of this doctoral thesis asks the question: How does norm-based communication affect individuals' trust in strangers?

Aim, objectives, and tasks

This dissertation aims to investigate the interactions between social capital, particularly trust and social norms, and (un)cooperative individual behavior or behavioral intentions in the context of collective action problems. To achieve this goal, the following objectives were addressed:

1. Explore the role of different forms of trust in explaining vaccination intentions during the COVID-19 pandemic.
2. Evaluate the impact of misperception-correcting information regarding climate policy support on both private and public policy-centered climate actions.
3. Measure the impact of the COVID-19 pandemic and related norm-based narratives on interpersonal trust.

To accomplish these objectives and thereby contribute to the behavioral economics literature, the following research tasks were implemented:

1. Review the international literature on the impact of trust and social norms on individual behavior, as well as the effects of different types

of shocks (e.g., health and economic crises, natural disasters, etc.), and communication on the development of trust.
2. Explore theoretical models to develop the hypotheses to be tested in the dissertation.
3. Design a survey and experiments to answer the research questions of the dissertation.
4. Collect the necessary data to answer the research questions of the dissertation.
5. Assess the relationship between trust and willingness to vaccinate, based on cross-sectional survey data from Lithuania.
6. Measure the impact of informational interventions on private and public climate policy actions using experimental data from the United States (US).
7. Evaluate the effects of pandemic salience and norm-based communication on trust using experimental data from the United Kingdom (UK).

Research methods

The research conducted for this dissertation employs both survey and experimental methods. Chapter 1 is based on a nationally representative online panel survey of 973 Lithuanian adults, conducted by a survey company in January 2021. The survey was designed to collect information on individuals' self-reported intentions to be vaccinated against COVID-19, their self-reported trust in different institutions and trust in strangers, and several covariates, including socio-demographic characteristics, self-reported health, worries about health and financial situation, and conspiracy beliefs. To determine the relationship between vaccination intent and the different types of trust, I estimated an ordered logistic regression model.

Chapter 2 is based on an incentivized online, between-subject design experiment involving 1,587 Americans, conducted in the US in March 2024. The experiment involved two experimental conditions: a treatment condition and a control condition. Information about actual climate policy support was provided to participants in the treatment condition, while no such information was provided in the control condition. Private policy climate action was measured by the incentivized decision to donate to an organization lobbying for climate policies, while public climate action was measured by the participant’s minimum acceptable reward for attending a climate policy discussion with peers, as well as by their self-reported willingness to attend the meeting. The impact of information on climate action (both private and

public) was analyzed using ordinary least squares (OLS) and binary probit regression models.

Chapter 3 is based on an incentivized online, between-subject design experiment, which I conducted in the UK between May and June 2022. The experiment consisted of four treatments, with 217–220 participants recruited through Prolific for each treatment. In two treatments, participants received information containing norm-based pandemic narratives; in one treatment, participants were reminded of the COVID-19 pandemic; and in the last treatment, participants were provided with neutrally worded information unrelated to the pandemic. Trust was measured using the incentivized trust game (Berg et al., 1995), and data on individuals' attitudes toward the pandemic emergency, vaccination, and individual characteristics, were collected. The effects of norm-based communication and the pandemic on trust were analyzed using t-tests and linear regression analysis with OLS.

Statements presented for defense

1. Higher trust in the government, science, and pharmaceutical companies is associated with a greater willingness to be vaccinated against COVID-19 in Lithuania. On average, a 1-point increase in trust in these institutions is associated with a 3.7, 3.9, and 4.7%-point higher probability of strongly agreeing to be vaccinated, respectively. There is no convincing evidence that trust in strangers, healthcare, or the media is associated with COVID-19 vaccination willingness in Lithuania.
2. Providing information that corrects misperceptions regarding public support for carbon taxation has a marginal negative effect on Americans' willingness to engage in private climate action, as measured by donations to a policy-focused climate organization, driven by individuals who overestimated public support for carbon taxation. After receiving information regarding actual public support for carbon taxation, these participants are led to reduce their donations by up to 22% on average, suggesting that the intervention has a backfiring effect.
3. Providing information that corrects misperceptions regarding public support for carbon taxation positively affects Americans' willingness to engage in public climate action, reducing the average minimum acceptable reward required to participate in climate policy discussions with peers. The effect on the willingness to discuss climate policies is largest among Republicans, with the intervention reducing the

average minimum acceptable reward required by Republicans by more than 20%. There is no evidence of the treatment effect on self-reported willingness to participate in climate policy discussions.

4. Providing individuals with narratives describing behaviors that support or violate pandemic social norms and priming individuals with the COVID-19 pandemic do not significantly affect the average trust behavior of the British during the COVID-19 pandemic.
5. Providing individuals with uncooperative narratives—messages that highlight society's non-compliance with pandemic norms—induces them to perceive the pandemic as a more severe health emergency and to adopt a more pro-vaccine stance overall.

Scientific novelty

The research presented in this dissertation is novel and contributes to the literature in at least three ways. First, it enhances the understanding of the relationship between trust and cooperation in the context of large-scale collective action problems, specifically vaccinations. A comprehensive analysis was conducted to examine the role of six different types of trust in influencing vaccination intentions during the COVID-19 pandemic, while previous studies have largely focused on a single type or few selected types of trust (Grüner and Krüger, 2021; Lazarus et al., 2021; Sturgis et al., 2021; Thunström et al., 2021). This analysis includes specific types of trust, such as trust in strangers and trust in pharmaceutical companies, for which there is limited evidence regarding their influence on health behavior during a pandemic. Additionally, this dissertation provides, for the first time, results on trust and vaccinations in Lithuania, a case that has not been extensively studied in the pandemic literature but is notable for its struggles with slow-moving vaccination rates (Ritchie, Mathieu, Rodés-Guirao, et al., 2020) and high vaccine skepticism (Bergmann et al., 2021). Lithuania is also an intriguing case due to its post-Soviet legacy, characterized by relatively low levels of social trust (Haerpfer et al., 2022) and institutional trust (European Commission, 2021). Findings on the interaction between trust and individual behavior in collective action problems, particularly within settings outside the commonly studied Western countries, are highly relevant for effectively addressing global challenges.

Second, this research contributes to the debate in the climate literature concerning the effectiveness of misperception-correcting informational interventions in promoting individual climate action. Unlike previous studies (Mildenberger and Tingley, 2019; Pompeo and Serdarevic, 2021; Fang and

Innocenti, 2023; Andre et al., 2024), this study is entirely policy-focused, examining misperceptions about support for a specific climate policy (i.e., carbon taxation) and policy-focused individual climate action (i.e., willingness to donate to a climate organization that lobbies for climate policies and to engage in climate policy discussions). Given the prevalence of high climate policy support misperceptions (Sparkman et al., 2022) and the stagnant climate policy implementation among many Western countries, this policy-focused approach is particularly relevant. Additionally, this study investigates the effect of misperception-correcting information about actual support for carbon taxation on public climate action by estimating individuals' willingness to accept a reward for participating in actual climate policy discussions. To my knowledge, this is a novel approach. To capture public climate action, previous studies on "pluralistic ignorance" have largely relied on self-reported measures, including willingness to share information on social media (Pompeo and Serdarevic, 2021), or intentions for climate activism (Andre et al., 2024) and climate discussions (Geiger and Swim, 2016). These approaches may not accurately reflect true behavior due to social desirability bias (Vesely and Klöckner, 2020).

Third, the results of this research improve the understanding of the impact of norm-based communication on the development of social capital. To the best of my knowledge, this research is the first to investigate the causal relationship between norm-based narratives, including both cooperative and uncooperative types, and interpersonal trust. This research also contributes to the ongoing exploration of the general relationship between the COVID-19 pandemic and trust, which has yielded mixed results thus far (Esaiasson et al., 2020; Aksoy et al., 2021; Iacono et al., 2021; Li et al., 2021; Shachat et al., 2021; Aassve et al., 2022; Gambetta and Morisi, 2022; Casoria et al., 2023). It is important to note that this study was conducted during a later stage of the COVID-19 pandemic, in a context where the UK had few remaining pandemic restrictions in place (Hale et al., 2021) and a significant share of the population was fully vaccinated (Mathieu et al., 2021). This timing provided a less noisy experimental environment compared to earlier phases of the pandemic, thereby ensuring the high internal validity of the results.

Practical significance

The findings of this dissertation offer several significant insights for policymakers aiming to promote responsible individual behavior in addressing collective action problems. The positive association between institutional trust and individuals' willingness to vaccinate highlights the

necessity of establishing and reinforcing trust in key institutions when implementing public health policies. Transparent communication, coupled with consistent messaging from trusted sources, has the potential to reduce free-riding and increase compliance with public health measures during health crises. Moreover, the results of the "pluralistic ignorance" study reveal that correcting misperceptions about the level of public support for climate policies can mobilize publicly visible actions on climate change, such as a willingness to engage in climate policy discussions, though it may also diminish private climate actions. Consequently, policymakers and climate advocates should exercise caution in the planning of informational campaigns, considering targeted communication to avoid boomerang effects on the climate actions of certain societal groups. The finding that norm-based narratives do not have an immediate negative impact on trust further justifies the use of such communication in shaping public attitudes and behaviors related to health issues. This insight can aid policymakers and communication specialists in devising more effective messages aimed at influencing public attitudes during health crises, without fearing a negative impact on mutual trust within society.

Limitations

While this dissertation addresses relevant research questions and makes a clear contribution to the literature, several limitations remain. In Chapter 1, individuals' concerns about the safety, side effects, and effectiveness of the COVID-19 vaccine, which could significantly influence vaccination decisions, were not controlled for. As a result, the estimates of the trust variables might partially reflect these concerns. Additionally, the study relies on self-reported measures of trust and vaccination intentions, which may be subject to social desirability bias, potentially leading respondents to report higher levels of trust or willingness to vaccinate than they actually possess. Moreover, the evidence on vaccine acceptance is suggestive, and causal inferences cannot be drawn. In Chapter 2, the analysis reveals that Democrats and Republicans respond differently to the information treatment regarding climate policy discussions, but this research does not provide a clear explanation for this variation. Finally, in Chapter 3, the norm-based narratives and pandemic salience did not appear to affect trust, which may be at least partly due to the timing of the study, namely conducted at the end of the pandemic when its effects and related narratives might have already been realized. Additionally, differences in pandemic communication and the stringency of measures across countries could limit the generalizability of the results. Furthermore, the study did not account for individuals' normative

views about the pandemic or the extent to which they identified with norm violations, factors that could be important in determining the effect of the narratives on trust. These limitations provide direction for future research on trust and social norms in collective action problems.

Structure of dissertation

The doctoral dissertation is organized into three chapters. Chapter 1 assesses the relationship between different forms of trust and Lithuanians' willingness to be vaccinated during the COVID-19 pandemic. Chapter 2 evaluates the impact of misperception-correcting informational interventions on private and public climate actions. Chapter 3 investigates the effects of pandemic salience and norm-based communication on trust. Finally, the dissertation presents a comprehensive conclusion that integrates the findings from all chapters, discusses their policy implications and limitations, and suggests directions for future research.

1 TRUST AND VACCINATION

This chapter is based on joint work with Jūratė Jaraitė-Kažukauskė and Agnė Kajackaitė. It was published as Galdikiene, L., Jaraite, J., & Kajackaite, A. (2022). Trust and vaccination intentions: Evidence from Lithuania during the COVID-19 pandemic. PloS ONE, 17(11), e0278060. In this publication, L. Galdikienė served as the primary author.

In 2020, the world was hit by the COVID-19 pandemic, which has become one of the worst health crises in human history (Adam, 2022). Vaccines against COVID-19 were developed in record time, promising an effective solution to the pandemic (Ball, 2021). Although the containment of the pandemic is in everyone's collective interest, some people have been reluctant to get vaccinated (Dai et al., 2021). Hence, understanding the factors driving vaccination decisions is essential for designing effective policies and information campaigns to address current and future health crises. It could also help address other collective action problems, such as preventing the climate change disaster. Collective action problems (also referred to as social dilemmas) are such situations, where individuals would be better off cooperating to achieve a common objective but fail to do so due to conflicting individual interests (Olson, 1965).

Previous findings in the literature have shown that trust may facilitate cooperation in the pursuit of socially valuable activities (Ostrom and Ahn, 2009; Guiso et al., 2011). Trust can also play an important role in situations with information asymmetries (Larson et al., 2018). Since vaccination is related to a public good that requires cooperation and is characterized by information asymmetries between individuals and institutions involved in the vaccination process, in this paper, we aim to examine the association between different types of trust and willingness to get vaccinated. In particular, we study whether trust in strangers (a concept that is closely related to generalized trust), government authorities, science, the healthcare system, pharmaceutical companies, and the media can predict individual vaccination intentions in the COVID-19 pandemic in Lithuania.

Our study is novel in two aspects. First, we conduct a comprehensive analysis of the role of six different types of trust on vaccination intentions during the COVID-19 pandemic, while other studies similar to ours explore a single type of trust or at most a few selected types of trust (Grüner and Krüger, 2021; Lazarus et al., 2021; Sturgis et al., 2021; Thunström et al., 2021). To date, there is little evidence about the role of some specific types of trust, such as trust in strangers (Larson et al., 2018; Romano et al., 2021) or trust in

pharmaceutical companies, in explaining health behavior in a pandemic (Kreps et al., 2020; Bass et al., 2022). The second novelty relates to our focus on Lithuania—an interesting and unexplored case in the pandemic literature. Lithuania has suffered greatly from the COVID-19 pandemic and it has faced sluggish vaccinations and high vaccine skepticism among the older population (see subsection "1.1.1 Lithuanian context"). Lithuania is an interesting case also because of its post-Soviet legacy of relatively low levels of generalized trust, that is, general trust in other people, and trust in strangers (Haerpfer et al., 2022), as well as trust in different institutions, including the Parliament, political parties, public administration, regional or local authorities, and health and medical staff (European Commission, 2021).

To study the relationship between trust and vaccination intentions in Lithuania, we conducted a representative online panel survey among Lithuanian adults in January 2021 (N = 1,000). In the survey, we collected information on individuals' intentions to get vaccinated against COVID-19 when such a free vaccine becomes available to them, six different types of trust, and many potential covariates. We explore the following four types of trust in institutions that are involved in the vaccination process: trust in science; trust in pharmaceutical companies as these institutions together with scientific community develop the COVID-19 vaccines; trust in the healthcare system as it delivers the vaccines to individuals; and trust in government authorities, since they decide on the vaccine by approving it. We also study trust in the media, because it provides information on the vaccines and the vaccination process. For interpersonal trust, we explore trust in strangers, because it should help societies overcome the free-riding problem and encourage cooperation between strangers (Ostrom and Ahn, 2009; Guiso et al., 2011). We focus on trust in strangers instead of the broader definition of generalized trust. The broader definition of generalized trust measures trust in other people in general, which is most often elicited by asking "Generally speaking would you say that most people can be trusted or that you can't be too careful in dealing with people? (Rosenberg, 1956)". Generalized trust and trust in strangers are very closely related concepts and are often used as synonyms (Guiso et al., 2011). However, we think that trust in strangers eliminates the ambiguity inherent in the broader concept of generalized trust.

We find that higher trust in the government, science, and pharmaceutical companies is associated with a higher willingness to get vaccinated against COVID-19. We find no such evidence for trust in strangers, healthcare, or trust in the media. We also show that certain socio-demographic characteristics as

well other factors, such as conspiracy beliefs, worries about COVID-19 and its effects, matter greatly for the intent to get vaccinated.

1.1 Background and hypotheses

1.1.1 Lithuanian context

In Lithuania, the first case of COVID-19 was confirmed on 28 February 2020. An immediate rapid rise in new COVID-19 cases was prevented, but in autumn of 2020 the pandemic situation took a turn for the worse and deteriorated further into the winter. Toward the end of 2020, Lithuania recorded more than 1,400 new daily COVID-19 cases per 1 million people—one of the worst results in the world at that time. In January 2021, when data for this study was collected, the curve of new infections was already going down, but the pandemic situation remained grim as the number of new cases, hospitalizations, and deaths from COVID-19 was still very high at that time (Ritchie, Mathieu, Rodés-Guirao, et al., 2020).

Around the same time, the authorities started to administer vaccinations against COVID-19. The first doses of the approved COVID-19 vaccine (Comirnaty by Pfizer- BioNtech) were administered on 27 December 2020. At first, the limited vaccine resources were targeted toward key workers and clinically vulnerable groups. The vaccines were made available to the general public at the end of May 2021.

But despite the availability of vaccines, the pace of vaccinations remained sluggish throughout 2021. In the beginning of August 2021, before the restrictions on the unvaccinated were introduced, the vaccination rates in Lithuania stood below that of the European Union (EU) average (Ritchie, Mathieu, Rodés-Guirao, et al., 2020). Regarding age groups, Lithuania stood out for relatively low vaccination rates among its elderly population, which is not surprising as Lithuania is one of the EU countries with the highest COVID-19 vaccine skepticism in people over 50 (Bergmann et al., 2021)

Overall, the COVID-19 pandemic has cost many lives in Lithuania. The number of excess deaths, calculated as the deaths above the usual number of deaths that would have been observed under normal conditions, in Lithuania has been one of the largest globally. As of 12 June 2022, the estimated excess deaths per 100,000 persons stood at 745 in Lithuania, compared to 130 in Sweden (The Economist, 2020)—one of the high-trust countries that has largely refrained from stringent pandemic containment measures and has vaccinated most of its elderly population (Ritchie, Mathieu, Rodés-Guirao, et al., 2020; Hale et al., 2021).

1.1.2 Hypotheses

Many authors have examined individuals' voluntary vaccination decisions, which are often studied from the perspective of public goods theory (Lim and Zhang, 2020; Fu et al., 2021). If vaccinations can stop the spread of infections, then such a containment of a virus is a public good, which requires people's cooperation in terms of them getting vaccinated. However, individuals personally have an incentive to free-ride and not incur the individual costs of vaccinations, such as safety concerns, potential side effects, costs of travel, and other monetary and non-monetary costs (Siciliani et al., 2020), while benefiting from the contained spread of the virus when a considerable number of people is vaccinated. In this way, free-riding can lead to a suboptimal collective outcome (Bauch et al., 2003).

The social capital theory suggests that social capital, that is, certain shared values, norms, bonds, and trust among people, can help societies overcome the free-rider problem and facilitate cooperation in the pursuit of socially valuable activities (Bourdieu, 1986; Coleman, 1988; Putnam, 2000; Ostrom and Ahn, 2009; Guiso et al., 2011). When it comes to general trust in other people, that is, generalized trust, and, particularly, trust in strangers, more trusting individuals are more willing to cooperate and contribute to the public good, because they view other people as trustworthy and do not think they will be cheated (Guiso et al., 2011). In the context of vaccinations, this could mean that if people trust others, they are more willing to get vaccinated, because they do not think that others will free-ride and refuse vaccinations needed to stop the spread of the virus.

But empirical evidence on the role of social capital in shaping health behavior is somewhat conflicting. Some authors show that social capital (where trust is an important component) is associated with increased voluntary compliance to non-pharmaceutical interventions, including social distancing during the COVID-19 pandemic (Borgonovi and Andrieu, 2020; Barrios et al., 2021; Brodeur et al., 2021; Durante et al., 2021), as well as improved health outcomes, that is, fewer COVID-19 cases and fewer excess deaths per capita (Bartscher et al., 2021). Some empirical studies also find a positive association between generalized trust and vaccination willingness (Rönnerstrand, 2013, 2016; Algan et al., 2021). However, some studies on health behavior find the opposite and do not confirm the theoretical considerations of the social capital theory. For example, Jennings et al. (2021) show evidence of no significant relationship between generalized trust and vaccination intentions during the COVID-19 pandemic. Deopa and Fortunato (2021) and Doganoglu and Ozdenoren (2020) find a negative effect of generalized trust on social

distancing behavior during the COVID-19 pandemic, arguing that when people trust others, they may believe that other people are sticking to restrictions and feel that it is safe to go out. However, despite this mixed empirical evidence, we base our prediction on the social capital theory. Hence, we hypothesize that: **Hypothesis 1.** Trust in strangers predicts higher vaccination intentions (H1).

Findings from the literature have shown that vaccinations can also depend on trust in various institutions and systems that produce and deliver vaccines as well as decide on their need (Larson, 2018). In particular, this includes trust in pharmaceutical companies and science that develop the vaccines and ensure their safety and efficacy, trust in the healthcare system that administers vaccinations, and trust in policy-makers, mostly the government, that decide on the needed vaccine and establish the legal and regulatory framework for vaccinations (Larson, 2018; Sturgis et al., 2021).

From the theoretical point of view, information asymmetry about the vaccine between individuals—less informed party—and institutions involved in the vaccination process—more informed party—makes trust in such institutions play an important role for the willingness to get vaccinated (Larson, 2018; Sturgis et al, 2021). Trust works as a heuristic shortcut to making a judgement by an individual with incomplete information about the risks and the benefits of vaccination, in particular, those related to a vaccine's safety and effectiveness, as well as its importance (Midden and Huijts, 2009; Cummings, 2014; Sturgis et al., 2021). When individuals trust the institutions involved in the vaccination process, they believe that their representatives have the required competence and expertise, they have individuals' best interests at heart and adhere to the principles of integrity (Larson et al., 2018; Wynen, 2022).

Several empirical studies have confirmed the above theoretical consideration by providing evidence that there is a positive association between institutional trust and attitudes toward vaccination. For example, Jelnov and Jelnov (2022) show that trust in the government leads to higher voluntary vaccination levels due to lower probability of a transparent and accountable government to promote an unsafe low-quality vaccine. Other authors have also found a positive association between trust in the government and willingness to get vaccinated (Algan et al., 2021; Jennings et al., 2021; Khan et al., 2021; Lazarus et al., 2021; Van Oost et al., 2022; Wynen et al., 2022). Similarly, trust in science or scientists (Algan et al., 2021; Allington et al., 2021; Jennings et al., 2021; Sturgis et al., 2021; Wynen et al., 2022), in the healthcare system or its workers (Rönnerstrand, 2013; Allington et al., 2021),

and in pharmaceutical companies (Kreps et al., 2020; Bass et al., 2022) have been found to be positively related with vaccination intentions. Based on this literature, in our study, we raise the following hypotheses: **Hypotheses 2-5.** Trust in the government (H2)/ healthcare system (H3)/ science (H4)/ pharmaceutical companies (H5) predicts higher vaccination intentions.

Meanwhile, the media is an important source of information about vaccination. The social learning theory suggests that trust in such information sources mediates the effect of exposure to information about a vaccine on attitudes toward vaccination (Zimand-Sheiner et al., 2021). That is, when the media provides people with information related to the vaccine, for example, outlines the benefits of vaccinations, and people believe the media to be a credible source of information, this information can have a positive effect on vaccine willingness. Different authors have also shown empirically that individuals' attitudes toward vaccinations are positively related to trust in the media (Taha et al., 2013; Grüner and Krüger, 2021; Šiđanin et al., 2021; Zimand-Sheiner et al., 2021). Based on this research, we will test whether: **Hypothesis 6.** Trust in the media predicts higher vaccination intentions (H6).

1.2 Data and methods

1.2.1 Survey

We employed a data set from a representative incentivized online panel survey conducted on 13–20 January 2021. We hired the company "Norstat" to implement the survey using its online access panel, that is, a group of registered internet users who have agreed to take part in various surveys. For participating in surveys, "Norstat" panel members are rewarded with virtual coins that could be exchanged into gift cards, coupons, or donated to a charity. The database of "Norstat" panel members was collected by the company by conducting member recruitment campaigns and representative surveys of the general population. The company sends individual invitations to potential panel members asking them to join the panel and individuals can then either accept or reject the invitations. The invitation-based system allows the company to ensure a diverse pool of individuals available for nationally representative surveys. Our survey participants were selected from the panel randomly according to the representativeness parameters, including age groups, gender, districts, and size of settlement (urban or rural). Invitations to participate in our survey were sent to potential participants by an automated system via email, which included a link to our questionnaire. The process of sending invitations continued until all sampling quotas for the target groups

were fulfilled. The sampling quotas were set according to the population distribution data provided by the State Data Agency of Lithuania.

The informed written consent of participants was obtained by "Norstat" before individuals signed up to the panel. Individuals were informed that all their responses obtained in a survey will be anonymized. They were also told that their participation in a survey is entirely voluntary, and they are free to discontinue their participation at any time. To become members of the panel, individuals had to provide their consent by checking the "Yes, I agree to terms and conditions" box. On the first page of our questionnaire, we provided a description of our survey and its intent, the contact details of the research team, and asked the participants to contact us if they had any questions about the study. We also reminded the participants that their responses to the questionnaire will be anonymized. The survey would begin after the participant pressed "continue".

In the survey, we collected information on respondents' self-reported vaccination intentions during the COVID-19 pandemic, self-reported trust in different institutions, trust in the media, and trust in strangers. We also collected data on various beliefs and attitudes, as well as personal and demographic characteristics.

In total, 1,000 people aged 18 years and older answered the survey. It took an average of 11 minutes to answer the survey. Twenty-seven respondents who answered the survey in less than 4 minutes were dropped from the analysis. The full questionnaire can be found in Appendix A.

1.2.2 Variables

The main outcome variable of this study is the intention to get vaccinated. In the survey, we asked the following question about the respondent's vaccination intent: "How much do you agree with this statement: I will get vaccinated as soon as a free COVID-19 vaccine becomes available to me." The respondents answered this question using a Likert scale ranging from 1 to 7, where 1 = "Strongly disagree" and 7 = "Strongly agree." Answers to this question were used to construct the dependent variable vaccination.

Our main explanatory variables are different types of trust, namely trust in strangers, government authorities, healthcare, science, the media, and pharmaceutical companies. To measure trust in strangers we ask respondents: "In general, how much do you trust people you do not know personally?" The question is answered on a 7-point scale ranging from 1 = "Do not trust at all" to 7 = "Trust completely." Our constructed question is similar to the trust in

strangers question used in the World Values Survey (see Guiso et al., 2011). Answers to this question measure variable trust in strangers.

To evaluate institutional trust and trust in the media, we ask respondents direct questions about their trust in specific institutions and the media: "In general, how much do you trust the country's government authorities/ the healthcare system/ science/ pharmaceutical companies/ the media?" The questions are again answered on a 7-point Likert scale. Answers to these questions measure the explanatory variables trust in government, trust in healthcare, trust in science, trust in pharma, and trust in media, respectively.

We also ask questions that could help control for other factors related to vaccination intentions. We want to control for individuals' and their relatives' health status, as poor health may increase COVID-19 risks and encourage vaccination. On the other hand, poor health status may be related to higher perceived risk of getting major side effects from vaccinations and may reduce willingness to get vaccinated. Thus, we ask respondents to answer questions about their personal (personal health) as well as the physical health of their close family members (family health). Regarding health, we also control for personal experience with COVID-19, that is, we ask whether individuals have been diagnosed with COVID-19 (diagnosed with covid) or they think they have been sick with COVID-19 (think sick with covid). People with such a disease history might have immunity against COVID-19, which may reduce the need for immediate vaccination against the disease.

Certain beliefs may also affect vaccination intentions. One of such factors is a belief in conspiracies, as previous studies have found that it is associated with reduced willingness to be vaccinated (Allington et al., 2021; Juanchich et al., 2021; Freeman et al., 2022; Goodwin et al., 2022). We ask individuals, how much they agree with the statement, saying that the 5G mobile technology is directly related to the COVID-19 pandemic. Answers to this question are used to construct the variable conspiracy beliefs.

We also collect information on respondents' risk preferences. Findings in the literature have shown that risk aversion is mostly negatively associated with risky behavior in the health domain (Anderson and Mellor, 2008; Dohmen et al., 2011; Szrek et al., 2012). The variable risk preferences is constructed using responses to a question: "In general, I am willing to take risks (Dohmen et al., 2011)."

Data on COVID-19 related worries were also collected, such as self-reported worries of getting sick with COVID-19 (fear of covid) and a self-assessment of how the respondent's financial situation would be affected if the family's provider got sick with COVID-19 (finances if sick). These

constructed variables measure the perceived susceptibility and perceived severity of the illness, which are two of the key constructs of the Health Belief Model (Becker et al., 1974) often used to predict health behavior. According to the model, if people regard themselves as susceptible to a certain medical condition or if they believe the condition could have serious consequences for them, they will be more willing to take action to prevent that medical condition from appearing.

We also collect data on respondents' socio-demographic characteristics, including age, gender, income, remote work possibilities, employment status, place of residence, size of the settlement, marital status, household size, education, and nationality. We treat all independent variables, constructed from answers to Liker-type questions, as continuous indices. In Table A1, provided in Appendix A, we define our dependent and independent variables, as well as the control variables.

1.2.3 Empirical specification

Our empirical strategy, which aims to explain the role of trust in vaccination intentions, proceeds as follows. First, we conduct a short descriptive analysis of the data to have a better understanding of the sample, the outcome variable, the main independent variables, and the strength of the relationships among the variables. Second, given the ordered nature of the responses to the vaccination question, we estimate an ordered logistic regression model using vaccination as the outcome variable.

We use three different specifications of the ordered logistic regression model. First, we start with regressing vaccination on every trust variable individually. This allows us to better understand the relationships between each trust variable and vaccination intent. We then regress vaccination on every trust variable (entered in separate regressions) and all control variables to control for socio-demographic characteristics of respondents, their health status, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of COVID-19, and risk preferences. This specification provides a further check on the relationship between trust and vaccination intent and facilitates the evaluation of potential bias stemming from omitting other significant trust variables from the model. Finally, to test our hypotheses, we estimate a combined ordered logistic regression model, which includes all trust variables, and all control variables in a single regression. This third specification is our baseline model.

1.3 Results and discussion

1.3.1 Descriptive analysis

Twenty-seven respondents (out of 1,000) who answered the survey in less than 4 minutes were dropped from our analysis. This left us with the sample size of 973 observations. Around a half of these survey participants were women (55.4%) and almost half (48.2%) were aged 18-49. Lithuanians represented more than nine in ten (92.8%) of respondents. Seven in ten respondents had higher education (70.3%), were married or lived with a partner (70.9%), had household income lower than 2,000 euros (67.8%), and lived in a city or a town (67%). Almost one in three respondents lived in one of the three largest Lithuanian cities, that is, Vilnius (18%), Kaunas (9.5%), and Klaipeda (3.4%). Around one-fifth of participants had some personal experience with COVID-19, that is, they were either diagnosed with COVID-19 (7.3%) or they thought they have had COVID-19, but it has not been diagnosed (14.5%). Table A2 in Appendix A provides the additional characteristics of our data sample.

Most of respondents expressed a willingness to get vaccinated against COVID-19 (see Fig 1.1). In total, around 69% of respondents said that they strongly agree, agree, or agree somewhat to receive a vaccine as soon as it becomes available. Almost 19% of respondents expressed negative attitudes toward COVID-19 vaccines, that is, they answered that they strongly disagree, disagree, or disagree somewhat to get vaccinated. Out of these with negative attitudes, more than a half (10.6% of all respondents) disagreed strongly with getting vaccinated. Around 12% of respondents said they neither agree, nor disagree to get vaccinated and thus could be considered as undecided. The actual vaccination rate closely aligns with the self-reported intentions. By the end of 2021, one year after COVID-19 vaccinations began in the country, about 67% of people in Lithuania were fully vaccinated, meaning they had completed the initial vaccination protocol (Mathieu et al., 2021). In 2022, this number increased slightly to 68%.

The intent to get vaccinated varies with the socio-demographic characteristics of respondents. One of such characteristics is age. Older participants of the survey were less skeptical about the vaccine and were more willing to get vaccinated than younger participants. Among those older than 60 years, 83% expressed an intent to get vaccinated, that is, they answered that they strongly agree, agree or agree somewhat to get vaccinated once the vaccine becomes available. Among those aged 40-59 years this number stood at 66% and at 58% among those younger than 39 years.

In terms of gender, men had somewhat stronger positive views toward getting the vaccine than women—64% of men said that they agree or agree strongly to get vaccinated, while for women this number stood at 62%. Also, more women than men had strong negative attitudes toward the vaccine—16.5% of women disagreed strongly or disagreed with getting vaccinated, while among men 14.5% did. Among those respondents who were married or lived with a partner, somewhat more (70.3%) strongly agreed, agreed or agreed somewhat to get vaccinated as compared to those who were single or divorced (66%). Also, vaccination intent varied with household income. 79.4% of respondents with after-tax household income above 3,000 euros strongly agreed, agreed or agreed somewhat to get vaccinated, while among those with income lower than 500 euros only 60.3% did.

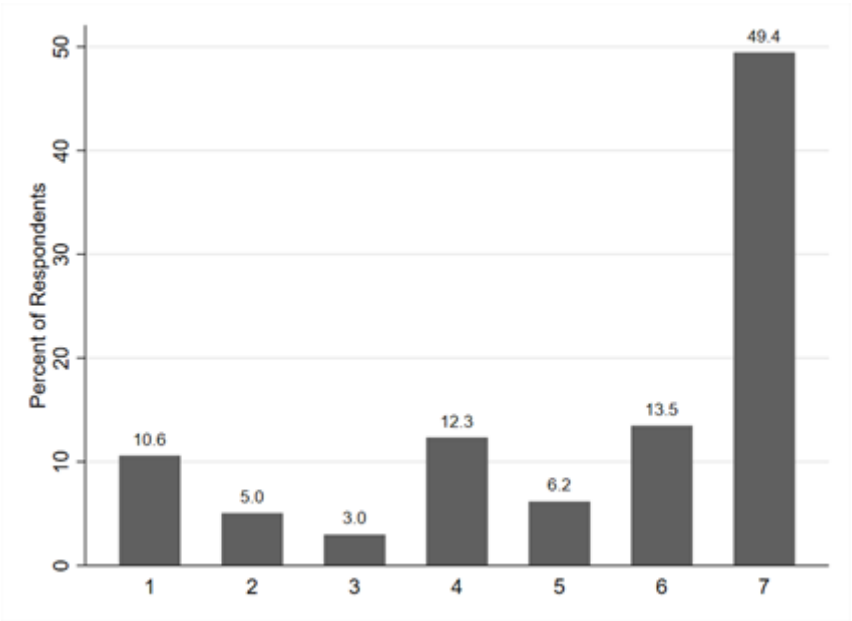


Fig 1.1. Distribution of responses about vaccination intent. We asked respondents, how much they agree to the statement: "I will get vaccinated as soon as a free COVID-19 vaccine becomes available to me." Possible answers are 1 = "Strongly disagree," 2 = "Disagree," 3 = "Somewhat disagree," 4 = "Neither agree nor disagree," 5 = "Somewhat agree," 6 = "Agree," 7 = "Strongly agree." This figure shows the distribution of the responses to this statement.

Regarding trust, respondents tended to trust institutions more than strangers. Around 23% expressed trust toward strangers, that is, answered that they trust completely, trust, or trust somewhat people they do not know personally (see Fig 1.2). For institutional trust, more than 47% of respondents

answered that they trust government authorities, 48% trusted pharmaceutical companies, almost 55% trusted the healthcare system, and more than 84% of respondents trusted science. Only 38% of respondents expressed trust toward the media (see Fig 1.2). Here we consider that a person trusts an institution if he or she answered "trust completely," "trust," or "trust somewhat" to the trust questions in the survey. Table A3 in Appendix A provides the summary statistics of all variables used in the analysis.

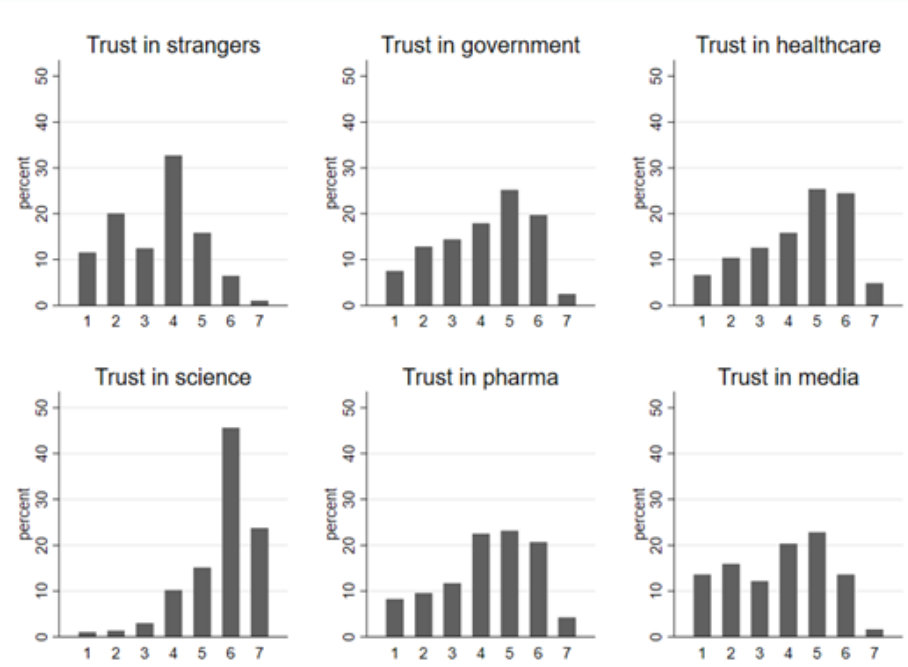


Fig 1.2. Distribution of responses to trust questions. We ask respondents, how much they trust strangers, government authorities, the healthcare system, science, pharmaceutical companies, and the media. Possible answers are 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely." This figure shows the distributions of the responses to these questions.

Table A4 in Appendix A provides Spearman's correlation coefficients and their p-values for the outcome variable vaccination and all trust variables. It is evident that the relationship between vaccination intentions and the different trust variables is not equally strong. Correlations between vaccination intentions and different institutional trust variables, representing trust in the government ($r_s = 0.426$, $p < 0.001$), trust in healthcare ($r_s = 0.387$, $p < 0.001$), trust in science ($r_s = 0.425$, $p < 0.001$), trust in pharmaceutical companies (r_s

= 0.409, $p < 0.001$) and trust in the media ($r_s = 0.357$, $p < 0.001$), are statistically significant and positive. Correlation between trust in strangers and vaccination intentions ($r_s = 0.073$, $p = 0.023$) is rather weak, but still positive and statistically significant at a 5% significance level.

A Spearman's correlation was also run to assess the relationship among different trust variables. We find positive and statistically significant correlations among the trust variables, in particular, the institutional trust variables. For example, the correlation coefficient between trust in the government and trust in healthcare is 0.752 ($p < 0.001$) and between trust in the government and trust in the media is 0.558 ($p < 0.001$).

1.3.2 Logistic regression analysis

Main results

In this subsection, we present and discuss the main results from estimating the ordered logistic regression models as described in subsection "Empirical specification." From each model we report the average marginal effects of trust variables.

First, we present the results from the simplest regression specification, which regresses vaccination on every trust variable in separate regressions without the control variables. As expected, we find the positive association between all trust variables and vaccination intentions. The logit coefficients are statistically significant at least at a 5% significance level (see Table A5 in Appendix A). The average marginal effects of all trust variables are also statistically significant at least at a 5% significance level for all categories of responses to the vaccination question (see columns 1.1-1.6 in Table 1.1). The average marginal effects of institutional trust variables are larger in numerical terms than those of trust in strangers. Overall, the average marginal effects of trust in strangers are relatively small in numerical terms. On average, an increase in trust in strangers by 1 point is associated with a 2.2%-point greater probability of "agreeing strongly" to getting vaccinated. For trust in the government, the healthcare system, the pharmaceutical companies and the media, an increase in trust by 1 point is associated with around a 10-12%-point greater probability of reporting the highest vaccination intentions. Trust in science demonstrates the largest average marginal effects observed for the highest vaccination intentions (see column 1.4 in Table 1.1).

Table 1.1. Ordered logistic regression model with single trust variable and no controls

Model	1.1	1.2	1.3	1.4	1.5	1.6
Vaccination	Trust in strangers	Trust in government	Trust in healthcare	Trust in science	Trust in pharma	Trust in media
Disagree strongly	-0.009**	-0.051***	-0.044***	-0.058***	-0.048***	-0.040***
	(0.004)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)
Disagree	-0.003**	-0.018***	-0.016***	-0.021***	-0.018***	-0.015***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
Disagree somewhat	-0.002**	-0.009***	-0.008***	-0.011***	-0.009***	-0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Neither agree, nor	-0.006**	-0.027***	-0.025***	-0.037***	-0.027***	-0.022***
disagree	(0.003)	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)
Agree somewhat	-0.002**	-0.008***	-0.008***	-0.013***	-0.008***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Agree	-0.001**	-0.007***	-0.007***	-0.013***	-0.007***	-0.005***
	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.001)
Agree strongly	0.022**	0.120***	0.108***	0.153***	0.117***	0.096***
	(0.010)	(0.006)	(0.007)	(0.010)	(0.006)	(0.007)
Obs.	973	973	973	973	973	973
Pseudo R-sq.	0.002	0.068	0.056	0.059	0.065	0.045
LR chi-sq. (1)	4.82**	204.74***	167.12***	176.73***	194.44***	134.15***

Note: The table reports the average marginal effects obtained by estimating the ordered logit regression model with a single trust variable and no controls. The dependent variable is a 7-category variable *vaccination*. The first column of the table shows the responses to the vaccination question. Columns 1.1-1.6 show the results for estimating the different variations of the model where only the trust variable included in the model is changed. Standard errors are presented in parentheses below the average marginal effects. We also report the McFadden's pseudo R-squared (Pseudo R-sq.) and the Likelihood ratio chi-square statistic (LR chi-sq.). The Likelihood ratio test tests that at least one of the predictors' regression coefficients is not equal to zero in the model. The number in the parenthesis next to LR chi-sq. indicates the degrees of freedom of the chi-square distribution used to test the LR chi-square statistic and is defined by the number of predictors in the model. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Next, we present the results from the regression models that regress vaccination intentions on every of the six trust variables separately and all control variables (socio-demographic characteristics of respondents, their health, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of COVID-19, and risk preferences). We find that when we control for potential covariates, the logit coefficient of trust in strangers becomes statistically insignificant at any conventional significance level (see Table A6 in Appendix A). This is also reflected in the average marginal effects of trust in strangers, which are also statistically insignificant for all categories of responses to the vaccination question (see column 2.1 in Table 1.2). But the logit coefficients of the remaining trust variables, that is, trust in the government, trust in healthcare, trust in science, trust in pharma, and trust in the media, remain statistically significant at least at the 1% significance level (see Table A6 in Appendix A). The average marginal effects of these trust variables also keep their signs and remain statistically significant at the 1% level for all categories of vaccination variables (see columns 2.2-2.6 in Table 1.2). The association between vaccination intentions and the institutional trust variables remains positive. On average, an increase in trust in different institutions involved in the vaccination process by 1 point is associated with a 7.4-9.4%-point greater probability of agreeing strongly to getting vaccinated. Regarding the media, as trust in it goes up by 1 point, the probability of reporting highest vaccination intentions increases by 5.6%-points.

However, the above-reported results from the first two regression models that include each trust variable separately could be misleading. That is, the estimated marginal effects of the trust variables may be biased upward, as the individually included trust variables might be capturing the effects of other trust variables that are omitted from the model. For this reason, the third regression specification, which includes all trust variables and controls, is estimated. This is our baseline model.

Table 1.2. Ordered logistic regression model with single trust variable and all controls

Model	2.1	2.2	2.3	2.4	2.5	2.6
Vaccination	Trust in strangers	Trust in government	Trust in healthcare	Trust in science	Trust in pharma	Trust in media
Disagree strongly	-0.005	-0.034***	-0.029***	-0.038***	-0.034***	-0.023***
	(0.004)	(0.004)	(0.003)	(0.005)	(0.004)	(0.003)
Disagree	-0.002	-0.012***	-0.011***	-0.013***	-0.012***	-0.008***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Disagree somewhat	-0.001	-0.006***	-0.006***	-0.007***	-0.006***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Neither agree, nor	-0.003	-0.019***	-0.017***	-0.022***	-0.020***	-0.013***
disagree	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Agree somewhat	-0.001	-0.006***	-0.006***	-0.007***	-0.006***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Agree	-0.001	-0.006***	-0.006***	-0.008***	-0.006***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Agree strongly	0.012	0.083***	0.074***	0.094***	0.085***	0.056***
	(0.009)	(0.007)	(0.007)	(0.010)	(0.007)	(0.007)
Obs.	973	973	973	973	973	973
Pseudo R-sq.	0.124	0.160	0.155	0.148	0.164	0.141
LR chi-sq.(31)	372.01***	480.18***	464.23***	444.12***	493.01***	423.86***

Note: The table reports the average marginal effects obtained by estimating the ordered logit regression model with a single trust variable and all controls. We control for respondents' socio-demographic characteristics, health, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of COVID-19, and risk preferences. The dependent variable is a 7-category variable *vaccination*. The first column of the table shows the responses to the vaccination question. Columns 2.1-2.6 show the results for estimating the different variations of the model where only the trust variable included in the model is changed. Standard errors are presented in parentheses below the average marginal effects. We also report the McFadden's pseudo R-squared (Pseudo R-sq.) and the Likelihood ratio chi-square statistic (LR chi-sq.). The Likelihood ratio test tests that at least one of the predictors' regression coefficients is not equal to zero in the model. The number in the parenthesis next to LR chi-sq. indicates the degrees of freedom of the chi-square distribution used to test the LR chi-square statistic and is defined by the number of predictors in the model.*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Estimating the baseline model yields logit coefficients that are statistically significant at the 1% significance level for trust in the government, trust in science, and trust in pharmaceutical companies (see Table A7 in Appendix A). The average marginal effects of these trust variables also remain statistically significant at the 1% level for all categories of vaccination variables. As trust in these institutions rises, the probability that the individuals report higher vaccination intentions increases (see Table 1.3). On average, an increase in trust in the government, science, and pharmaceutical companies by 1 point is associated with a 3.7, 3.9, and 4.7%-point greater probability of reporting the highest vaccination intentions, that is, "agreeing strongly" to getting vaccinated, respectively. In other words, higher trust in these institutions reduces the probability of disagreeing, being undecided, and agreeing less than strongly to getting vaccinated. These findings are in line with previous results in the literature (Algan et al., 2021; Khan et al., 2021; Lazarus et al., 2021; Thunström et al., 2021) and provide evidence in favor of hypotheses H2, H4, and H5. [1]

Although some authors found that trust in healthcare (Rönnerstrand, 2013; Allington et al., 2021) and trust in the media (Taha et al., 2013; Grüner and Krüger, 2021; Šiđanin et al., 2021; Zimand-Sheiner et al., 2021) were associated with higher vaccination intentions, in our case, these effects are potentially reduced by the inclusion of other trust variables, in particular, trust in the government and trust in science. The estimates of our baseline model show that the logit coefficients of trust in healthcare (H3) and trust in the media (H6) are statistically insignificant at any conventional level (see Table A7 in Appendix A). The average marginal effects of these trust variables are also statistically insignificant for all categories of responses to the vaccination question (see Table 1.3).

[1] The results from estimating the baseline model remain robust even when using the full sample of 1,000 participants, including the 27 previously dropped observations.

Table 1.3. Ordered logistic regression model with all trust variables and controls

	Model 3 (baseline)					
Vaccination	Trust in strangers	Trust in government	Trust in healthcare	Trust in science	Trust in pharma	Trust in media
Disagree strongly	0.007**	-0.015***	-0.004	-0.016***	-0.019***	-0.002
	(0.003)	(0.005)	(0.004)	(0.005)	(0.004)	(0.003)
Disagree	0.002*	-0.005***	-0.002	-0.006***	-0.007***	-0.001
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Disagree somewhat	0.001*	-0.003***	-0.001	-0.003***	-0.003***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Neither agree, nor disagree	0.004*	-0.008***	-0.002	-0.009***	-0.011***	-0.001
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Agree somewhat	0.001*	-0.003***	-0.001	-0.003***	-0.004***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Agree	0.001*	-0.003***	-0.001	-0.003***	-0.004***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Agree strongly	-0.017**	0.037***	0.011	0.039***	0.047***	0.005
	(0.008)	(0.012)	(0.011)	(0.011)	(0.009)	(0.009)
Obs.						973
Pseudo R-sq.						0.180
LR chi-sq. (36)						540.25***

Note: The table reports the average marginal effects obtained by estimating the ordered logit regression model with all trust variables and all controls. We control for respondents' socio-demographic characteristics, health, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of COVID-19, and risk preferences. The dependent variable is a 7-category variable *vaccination*. The first column of the table shows the responses to the vaccination question. Standard errors are presented in parentheses below the average marginal effects. We also report the McFadden's pseudo R-squared (Pseudo R-sq.) and the Likelihood ratio chi-square statistic (LR chi-sq.). The Likelihood ratio test tests that at least one of the predictors' regression coefficients is not equal to zero in the model. The number in the parenthesis next to LR chi-sq. indicates the degrees of freedom of the chi-square distribution used to test the LR chi-square statistic and is defined by the number of predictors in the model. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Furthermore, we find that when we estimate the baseline model, the logit coefficient of trust in strangers becomes statistically significant at the 5% significance level (see Table A7 in Appendix A). We also find that higher trust in strangers is associated with a lower probability of having high vaccination intentions (see the second column in Table 1.3). Thus, we do not find evidence in favor of H1. This result contrasts with the findings of some authors (Algan et al., 2021; Rönnerstrand, 2013, 2016), who show that generalized trust is positively associated with the willingness to get vaccinated. One of the potential explanations of our result could be related to the fact that in this paper we focus on trust in strangers, which is a somewhat different concept than the broader concept of generalized trust analyzed in most other similar studies. Differences in the timing of surveys could also play a role—our survey was conducted quite early in the vaccination process, possibly before most people had internalized the social benefits of vaccinations. Another potential explanation for the negative association between trust in strangers and vaccinations is that when people trust others, they may believe that other people will protect against the disease, for example, by adhering to specialists' recommendations about safe health behavior during the pandemic and/ or by getting vaccinated, thus, they may feel safer about not rushing to get their vaccine. A few previous studies analyzing the role of generalized trust in explaining social distancing behavior during the COVID-19 pandemic have also found similar results (Doganoglu and Ozdenoren, 2020; Deopa and Fortunato, 2021). However, our estimated average marginal effects of trust in strangers are relatively small in numerical terms and are statistically significant at the 5% significance level only for the highest and lowest vaccination intentions (see the second column in Table 1.3), meaning that one should be cautious in drawing strong conclusions from this finding.

To evaluate if the baseline model (see Table 1.3) fits the data better than the reduced form models with single trust variables and all controls (see Table 1.2), we conducted likelihood ratio tests. The results show that adding all trust variables as predictor variables to a model, results in a statistically significant improvement in the fit of the model (see Table A8 in Appendix A). Different diagnostic tests were also conducted for the baseline model. The tests did not detect model misspecification errors or problems of severe multicollinearity.

As a robustness check, we estimate a multiple linear regression model with the same dependent and explanatory variables as in our baseline specification. The results from this model are largely in line with those obtained by estimating the baseline ordered logistic regression model as we find that trust in the government, science, and pharmaceutical companies is

positively associated with vaccination intentions, while the coefficients on trust in healthcare and the media are statistically insignificant (see Table A9 in Appendix A). The coefficient on trust in strangers now is found to be statistically insignificant at any conventional significance level.

Additional results

In this subsection, we report and discuss the additional findings obtained by estimating the baseline ordered logistic regression model. The control variables that we include in this model provide interesting insights about how individual characteristics, beliefs, and attitudes are associated with vaccination intentions. In Table A7 in Appendix A we report the logit coefficients of all control variables that are included in our baseline model. In Appendix A we plot the average marginal effects of those control variables that have statistically significant (at least at a 5% significance level) logit coefficients.

We find that certain socio-demographic characteristics are significant predictors of vaccination intentions. The results demonstrate that, compared to men, women are less likely to have high intentions to get vaccinated. This finding is consistent with those by other authors (Neumann-Böhme et al., 2020; Khan et al., 2021; Paul et al., 2021). Women could be more worried about the side effects of vaccines than men (Neumann-Böhme et al., 2020) or there could be differences in access to information about the vaccines between the two genders (Khan et al., 2021), which could lead to differences in their vaccination intentions.

Furthermore, we show that people from larger households are less likely to be in favor of vaccinations, which is somewhat related to the finding by Paul et al. (2021), who showed that people living with children are less willing to get vaccinated. In addition, individuals who report having higher income as well as those who prefer not to answer the question about their income are more likely to have high vaccination intentions. Some authors have also found a positive association between income and vaccinations (Lazarus et al., 2021; Paul et al., 2021). We also find that individuals from Klaipeda—the third largest Lithuanian city and a major seaport with a relatively large Russian-speaking population—are less likely to be in favor of getting vaccinated.

When it comes to health, we find that people who think they were sick with COVID-19 but did not test for it are less likely to be willing to get vaccinated. Such people may have experienced mild COVID-19 symptoms, or they falsely believe that they have been sick with COVID-19, which makes them underestimate the threat of the disease or think that they are immune to

contracting COVID-19. However, having been diagnosed with COVID-19 does not predict vaccination intentions.

We also find that beliefs in false information play a significant role in predicting vaccination intentions, which is in line with the findings of other studies (Romer and Jamieson, 2020; Loomba et al., 2021; Martinez-Bravo and Stegmann, 2022). Individuals who tend to believe in conspiracies, such as that 5G mobile technology is linked to the COVID-19 pandemic, are less likely to be in favor of vaccinating against COVID-19. Conspiracy beliefs can affect vaccination intentions negatively by reducing the perception of the threat of the virus and/ or by increasing the worries about the safety and the efficacy of vaccines (Jolley and Douglas, 2017).

Finally, as expected, the fear of getting sick with COVID-19 is associated with a higher probability of being in favor of vaccines. Similarly, if people think their finances would be affected badly in the case their main family provider got sick with COVID-19 and could not work for some time, they are more likely to agree to take the vaccine.

1.4 Concluding remarks

Our survey data show that the intent to get vaccinated is positively associated with trust in the government, science, and pharmaceutical companies. If such institutions are thought of as not being trustworthy, for example, because they are considered incompetent or corrupt, individuals are less likely to be in favor of getting vaccinated. Inherent mistrust in some of these institutions in Lithuania and some other countries could be a crucial factor contributing to the relatively low vaccination rate observed in 2021.

Although trust in strangers is an essential element of social capital (Guiso et al., 2011), which should help societies prevent free-riding behavior, we find that it does not play a crucial role in predicting vaccination intent. One possible explanation for this is that some individuals, especially at the start of the vaccination process, may not view vaccinations as a way of contributing to the public good of containing the pandemic, that is, they do not yet internalize the social benefits of vaccinations against COVID-19. This could change at a later stage of the vaccination process as vaccinating against the virus is portrayed as a civic behavior intended to protect not only the person that is receiving the vaccine but also others. Thus, trust in strangers could still affect actual vaccination behavior as the vaccination campaign progresses. This conjecture is something future research could explore.

Our findings imply that societies that have more trusting relationships between individuals and key institutions, such as the government, science, and

business, may contain the spread of the virus more rapidly and at a lower cost than societies where people trust institutions less. These institutions should recognize the role that trusting them plays in containing the COVID-19 pandemic and should take steps to build trust. However, building trust is unlikely to be easy or fast, as the COVID-19 pandemic itself, particularly if it is thought of as being mishandled, could have damaged trust (Aassve et al., 2021; Algan et al., 2021; Eichengreen et al., 2021, 2023). If trust does not improve, this could raise challenges for the management of health emergencies in the future as well as other crises that require collective action, such as the climate crisis. However, these questions are outside the scope of this study and are left for future research.

Apart from trust, our study also examined additional predictors of vaccination intentions. We find that women, individuals from larger households, and those who think they have been sick with COVID-19 are less likely to express willingness to receive a vaccine. We also show that misinformation plays a significant role in predicting vaccination intentions: individuals who tend to believe in conspiracies are less likely to agree to get vaccinated. Furthermore, higher expected personal financial costs of getting sick with COVID-19, higher income, and fear of getting sick with COVID-19 are associated with higher willingness to get vaccinated. These findings shed more light on the factors that are significant in predicting vaccinations. Targeting the vaccination campaign toward specific demographic groups of people who are less willing to get vaccinated, providing them with accurate information, and addressing their concerns could help increase vaccinations and contain the pandemic.

This study has some limitations. First, in the regressions, we do not control for the individuals' concerns about the safety, side-effects, and effectiveness of the vaccine against COVID-19, which are factors that have a significant effect on vaccination decisions. Thus, the estimates of the trust variables could partly capture the effects of these concerns. At the time of our survey there were only few personal experiences from the use of vaccines, thus some people could have had significant concerns about the safety of vaccines and their potential side effects. Second, the study employs a broad survey question to measure trust in media. However, the relationship between trust in media and vaccination intentions may vary depending on the specific type of media in question. Future research could delve deeper into this issue by using more granular measures of trust in media. Third, the study investigates self-reported trust and vaccination intentions, which may suffer from the social desirability bias and be prone to other concerns. The social

desirability bias implies that survey respondents may overreport socially desirable and/ or underreport socially undesirable behavior. In our case, to be viewed favorably by others, respondents may indicate that they are more trusting and/ or more willing to get vaccinated than they actually are. But it is likely that this bias is not a very big concern here, as several studies have shown that the social desirability bias for self-reported health behaviors during the COVID pandemic, such as social distancing, is either very small (Jensen, 2020) or even non-existent (Larsen et al., 2020). In addition, some studies have found that self-reported interpersonal and institutional trust predicts experimental trust measures (Aksoy et al., 2018; Naef and Schupp, 2009; Murtin et al., 2018). However, there could be other factors than the social desirability bias that could lead to differences between vaccination intentions and the actual vaccine uptake, such as the temporal dynamics. Although in our study, many respondents expressed willingness to get vaccinated, which, according to Jensen et al. (2022), should predict a high uptake of COVID-19 vaccines, the observed vaccination process was relatively slow in Lithuania. It may be the case that some individuals had second thoughts about getting vaccinated when the time to receive their vaccine came. To address the social desirability bias as well as other concerns related to the potential gap between vaccine willingness and actual vaccine uptake, future studies could use experimental measures of trust (Berg et al., 1995; Murtin et al., 2018) and actual vaccination behavior. Fourth, the evidence provided in the study is suggestive and we cannot draw causal inferences from it.

2 MISPERCEIVED SOCIAL NORMS AND CLIMATE ACTION

Climate change represents one of the gravest threats facing humanity and ecosystems (IPCC, 2022). Urgent action, in the form of more ambitious climate policies such as carbon pricing, is imperative (Nordhaus, 2018; IPCC, 2022). However, promoting climate policy requires active public engagement, such as engaging in public discourse on climate issues, to pressure politicians to implement effective climate policies. Such public participation may be hindered if individuals consistently underestimate others' commitment to fighting climate change, ultimately reducing the pressure on policymakers to address the climate emergency. Due to the vocal expression of contrarian views by a minority of the population, individuals tend to systematically misperceive different pro-climate beliefs and behaviors among the public (Leviston et al., 2013; Sokoloski et al., 2018; Mildenberger and Tingley, 2019; Andre et al., 2024), a phenomenon known as "pluralistic ignorance" (Miller and McFarland, 1991). Similarly, misperceptions about climate policies are prevalent, with Sparkman et al. (2022) highlighting a 20–40% underestimation of support for climate policy in the US.

According to social norms theory, providing accurate information about prevailing norms in society can improve behavioral outcomes by aligning individuals' behavior with updated perceptions of norms (Perkins and Berkowitz, 1986; Berkowitz, 2003). Empirical research has confirmed this phenomenon in several domains, including female labor market participation (Bursztyn et al., 2020) and bullying within schools (Dillon and Lochman, 2022). Recently, the behavioral climate literature has increasingly become interested in using "pluralistic ignorance" and informational interventions to correct misperceptions (Geiger and Swim, 2016; Mindenberger and Tingley, 2019; Pompeo and Serdarevic, 2021; Andre et al., 2024; Vlasceanu et al., 2024). For example, Andre et al. (2024) showed that Americans vastly underestimate the true share of the population that tries to fight, and believe that Americans should try to fight, climate change. The authors found that correcting these misperceptions raised individual willingness to act against climate change, including donations to a climate organization, self-reported support for climate policies, and intentions for climate activism. However, the extent to which misperception-correcting interventions can impact climate action remains inconclusive. Some studies did not find evidence supporting that correcting these misperceptions with informational interventions affected behavioral measures of climate action, such as by Pompeo and Serdarevic (2021), which explored Republicans' misperceptions about prevailing beliefs

regarding the existence of climate change, or by Fang and Innocenti (2023), which examined misperceptions of Americans' support for carbon neutrality.

Although climate action that promotes climate policies matters greatly for actual policy implementation (Page and Shapiro, 1983; Burstein, 2003), research on "pluralistic ignorance" that is focused on such policy-centered climate action is limited. In addition, studies exploring policy-centered climate action, such as support for climate policies (Mindenberger and Tingley, 2019; Fang and Innocenti, 2023), tend to focus primarily on the private dimension of policy action—climate action largely invisible to others—leaving out observable, or public, climate action, such as individuals' participation in public discussion on climate policy. Geiger and Swim (2016) demonstrated that "pluralistic ignorance" can lead to "self-silencing," manifesting as a reduced willingness to discuss climate change with others. Thus, exploring the public dimension of climate action in this context is particularly important. Hence, we pose the question: Can informational interventions aimed at correcting misperceptions about climate policy support increase individuals' willingness to engage in both private and public policy-centered climate action?

To address this research question, we conducted an online experiment in the US, which is a significant contributor to global greenhouse gas emissions (Ritchie et al., 2020) and is characterized by considerable political polarization, particularly on climate change (Dunlap et al., 2016; Pew Research Center, 2020). Participants were randomly assigned to one of two experimental conditions: information treatment or control. In both conditions, participants' prior beliefs about Americans' support for carbon taxes were first elicited. Next, participants in the information treatment received information about the actual level of policy support in the US (Leiserowitz et al., 2023), while those in the control condition did not receive such information. Following this manipulation, participants made an incentivized donation decision by allocating $10 between themselves and the Citizen's Climate Lobby, an organization focused on advocating for climate policies, including carbon taxation. We then collected data on participants' minimum acceptable reward for attending a policy discussion meeting scheduled to take place within two weeks after the experiment. During this video meeting, each participant would be paired with another participant from the same political party affiliation, fostering discussions among like-minded individuals. Additionally, we collected data on participants' self-reported willingness to attend the meeting, as well as their support for various climate policies, socio-

demographic characteristics, and their perceptions of the credibility of the information provided in the treatment.

Based on social norm theory, we hypothesized that providing individuals with corrective information—specifically, accurate data about prevailing public support for carbon taxation—would, on average, increase their willingness to undertake both private and public actions to address climate change. Several factors may explain why individuals should adjust their behavior when presented with accurate social norms, including the desire to make prudent decisions, maintenance of social ties or reputation, signaling of group affiliation (in our case, as Americans), or simply conforming to others (Constantino et al., 2022). We found that while providing information about actual support for carbon taxation reduced misperceptions, it unexpectedly dampened private climate action, as indicated by marginally lower levels of donations. Interestingly, this intervention did not affect the behavior of those who underestimated actual support for carbon taxation but negatively impacted the donation decision of those who overestimated support, suggesting a backfiring effect. Nevertheless, the information increased individuals' willingness to participate in public climate action, specifically by reducing the minimal accepted reward for participating in climate policy discussions with peers. For instance, the intervention significantly increased Republicans' willingness to engage in such discussions, regardless of their stance on carbon taxation.

This study contributes to the literature in several ways. First, it addresses the ongoing debate in the literature on behavioral climate economics concerning the effectiveness of informational interventions aimed at correcting misperceptions to promote individual climate action, since previous studies have yielded inconclusive results (Pompeo and Serdarevic, 2021; Fang and Innocenti, 2023; Andre et al., 2024; Vlasceanu et al., 2024). Second, unlike previous research (Mildenberger and Tingley, 2019; Pompeo and Serdarevic, 2021; Fang and Innocenti, 2023; Andre et al., 2024), our study focuses entirely on policy, specifically examining misperceptions of actual support for carbon taxation and policy-centered climate actions, measured by donations to an organization lobbying for climate policies and willingness to discuss climate policies with peers. Given the widespread underestimation of actual support for climate policies (Sparkman et al., 2022) and the slow implementation of climate policies in many Western countries, this policy-focused approach is particularly relevant. Third, this study investigates the effect of misperception-correcting information about actual support for carbon taxation on public climate action by estimating individuals' willingness to

accept a reward for participating in actual climate policy discussions, which, to our knowledge has not been done before. Previous studies on "pluralistic ignorance" that aimed to capture public climate action have largely relied on individuals' self-reported intentions to share information on social media (Pompeo and Serdarevic, 2021) or have adopted intentions for political activism (Andre et al., 2024) or climate discussions (Geiger and Swim, 2016), which may not fully correspond to true behaviors if participants respond in ways they think will make them appear good (Vesely and Klöckner, 2020).

The chapter is organized as follows. First, we describe the experimental design, including the sample, detailed procedures, and experimental conditions. Next, we present the main and supplementary results of the study. Finally, we discuss the findings and provide the conclusion.

2.1 Experimental design

2.1.1 Sample

We designed an online, between-subjects experiment with two treatments.[2, 3] The experiment was conducted in March 2024 on the Prolific platform. We recruited 1,587 participants from the US[4]. Participation in the experiment was restricted to individuals affiliated with either the Democratic (50.2%) or Republican (49.8%) parties. The gender distribution was 50.1% male and 49.9% female participants. The average age of the participants was 43 years. More detailed descriptive statistics of the participants and the balance checks are provided in Table 2.1. There are some imbalances among several individual characteristics (education and income) between the experimental groups, indicating the need to control for these characteristics in the regression analysis.

[2] This experiment received ethical approval from the Committee on Research Ethics in Economics at the Faculty of Economics and Business Administration, application no. EC2024_01.

[3] The experiment was pre-registered at AsPredicted (https://aspredicted.org/9TZ_G5J).

[4] Initially, we hired 1,600 participants, however, based on pre-registered exclusion criteria, 13 individuals, who completed the experiment in less than 2 minutes or who took longer than 3 minutes on the treatment page, were excluded from the analysis.

Table 2.1. Summary statistics

	Means (std. dev.)			Differences (p-values)
	(1) Full sample	(2) Control (C)	(3) Treatment (T)	(4) T - C
Prior belief	61.549	61.368	61.728	0.360
	(17.742)	(17.848)	(17.646)	(0.686)
Female	0.499	0.500	0.498	-0.002
	(0.500)	(0.500)	(0.500)	(0.940)
Age	43.439	43.052	43.820	0.768
	(13.724)	(13.946)	(13.500)	(0.265)
College degree	0.590	0.621	0.561	-0.060**
	(0.492)	(0.486)	(0.497)	(0.015)
High income	0.313	0.339	0.287	-0.052**
	(0.464)	(0.474)	(0.452)	(0.025)
Employed	0.773	0.775	0.771	-0.004
	(0.419)	(0.418)	(0.420)	(0.834)
Republican	0.498	0.496	0.499	0.003
	(0.500)	(0.500)	(0.500)	(0.900)
Parent	0.548	0.567	0.528	-0.039
	(0.498)	(0.496)	(0.499)	(0.118)
Observations	1,587	788	799	1,587

Note: Columns 1–3 show the means of individual characteristics in the full sample and the control and treatment groups, with standard deviations in parentheses. Column 4 shows the differences in means between the treatment (T) and control (C) groups, with p-values indicated in parentheses. Prior belief is the perceived support for carbon taxation, ranging from 0 to 100. Female, College degree, High income, Employed, Republican, and Parent are binary indicators. Employed includes those participants who reported being currently employed full- or part-time. College degree includes those who reported having a bachelor's degree or higher. High income includes those whose reported annual household income is $100,000 or more. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

2.1.2 Procedures

Participants in the experiment were paid $1.2 to participate, with the potential for a bonus based on the accuracy of their responses and luck. On average, participants took approximately 7 minutes to complete the main experiment, and the average individual payoff was approximately $1.3. Both parts of the experiment were conducted using the Qualtrics survey software.

At the beginning of the experiment, information on socio-demographic characteristics was collected, such as country of residence, sex, political affiliation, age, education, income, and employment status. Participants were

then asked to express their agreement or disagreement with five statements on climate change using a 7-point Likert scale. These questions, designed to measure participants' skepticism about climate change, were placed at the beginning of the experiment to ensure responses were not influenced by subsequent treatments.

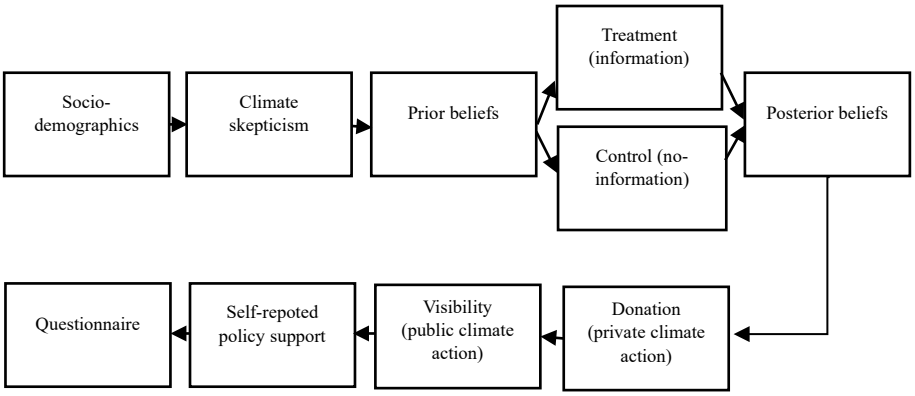


Fig 2.1. Experimental procedures. The figure outlines the main parts of the experiment and their sequence.

Next, an incentivized question was used to elicit participants' prior beliefs about public support for carbon taxation. Participants were informed that many individuals in the US had recently been polled about their attitudes toward various climate policies. Participants were then asked to estimate the level of support among the American public for one particular climate policy, specifically "Requiring fossil fuel companies to pay a carbon tax and using the money to reduce other taxes (such as income tax) by an equal amount." This climate policy wording was adopted from the Climate Change in the American Mind survey (Leiserowitz et al., 2023). To prevent participants from searching for the answer online, they were given 3 minutes to answer the question and submit the page and were informed that 5% of those who guessed closest to the correct number would be paid $0.5. We aimed to ensure that participants were incentivized to report truthful beliefs, but that the incentives were not too high to encourage cheating by searching for the answer online.

Participants in the information treatment were then exposed to information about actual support for a carbon tax policy in addition to their inferred support. Subsequently, an incentivized question was used to elicit participants' posterior beliefs about support for the same carbon taxation

policy among 100 individuals from the US in a survey conducted on Prolific. [5] Again, participants were informed that 5% of those who guessed closest to the correct number would be paid $0.5. Participants in the control condition received no information and proceeded directly to the elicitation of posterior beliefs.

As the next step, we elicited participants' willingness to take private climate action, that is, climate action that is largely invisible to others. Participants made an incentivized donation decision on how to allocate $10 between themselves and the Citizen's Climate Lobby, a nonprofit and nonpartisan grassroots advocacy organization focused on climate change. The instructions provided additional information about the Citizens' Climate Lobby, highlighting its focus on lobbying for national policies to address the climate crisis, including the introduction of a carbon tax.

The subsequent part of the experiment, "Visibility," was designed to elicit participants' willingness to engage in public climate action, or climate action that can be observed by others. Participants were asked about their willingness (on a 7-point Likert scale) and permission to share information on their donation decision with another participant, affiliated with the same political party and randomly matched with after the experiment. In this part, it was made clear that the individual donation decisions would be shared anonymously by the experimenter, namely without the participants seeing each other. Further, participants were told that a 5-minute video meeting, consisting of randomly matched pairs of participants affiliated with the same political party, would be organized after the experiment. The communicated purpose of the meeting was to discuss climate policies. Participants were informed that, at the beginning of the meeting, the matched person would be made aware of their counterpart's donation decisions and political affiliation. Participants were asked to report the lowest reward they would be willing to accept for attending such a meeting, with response options ranging from $0 to $50 in $0.10 increments. We also asked participants a simple binary-response question about their general willingness to attend the policy discussion meeting.

Further, participants were asked to report their support for climate policies, including providing tax rebates for purchasing energy-efficient vehicles or solar panels, generating renewable energy on public lands, levying carbon taxes on fossil fuel companies, and transitioning the US economy from fossil fuels to clean energy. The wording of the climate policies was adopted

[5] The pre-experimental survey was implemented in March 2024, before the experiment, and participants were paid $0.50 to complete the questionnaire.

from the Climate Change in the American Mind survey (Leiserowitz et al., 2023).

The experiment concluded with a survey that included questions about participants' perceptions of the credibility of the provided information, stating that 66% of Americans supported carbon taxes. Additional information was collected about the participants' placement on the political spectrum, whether they were a parent, and details about their state and postal code.

We included two attention checks in the experiment. The first attention check was administered at the beginning of the experiment, just before eliciting participants' climate skepticism, and the second was provided before the donation decision. After the experiment, we randomly paired two participants affiliated with the same political party who agreed to participate in a video meeting and whose stated willingness to accept participation in the meeting was not higher than $5. The pair was invited to attend the video meeting. Detailed experimental instructions are presented in Appendix B.

2.1.3 Treatments

Before the experimental manipulation, all participants were requested to estimate the level of support among registered US voters for a specific climate policy, outlined as "Requiring fossil fuel companies to pay a carbon tax and using the money to reduce other taxes (such as income tax) by an equal amount." In the treatment, we informed participants of the actual support for this climate policy. The wording of the policy and the factual support data utilized in the experiment were obtained from the Climate Change in the American Mind nationally representative survey, conducted in the fall of 2023 (Leiserowitz et al., 2023).

Information treatment. Participants were informed that 66% of registered US voters expressed support for carbon taxation. At the same time, their own perceived or guessed level of support for this tax, obtained earlier, was displayed. The presentation distinguished between the actual policy support, as displayed in green text, and the participants' guesses, as displayed in red text (see Fig 2.2). To ensure that participants believed in the actual level of support, they were informed they could request a copy of the survey results, which would be sent to them after the experiment. To prevent participants from rushing through the treatment page, the display of the "next" button in the information condition was delayed by 7 seconds.

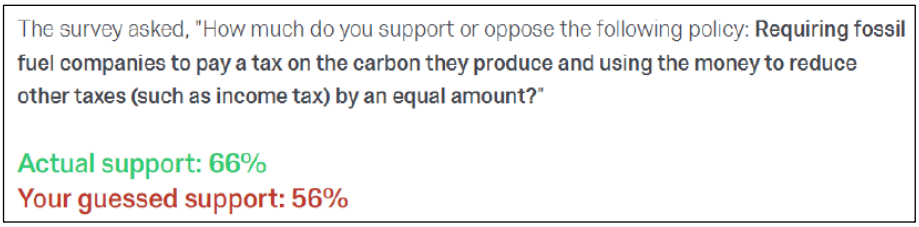


Fig 2.2. Example of treatment screen. Each participant in the treatment condition was shown the text highlighted in green, indicating the actual level of support for carbon taxation, and the text highlighted in red, indicating the participant's guessed support for the policy elicited in a previous question. The percentage in red is for illustrative purposes only, as the guesses varied for each participant.

Control. Participants were not provided with any information regarding the actual support for the climate policy. This condition served as the control in the experiment. We chose to include a passive (pure) control, where participants receive no information, rather than an active control, where they receive different information. A passive control was more appropriate for this experimental design, as it allowed us to explore how providing information affects climate action compared to when no information is provided. Moreover, as outlined by Haaland et al. (2023), having a pure control condition makes it easier to interpret the relationship between prior beliefs and outcome variables, as posterior beliefs in the control condition are not influenced by any new information. At the same time, eliciting prior beliefs ensured that participants in both the treatment and control conditions were primed on carbon taxation, allowing us to confirm that the effect on posterior beliefs and climate action arose from genuine belief updating.

2.2 Results

2.2.1 Misperceptions and belief updating

First, it is important to establish whether participants in the experiment misperceive social norms regarding support for carbon taxation. The distribution of prior beliefs, the average prior belief, and the actual share of Americans who support carbon taxation are shown in Fig 2.3. The results demonstrate that there was significant heterogeneity in individual prior beliefs about support for carbon taxation. On average, participants believed that 61% of Americans support carbon taxation, which is significantly different from the actual share of 66% ($p < 0.001$). The majority of participants (56%) underestimated support for carbon taxation.

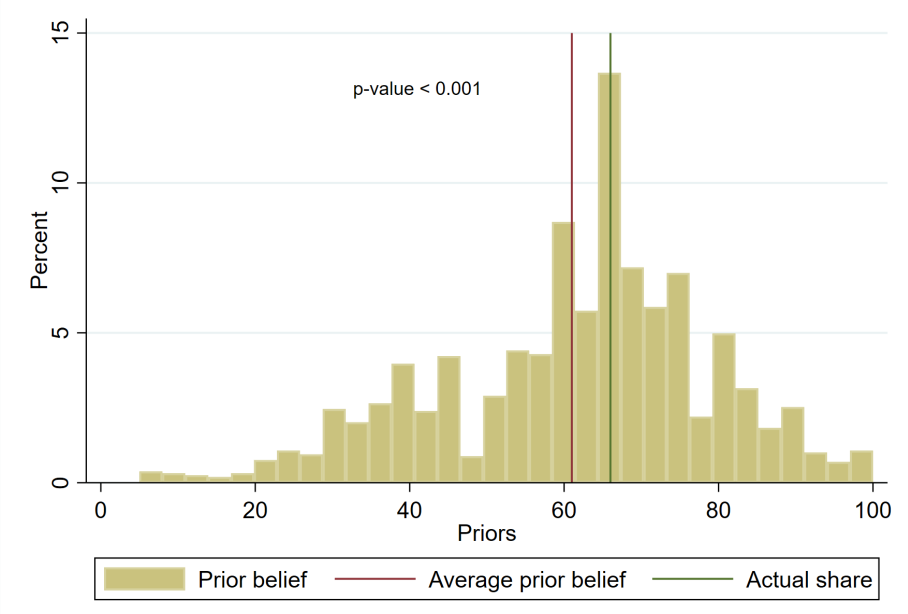


Fig 2.3. Distribution of prior beliefs. The figure displays the distribution of participants' prior beliefs about public support for carbon taxation. The vertical red line represents the average prior belief, while the green line illustrates the actual share of Americans who support carbon taxation.

After confirming that participants misperceived support for climate policies, we examined whether the provision of information about the actual support influenced subsequent so-called posterior beliefs about Americans' backing of carbon taxation. For this purpose, a regression analysis, with posterior beliefs as the dependent variable and the information treatment as the independent variable was estimated. The results are outlined in column 1 of Table 2.2. In column 2, we added controls for socio-demographic characteristics. Columns 3 and 4 display results for the subsets of individuals who either overestimate or underestimate support for carbon taxation, respectively. A complete set of results is provided in Table B1 of Appendix B.

Table 2.2. Belief updating

Posterior belief	(1) Full sample	(2) Full sample	(3) Priors > Actual	(4) Priors < Actual
Treatment	1.403**	1.483**	-10.298***	9.019***
	(0.713)	(0.719)	(0.840)	(0.856)
Constant	65.256***	63.222***	86.683***	55.179***
	(0.643)	(4.704)	(7.534)	(3.301)
Observations	1,587	1,587	624	890
R-squared	0.002	0.040	0.230	0.151
Controls:				
Socio-demographics	No	Yes	Yes	Yes

Note: The table reports OLS estimates with robust standard errors in parentheses. The dependent variable, posterior belief, represents the post-treatment belief about the share of American individuals expressing support for carbon taxation in a pre-experiment Prolific survey. Columns 1 and 2 depict results where the dependent variable is regressed on the treatment variable using the full sample. Columns 3 and 4 display results for the sub-samples of individuals who overestimate and underestimate the support for carbon taxation, respectively. The regressions presented in columns 2-4 include socio-demographic controls: sex (binary), age (continuous), income (categorical), education (categorical), employment (categorical), political party affiliation (binary), political spectrum (categorical), and parenthood (binary). $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

We found that the information treatment shifted the average posterior belief upward by approximately 1.4–1.5 percentage points (see columns 1 and 2). Additionally, the information treatment increased the average posterior belief among participants who underestimated the policy support before receiving the treatment (see column 3) and decreased it among those who overestimated the support (see column 4). These results confirm the effectiveness of our informational intervention.

2.2.2 Private climate action

Main results

First, we examined if information had an effect on individuals' willingness to engage in private climate policy action. We measured the willingness to take private climate action with the incentivized donation decision, where participants allocated $10 between themselves and the Citizens' Climate Lobby. To estimate the causal impact of the information treatment on the willingness to engage in private climate action, we regressed the variable donation on the treatment indicator.

Table 2.3. Treatment effect on donation

Donation	(1)	(2)	(3)
Treatment	-0.221	-0.202	-0.225*
	(0.137)	(0.135)	(0.132)
Female		0.322**	0.197
		(0.142)	(0.137)
Republican		-0.669**	-0.272
		(0.322)	(0.314)
Age		0.030***	0.032***
		(0.006)	(0.006)
Income: $25-50k		0.420*	0.347
		(0.230)	(0.224)
Income: $50-75k		0.422*	0.352
		(0.230)	(0.224)
Income: $75-100k		0.776***	0.779***
		(0.252)	(0.249)
Income: $100-125k		0.965***	0.872***
		(0.290)	(0.277)
Income: $125-150k		0.848***	0.780***
		(0.309)	(0.299)
Income: >$150k		0.360	0.236
		(0.274)	(0.266)
Education: High school		1.499***	1.568***
		(0.353)	(0.529)
Education: Some college		1.439***	1.484***
		(0.340)	(0.523)
Education: Associates/ technical		1.511***	1.600***
		(0.378)	(0.549)
Education: Bachelor's degree		1.417***	1.429***
		(0.336)	(0.521)
Education: Graduate degree		1.366***	1.258**
		(0.364)	(0.538)
Employment: Part-time		-0.321	-0.231
		(0.205)	(0.200)
Employment: Due to start		0.473	-0.035
		(0.854)	(0.810)
Employment: Unemployed		-0.311	-0.205
		(0.249)	(0.244)
Employment: Non-paid work		-0.099	0.044

Donation	(1)	(2)	(3)
		(0.230)	(0.225)
Employment: Other		0.240	0.293
		(0.558)	(0.535)
Parent		0.046	0.001
		(0.154)	(0.148)
Political spectrum: Moderate		0.395	0.122
		(0.292)	(0.281)
Political spectrum: Liberal		0.457	-0.202
		(0.338)	(0.336)
Political spectrum: Other		1.002	1.225
		(1.118)	(1.122)
Climate change happening			0.079
			(0.059)
Climate change human-caused			0.037
			(0.050)
Worried about climate change			0.260***
			(0.076)
Personally harmed by climate change			0.171**
			(0.078)
Americans harmed by climate change			-0.063
			(0.086)
Constant	2.187***	-1.091**	-3.410***
	(0.100)	(0.549)	(0.720)
Observations	1,587	1,587	1,587
R-squared	0.002	0.072	0.134

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, donation, indicates the decision to donate to the climate change organization. Column 1 shows results where the dependent variable is regressed on the treatment variable without any controls. Columns 2 and 3 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

The results are presented in column 1 of Table 2.3. In subsequent specifications, we introduced controls for individual participant characteristics. Column 2 presents results from a regression that incorporated socio-demographic characteristics. Furthermore, column 3 shows results from a regression that, in addition to socio-demographic traits, included five climate skepticism variables. These variables were derived from participants' responses to five statements regarding climate change on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am concerned about climate change," "Climate change will personally affect me," and "Climate change will affect many people in the US."

In contrast to our expectations, we found that the information treatment had a negative effect on donation, that is, on average, participants who received the information about the actual public support for carbon taxation, reduced their donations to the climate organization. However, the estimated coefficient of the treatment variable was only marginally statistically significant (when controlling for socio-demographic characteristics and climate skepticism; see column 3).

Due to the censored nature of the donation data (the amount that the participants could choose to donate to the climate organization was restricted to range from \$0 to \$10), we additionally estimated the Tobit regressions. The results of the Tobit regressions, reported in Table B2 of Appendix B, were largely in line with the results of the OLS regressions presented in Table 2.3. The coefficient for the treatment variable in a regression when controlling for socio-demographic characteristics and climate skepticism remained marginally statistically significant ($p = 0.050$). Thus, we found weak evidence that the informational treatment had a negative impact on the willingness to take private climate action. Graphs illustrating the distributions of donations by treatment are presented in Appendix B.

Treatment effect heterogeneity

As shown in Table 2.2, participants who underestimated and overestimated support for carbon taxation adjusted their beliefs differently after receiving information about the actual support for carbon taxation. Therefore, it is crucial to examine whether the treatment effect on the willingness to privately act on climate change also varied based on prior beliefs. To investigate this question, we regressed the donation decision on the treatment variable for subsets of individuals who either overestimated or underestimated support for

carbon taxation. The results from the regression analysis are presented in Table 2.4, with columns 1–2 displaying the outcomes for individuals whose prior beliefs about policy support are below the actual support, and columns 3–4 focusing on those whose prior beliefs are above or equal to the actual support. Columns 1 and 3 report the results from the regression without any controls, while columns 2 and 4 include controls for socio-demographic characteristics and climate skepticism.

For individuals who overestimated or correctly guessed the support for carbon taxation, providing information about the actual support for the policy decreased the average donation by around $0.56–0.60 (see columns 3–4 of Table 2.4). This finding suggests the existence of a boomerang effect—a phenomenon observed when individuals with desirable behaviors revert to undesirable behaviors after being exposed to information about the actual social norms in the group. However, no statistically significant treatment effect on donation was found for participants who underestimated support.

We also examined whether the treatment effect varied by the perception gap observed before the treatment for the subsamples of participants who underestimated the support for carbon taxation and those who overestimated or correctly estimated it. The perception gap was measured as the absolute difference between prior beliefs about public support for carbon taxation and the actual support. We regressed the donation decision on the treatment variable, the perception gap, and the interaction term of the perception gap with the treatment variable. In additional specifications, we controlled for individual socio-demographic characteristics and climate skepticism. The results, provided in Table B3 of Appendix B, showed that in both subsamples, the coefficient for the interaction term was statistically insignificant. Thus, we did not find evidence that the treatment effect differed with the size of the perception gap.

Table 2.4. Treatment effect on donation by prior beliefs

Donation	(1) Prior < Actual	(2) Prior < Actual	(3) Prior ≥ Actual	(4) Prior ≥ Actual
Treatment	0.037	0.031	-0.604***	-0.560**
	(0.172)	(0.166)	(0.221)	(0.217)
Constant	1.825***	-2.740***	2.693***	-3.896***
	(0.120)	(0.894)	(0.169)	(1.256)
Observations	890	890	697	697
R-squared	0.000	0.139	0.011	0.154
Controls:				
Socio-demographics	No	Yes	No	Yes
Climate skepticism	No	Yes	No	Yes

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, donation, indicates the decision to donate to the climate change organization. Columns 1-2 display the results for the sub-sample of individuals who underestimate the support for carbon taxation. Columns 3-4 show the results for the sub-sample of individuals who overestimate or guess the support for carbon taxation correctly. Columns 1 and 3 show the results where the dependent variable is regressed on the treatment variable without any controls. Columns 2 and 4 present regression outcomes controlling for socio-demographic characteristics and climate skepticism. Socio-demographic controls include sex (binary), age (continuous), income (categorical), education (categorical), employment (categorical), political party affiliation (binary), political spectrum (categorical), and parenthood (binary). Climate skepticism variables are based on participants' agreement with five statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Next, we investigate whether participants affiliated with the Democratic party responded differently to the informational treatment than participants affiliated with the Republican party, as climate change and climate policy have become increasingly polarized issues in the US in recent decades (Dunlap et al., 2016; Pew Research Center, 2020). To investigate if this is the case, we regressed the donation decision on the treatment variable, a dummy variable indicating that the participant is a Republican, and the interaction of the Republican variable with the treatment variable. The results presented in Table B4 of Appendix B show that there was no statistically significant difference in the treatment effect between Democrats and Republicans.

Additional results

We investigate whether the treatment effects differed when using another commonly explored measure of climate action: self-reported support for climate policies. As opposed to an incentivized measure, such as donation decisions. At the end of the experiment, participants were asked to indicate

their support for four climate policies on a 4-point Likert scale (see subsection "Experimental Instructions" in Appendix B for more details on the policies). We assigned values from zero to four to the responses, ensuring that larger values indicated more policy support, and constructed a policy support index by summing all responses. We standardized the index to have a mean of zero and a standard deviation of one. We then regressed the policy support index on the treatment variable. In additional specifications, we included controls for socio-demographic characteristics and climate skepticism. However, we did not find evidence that the treatment affected self-reported policy support. This suggests that self-reported policy support may be limited at capturing changes in actual climate policy preferences. The regression results are provided in Table B5 of Appendix B.

2.2.3 Public climate action

Main results

Next, we examine willingness to engage in public climate policy action. We measured public climate action by asking participants about the lowest reward they would accept for joining a video meeting to discuss climate policies. Based on participant responses, we created the variable WTA. We regressed WTA on the treatment variable. Column 1 of Table 2.5 presents the results from the regression without any controls. Column 2 shows the results from a regression that includes socio-demographic characteristics, and column 3 displays results from a regression that, in addition to socio-demographics, controls for climate skepticism. Participants were informed that their donation decisions would be shared with matched participants during the discussion. Thus, there might be a negative relationship between donation decisions and WTA. For example, participants who donate more may be more willing to participate in a policy meeting to gain benefits from being seen as generous and, therefore, have a lower WTA. Conversely, individuals who donate nothing may feel bad and request a higher reward for attending the meeting to compensate for the displeasure of being viewed as selfish by others. To address this potential endogeneity, columns 4–5 include donation as a control variable.

Table 2.5. Treatment effect on willingness to accept

WTA	(1)	(2)	(3)	(4)	(5)
Treatment	-1.051	-1.465*	-1.450*	-1.573**	-1.556**
	(0.786)	(0.781)	(0.782)	(0.781)	(0.783)
Donation				-0.534***	-0.474***
				(0.151)	(0.158)
Female		0.141	0.355	0.313	0.449
		(0.797)	(0.797)	(0.794)	(0.795)
Republican		1.218	0.352	0.861	0.223
		(1.794)	(1.820)	(1.807)	(1.829)
Age		0.009	0.008	0.025	0.024
		(0.033)	(0.033)	(0.033)	(0.033)
Income: $25-50k		-0.213	0.002	0.011	0.167
		(1.623)	(1.631)	(1.615)	(1.624)
Income: $50-75k		1.562	1.642	1.788	1.809
		(1.671)	(1.675)	(1.667)	(1.671)
Income: $75-100k		0.833	0.928	1.247	1.298
		(1.687)	(1.693)	(1.684)	(1.687)
Income: $100-125k		-1.280	-1.205	-0.764	-0.791
		(1.735)	(1.737)	(1.730)	(1.730)
Income: $125-150k		-0.823	-0.839	-0.370	-0.469
		(1.859)	(1.859)	(1.861)	(1.859)
Income: >$150k		3.195	3.472*	3.388*	3.584*
		(1.999)	(2.004)	(1.992)	(1.997)
Education: High school		-5.169	-5.095	-4.368	-4.351
		(7.168)	(7.400)	(7.139)	(7.382)
Education: Some college		-7.498	-7.397	-6.729	-6.693
		(7.131)	(7.365)	(7.106)	(7.351)
Education: Associates/ technical		-6.578	-6.566	-5.771	-5.807
		(7.173)	(7.398)	(7.146)	(7.383)

WTA	(1)	(2)	(3)	(4)	(5)
Education: Bachelor's degree		-5.854	-5.746	-5.096	-5.068
		(7.122)	(7.353)	(7.096)	(7.338)
Education: Graduate degree		-6.006	-5.673	-5.276	-5.076
		(7.161)	(7.389)	(7.134)	(7.374)
Employment: Part-time		3.346***	3.305***	3.174**	3.195**
		(1.281)	(1.281)	(1.282)	(1.281)
Employment: Due to start		7.640	8.731	7.892	8.714
		(7.415)	(7.241)	(7.114)	(6.991)
Employment: Unemployed		5.271***	5.222***	5.105***	5.125***
		(1.890)	(1.871)	(1.874)	(1.864)
Employment: Non-paid work		3.253**	3.156**	3.200**	3.177**
		(1.339)	(1.339)	(1.337)	(1.337)
Employment: Other		4.649	4.959	4.777	5.098
		(3.180)	(3.206)	(3.208)	(3.234)
Parent		-4.051***	-4.114***	-4.027***	-4.114***
		(0.917)	(0.913)	(0.914)	(0.912)
Political spectrum: Moderate		-0.183	0.363	0.028	0.420
		(1.537)	(1.550)	(1.550)	(1.558)
Political spectrum: Liberal		-0.122	0.917	0.122	0.821
		(1.887)	(1.937)	(1.897)	(1.944)
Political spectrum: Other		-1.587	-1.215	-1.051	-0.633
		(5.526)	(5.368)	(4.997)	(4.960)
Climate change happening			0.097		0.134
			(0.444)		(0.445)
Climate change human-caused			-0.352		-0.334
			(0.339)		(0.338)
Worried about climate change			-0.084		0.040
			(0.488)		(0.488)
Personally harmed by climate change			0.474		0.555
			(0.449)		(0.453)
Americans harmed by climate change			-0.928*		-0.958*

WTA	(1)	(2)	(3)	(4)	(5)
			(0.504)		(0.505)
Constant	14.199***	19.802***	23.744***	19.218**	22.126***
	(0.582)	(7.584)	(7.965)	(7.555)	(7.951)
Observations	1,587	1,587	1,587	1,587	1,587
R-squared	0.001	0.041	0.047	0.049	0.053

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, WTA, represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. Column 1 shows results where the dependent variable is regressed on the treatment variable without any controls. Columns 2–5 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age and donation are continuous variables. Variable donation indicates the decision to donate to the climate change organization. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

As expected, the regression results indicated that providing information has a negative effect on the WTA reward for participating in a policy discussion, meaning it increases willingness to engage in public climate action. The treatment effect is statistically significant at least at the 10% significance level in regression specifications with control variables (see columns 2–5). Controlling for the donation decision strengthens the evidence of a positive treatment effect on the willingness to discuss climate policies (see columns 4–5).

The variable WTA is based on censored data, as individuals could choose rewards from $0 to $50 (see Appendix B for the distributions of WTA by treatment). Thus, we additionally conducted Tobit regressions on the WTA using the same specifications as those presented in Table 2.5. The results of the Tobit regressions, reported in Table B6 of Appendix B, largely align with the results of the OLS regressions presented in Table 2.5.

Treatment effect heterogeneity

Next, we investigated whether the treatment effect on the willingness to engage in public climate policy action differed between participants who underestimated and those who overestimated support for carbon taxation. We regressed WTA on the treatment variable, a dummy variable indicating that the participant underestimated public support for carbon taxation (variable underestimator), and the interaction term between the treatment and the underestimator variable. In additional specifications, we controlled for individual socio-demographic characteristics, climate skepticism, and donation decisions. We did not find evidence that the average treatment effects differed between the two groups in any model specifications (see Table B7 in Appendix B for the results).

Next, we examined whether the information treatment had a different effect on the reservation price for attending a policy discussion for Democrats and Republicans. We regressed WTA on the treatment variable, a dummy variable indicating that the participant was a Republican, and the interaction between the Republican variable and the treatment variable. The results are presented in Table 2.6. Column 1 outlines results from the regression without any controls, while columns 2–5 report results from additional specifications with different sets of controls, including donation decision, socio-demographic characteristics, and climate skepticism.

We found that in the control condition, participants affiliated with the Republican Party, on average, were willing to accept higher rewards for participating in a climate policy discussion than those affiliated with the Democratic Party. This indicated that Republicans were less willing to engage

in public climate action than Democrats. Providing information on the actual share of Americans supporting carbon taxation had a positive, albeit largely statistically insignificant, effect on Democrats' WTA, but it reduced Republicans' WTA by around $4–4.8. Depending on the model specification, the difference in treatment effects between Democrats and Republicans was $5.8–6.2 (see the coefficient on the interaction term in Table 2.6).

Table 2.6. Treatment effect on willingness to accept by party affiliation

WTA	(1)	(2)	(3)	(4)	(5)
Treatment	1.818*	1.597	1.612	1.488	1.510
	(1.065)	(1.065)	(1.067)	(1.063)	(1.064)
Republican	3.438***	4.225**	3.354*	3.867**	3.229
	(1.159)	(1.939)	(1.972)	(1.951)	(1.979)
T x Republican	-5.767***	-6.151***	-6.149***	-6.150***	-6.158***
	(1.567)	(1.561)	(1.559)	(1.555)	(1.555)
Constant	12.49***	19.07***	22.98***	18.49**	21.36***
	(0.730)	(7.356)	(7.747)	(7.326)	(7.732)
Observations	1,587	1,587	1,587	1,587	1,587
R-squared	0.010	0.050	0.057	0.058	0.063
Controls:					
Donation	No	No	No	Yes	Yes
Socio-demographics	No	Yes	Yes	Yes	Yes
Climate skepticism	No	No	Yes	No	Yes

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, WTA, represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. It is regressed on the treatment variable, a binary variable Republican, and the interaction of the variable Republican with the treatment variable. Column 1 shows regression results without any controls. Columns 2–5 present regression outcomes with controls. Column 2 includes socio-demographic controls: sex (binary), age (continuous), income (categorical), education (categorical), employment (categorical), political party affiliation (binary), political spectrum (categorical), and parenthood (binary). Column 3 incorporates socio-demographic and climate skepticism controls. Climate skepticism variables are based on participants' agreement with five statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." Column 4 controls for the socio-demographic characteristics as well as the donation decision to a climate change organization, elicited in a previous part of the experiment. Column 5 controls for socio-demographics, the donation decision, and climate skepticism. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Did the treatment lead to increased willingness for a pro- or anti-climate policy discussion among Republican participants? To shed light on this question, we tested whether the treatment led to different responses in

Republicans' WTA between supporters and opposers of carbon taxation. We regressed the outcome variable WTA on the treatment variable, a dummy variable indicating that the participant supported carbon taxation, and their interaction term. The regression results (refer to Table B8 of Appendix B) showed that, in the control condition, Republicans who supported carbon taxation had, on average, a lower WTA than those who did not support carbon taxation. However, the treatment did not have a different effect on the supporters and opponents of carbon taxation, as the interaction term was statistically insignificant. This suggests that the increased willingness for public discussion among Republicans was broad-based. We treated this analysis as exploratory since it was not pre-registered and the policy support variable was asked at the end of the experiment, which may have been affected by the treatment itself. Although, we did not find statistically significant treatment effects on policy support, as discussed previously.

Additional results

We conducted a Probit regression on an additional measure of public climate action, denoted as the dummy variable meeting, which represents participants' self-reported willingness to attend a video meeting with another participant to discuss climate policies. We regressed the meeting variable on the treatment variable. In additional specifications, we included controls for socio-demographic characteristics, climate skepticism, donation, and WTA. However, no statistically significant treatment effects on the meeting variable were found across any model specification. The results from the Probit regression are provided in Table B9 of Appendix B.

2.3 Concluding remarks

This study gathered experimental evidence from the US to examine how correcting misperceptions about public support for carbon taxation affects individuals' willingness to engage in private and public actions concerning climate policies.

First, we observed that the majority of individuals underestimated public support for carbon taxation. However, the degree of underestimation in our study was lower than that found in a representative survey by Sparkman et al. (2022). Several factors may explain this difference. Participants in our experiment were more educated than the general US population, with 60% of participants over the age of 25 holding at least a bachelor's degree, compared to less than 40% of the US population (U.S. Census Bureau, 2022). Individuals with higher levels of education may be better informed about the actual policy support in the public,

possibly resulting in lower misperception. Additionally, our sample was more supportive of carbon taxation compared to a nationally representative sample (Leiserowitz et al., 2023). The literature shows policy supporters, when asked to estimate public support for a policy, tend to give higher estimates than non-supporters, a phenomenon explained by "egocentric bias" (Mildenberger and Tingley, 2019; Sparkman et al., 2022). Another potential reason for the smaller perception gap in our sample may be related to the fact that, unlike in Sparkman et al. (2022), belief elicitation was incentivized in our study, which may have led to more accurate estimates of policy support (Charness et al., 2021).

Second, we found that providing information on actual policy support successfully reduced misperceptions. Individuals who underestimated support revised their beliefs upward, while those who overestimated revised them downward after receiving the informational intervention. These findings on the effectiveness of informational interventions in updating beliefs align with those observed in the behavioral literature (e.g., Mildenberger and Tingley, 2019; Pompeo and Serdarevic, 2021; Dillon and Lochman, 2022; Andre et al., 2024).

Third, we found that informational interventions negatively impacted private climate action, as measured by donations to a climate-policy-supporting organization. This effect was only marginal and was entirely driven by individuals who overestimated public support for carbon taxation. These participants reduced their private climate actions after receiving the information, suggesting that correcting misperceptions can backfire. The existence of boomerang effects—situations where individuals revert to undesirable behaviors when exposed to norm-based interventions—has been observed in studies on environment-friendly behaviors (e.g., Schultz et al., 2007).

There may be several reasons why some participants who overestimate reduce their willingness to engage in private climate action. First, observing a lower norm may lead them to conform to it to avoid being unaligned with what is considered common practice. Second, they may wish to avoid being "suckers" by contributing more to the public good of fighting climate change compared to others. This finding of a boomerang effect calls for caution in implementing misperception-correcting interventions on policy support, as they may be counterproductive and even lead to undesirable consequences for private climate action.

Finally, we found that providing information on actual policy support had a positive effect on the willingness to engage in public climate action, specifically for discussing climate policies. Informing participants that most people support carbon taxation may have alleviated their fears of being disliked or losing respect when discussing climate policies. These results on climate discussions largely align with those of Geiger and Swim (2016).

Interestingly, the informational intervention significantly increased the willingness to discuss climate policies among Republicans. This increase was broad-based, observed among both Republicans who supported carbon taxation and those who opposed it. However, it is unclear whether the same mechanisms were at play for supporters and opponents of climate policies. It is possible that learning about high support for carbon taxation motivated opponents to take action and persuade others of the policy's perceived drawbacks. Nevertheless, this result underscores the importance of norm-based information in encouraging discussions about climate change, particularly among groups typically viewed as vocal climate change deniers and climate policy opponents. Meaningful climate policy discussions could be a crucial step toward reducing political polarization on climate issues and implementing effective measures to combat climate change.

We are uncertain as to how well the task employed in this study to elicit public climate action predicts real-world activism, hence this question requires further research. Future field studies could connect the results of this task to actual climate activism. Additionally, future research could explore strategies to limit the emergence of boomerang effects while correcting for misperceptions. For example, by investigating whether, in addition to misperception-correcting information, providing information that invites collaboration on a common goal or indicates norms as shifting in favor of pro-climate behavior (dynamic norms) can prevent backfiring (Sparkman et al., 2021). Another avenue for future research is to explore how individuals' climate behaviors are influenced when they receive misperception-correcting information about narrower groups with which they identify, or when such information is provided by in-group leaders. For instance, what would be the effect of information on Republicans' willingness to take climate action if they were informed of actual policy support among Republicans, or if the message was delivered by an authoritative Republican leader?

While research indicates that representative samples are not essential for deriving generalizable estimates of effect sizes within countries (Weinberg et al., 2014; Mullinix et al., 2015; Coppock et al., 2018), larger representative samples of the US population could provide additional insights into groups that are otherwise underrepresented in our sample, such as individuals with lower levels of education or those with different political views such as Independents (who were excluded from our sample). Furthermore, it would be valuable to explore in greater detail the impact of informational interventions on willingness to engage in climate discussions, considering the type of discussion (e.g., pro- or anti-policy), as well as to investigate the actual outcomes of such discussions. We leave these questions for future research.

3 THE PANDEMIC, NARRATIVES AND TRUST

This chapter is based on joint work with Jūratė Jaraitė-Kažukauskė and Agnė Kajackaitė. It was published as Galdikiene, L., Jaraite, J., & Kajackaite, A. (2024). Effects of cooperative and uncooperative narratives on trust during the COVID-19 pandemic: Experimental evidence. Journal of Behavioral and Experimental Economics, 102246. In this publication, L. Galdikienė served as the primary author.

In 2020, the humanity was struck by one of the most severe health emergencies in history—the COVID-19 pandemic (Adam, 2022). It is well-documented in the existing literature that health crises can affect people's trust in others (e.g., Aassve et al., 2021; Li et al., 2021; Aassve et al., 2022, Gambetta and Morisi, 2022; Casoria et al., 2023), but the direction and the size of this effect may depend on how the health crises are communicated to the society (Aassve et al., 2021). Previous findings in the literature showed that, depending on the content of the message, exposure to information spread through mass media can fuel animosity between people (DellaVigna et al., 2014; Yanagizawa-Drott, 2014; Wang, 2021) as well as help build interpersonal trust (Antoci et al., 2019; Blouin and Mukand, 2019).

To fight the COVID-19 pandemic, many policymakers, health experts, and the media have engaged in active communication, which has often included the sharing of different narratives. In a broad sense, narratives are "stories people tell themselves, and each other, to make sense of human experience—that is, to organize, explain, justify, predict and sometimes influence its course" (Bénabou et al., 2018, p. 1). Narratives do not necessarily have to be entirely true—according to Bruner (1991), narratives "are a version of reality whose acceptability is governed by convention and 'narrative necessity' rather than by empirical verification and logical requiredness" (p. 4).

Many narratives related to the COVID-19 pandemic have been expressed as messages or stories evaluating society's behavior during the COVID-19 pandemic in terms of (non)compliance to pandemic norms. Such narratives are referred to as "norm-based narratives." During the COVID-19 pandemic, narratives depicting behaviors that violate pandemic social norms (uncooperative narratives) were often more common than narratives depicting behaviors that support pandemic social norms (cooperative narratives) (Ryoo and Kim, 2021). Uncooperative narratives highlight the widespread non-compliance to pandemic health measures, such as violations of social distancing and mask-wearing requirements (e.g., see BBC, 2021) and

resistance to pandemic restrictions and COVID-19 vaccination (e.g., see Goldstein, 2021; Hill, 2022; The Guardian, 2022).

However, it is unclear how norm-based communication might affect individuals' trust in each other. This understanding is important, as changes in trust could eventually impact many economic outcomes, such as financial (Guiso et al., 2004) and economic development (Algan and Cahuc, 2010; Tabellini, 2010), entrepreneurship (Guiso et al., 2006), international trade and investment (Guiso et al., 2009) as well as aggregate productivity (Bloom et al., 2012). Furthermore, a deeper understanding of the effects of norm-based communication on trust can inform the design of policy interventions aimed at addressing emergencies that require collective action (e.g., health or environmental crises), and managing the consequences of such communication on interpersonal trust. This study, therefore, seeks to investigate the causal relationship between norm-based (cooperative and uncooperative) pandemic narratives and people's trust in strangers. Additionally, it tests how the salience of the COVID-19 pandemic affects trust and how the norm-based narratives impact health attitudes, in particular, toward pandemic emergency and vaccination.

Existing empirical evidence suggests that observed or perceived violation and promotion of social norms might have an impact on trust. Iacono et al. (2021) found that people who perceived other people as not adhering to pandemic health measures had lower levels of self-reported interpersonal trust after the first wave of the COVID-19 pandemic. Peysakhovich and Rand (2016) demonstrated that when people are exposed to environments that either support or do not support cooperation, there is a corresponding effect on their trust behavior and self-reported trust in others. Banerjee (2016) found that social norm violations decrease people's beliefs about the trustworthiness of others and consequently their trust in them.

Bénabou et al. (2018) showed how certain "moral narratives" can serve as excuses for individuals to behave selfishly or can increase the pressure on individuals to behave morally. Some authors have demonstrated that moral nudges, that is, messages that make norms salient, can promote prosocial behavior (Dal Bó and Dal Bó, 2014; Rand et al., 2014; Capraro and Rand, 2018; Tappin and Caprano, 2018; Capraro et al., 2019). Similarly, priming of norm-related concepts can also affect prosociality. For example, priming "cooperation" increases contributions in the public good game (Drouvelis et al., 2015), and similarly, priming "trust" and "distrust" increases and decreases trust in the trust game, respectively (Posten et al., 2014). Overall, the use of language that triggers moral considerations can account for many human

behaviors in social interactions (for a literature review, see Capraro and Halpern, 2024).

Our contribution to the literature is threefold. First, to the best of our knowledge, we are the first to study the effects of norm-based narratives, including both cooperative and uncooperative types, on individuals' trust. Second, our study adds to the ongoing research about the general relationship between the COVID-19 pandemic and trust, which, so far, has provided mixed results (Esaiasson et al., 2020; Aksoy et al., 2021; Iacono et al., 2021; Li et al., 2021; Shachat et al., 2021; Aassve et al., 2022; Gambetta and Morisi, 2022; Casoria et al., 2023). Third, our study was conducted at a later stage of the COVID-19 pandemic than the other studies exploring the impact of the COVID-19 pandemic on trust. At that time most pandemic-related restrictions in the United Kingdom (UK)—the country, in which we conducted our experiment—were removed (Hale et al., 2021) and over 74% of the British population was fully vaccinated (Mathieu et al., 2021). This timing of the experiment provides a less noisy experimental environment compared to earlier pandemic phases.

To study the effects of the COVID-19 pandemic and norm-based pandemic narratives on trust behaviors, we conducted an online experiment with four treatments in the UK. Participants were assigned to one of the following treatments: "cooperative narrative," "uncooperative narrative," "COVID-19 salience," or "neutral." All participants read a short article. In the cooperative narrative and uncooperative narrative treatments, participants read an article that emphasized cooperative (compliant) and uncooperative (non-compliant) behaviors of British citizens during the COVID-19 pandemic, respectively. In the COVID-19 salience treatment, participants read an article that reminded them of the COVID-19 pandemic only. Participants in the baseline condition—the neutral treatment—read a neutrally worded article unrelated to the COVID-19 pandemic. After reading the articles, participants played an incentivized trust game (Berg et al., 1995), wherein the amount of money trustors sent to trustees represented the level of trust. We also elicited trustors' beliefs about the trustworthiness of trustees and distributed a questionnaire on participants' interpersonal and institutional trust, experience with COVID-19, attitudes toward the pandemic emergency and vaccination, and socio-demographic information.

We hypothesized that reminding participants of the COVID-19 pandemic (COVID-19 salience treatment) and of the uncooperative behavior of individuals during the pandemic (uncooperative narrative treatment) will reduce their trust in others. We also expected that receiving information that

emphasizes the widespread compliance to pandemic norms (cooperative narrative treatment) will have a positive effect on trust. However, we did not find evidence that priming of the COVID-19 pandemic or of the pandemic narratives (cooperative or uncooperative) has any significant effect on trust. In addition, we expected that the exposure to the uncooperative narrative treatment will raise the perceived pandemic emergency level and the general support for vaccination. We found support for this hypothesis, that is, that emphasizing instances of the society violating pandemic norms (the uncooperative narrative) induces people to view the pandemic as a greater health emergency and to be more in favor of vaccination in general.

The chapter is organized as follows. First, we describe the experimental design and procedures and outline the hypotheses. Second, we present the manipulation check and the main results of the study. Finally, we discuss the findings and present the conclusion.

3.1 Experimental design and procedures

3.1.1 Treatments

We designed an online between-subject experiment with four treatments: uncooperative narrative, cooperative narrative, COVID-19 salience, and neutral.[6, 7] In all treatments, the participants read one short article.[8] The articles were based on publicly available information obtained from media articles, statistical reports, and other online information sources. As much as possible, all articles were designed symmetrically in terms of their structure and length. The treatment conditions are described below. The transcripts of the articles are provided in Appendix C.

Uncooperative narrative treatment. The participants read an article that provided them with an uncooperative narrative of British citizens' behavior during the COVID-19 pandemic. This narrative emphasized the violations of pandemic norms: Some people refuse to maintain social distancing, decline to wear face masks, break travel rules, refuse vaccinations, use fake COVID-19

[6] This experiment received ethical approval from the WZB Research Ethics Committee, application no. 2022/4/151.

[7] The experiment was pre-registered at AsPredicted (https://aspredicted.org/81B_9BB). This pre-registration does not include the hypotheses on health-related attitudes. We decided to explore the effects of norm-based narratives on health-related attitudes ex post.

[8] Similar priming techniques to study the effects of the COVID-19 pandemic were used by Daniele et al. (2024), Harrs et al. (2021), and Aassve et al. (2022).

passes, and protest pandemic measures. The text also outlined the negative consequences of such behaviors on people's personal health as well as society's health, including the increased spread of the virus and the potential collapse of the National Health Service (NHS)—the publicly funded healthcare system of the UK.

Cooperative narrative treatment. The participants read an article that provided them with a cooperative narrative of British citizens' behavior during the COVID-19 pandemic. This narrative emphasized the compliance to pandemic norms: Most people maintain social distancing, wear face masks, adhere to travel rules, and get fully vaccinated. The article also outlined the positive effects of vaccines on people's personal health and other people's health, including the reduced spread of COVID-19 and the prevented collapse of the NHS.

COVID-19 salience treatment. The participants read an article that reminded them of the COVID-19 pandemic. The text briefly explained what COVID-19 is, where and when it originated, and how it turned into a pandemic. It also outlined the most common symptoms of COVID-19, possible variations in the severity of the disease, and length of recovery from the disease. The article did not provide any information on health-related behaviors of other people or behaviors considered appropriate during the pandemic.

Neutral treatment (baseline). The participants read a neutrally framed nature-related article. The text described a tern, a specific type of a bird. It outlined some details about the bird's physical appearance, geographical distribution, habitat, and breeding behavior. This article did not provide any information on the COVID-19 pandemic.

3.1.2 Sample and procedures

We conducted the experiment from May to June 2022 on Prolific. A total of 880 participants completed the experiment.[9] Five participants were excluded from the analysis, leaving a sample size of 875 participants (see Table 3.1).[10]

[9] The sample size was selected such that we have enough power to identify a treatment effect of 5 percentage points with a power of at least 80%. For power calculations we used the mean of sent fraction of endowment by the trustors (0.502) and the standard deviation (0.124) from Johnson and Mislin (2011). Power calculations were based on a two-tailed test. According to our preregistered power calculations, it would have been sufficient to have 92 trustors per treatment.

[10] Participants who did not provide a summary of the articles they had to read as a treatment were excluded from the analysis.

The recruitment was restricted to residents of the UK with a UK nationality. Approximately 50.5% of the participants were men; 49.3% were women; and 0.2% indicated their gender as "other." The mean age of the participants was 40 years. More detailed descriptive statistics of the participants as well as the balance checks are provided in Tables C1-C3 of Appendix C. We detected some imbalances in several socio-demographic characteristics (age and political orientation) across some experimental groups, indicating the need to control for these characteristics in the regression analysis.

Table 3.1. Participants and dates by treatment

Treatment	Number of participants			Date
	All	Trustors	Trustees	
Uncooperative narrative	220	109	111	May 30, 2022
Cooperative narrative	217	108	109	May 31, 2022
COVID-19 salience	218	109	109	June 14, 2022
Neutral	220	109	111	June 15, 2022

The participants were paid a participation fee of £1.5 (approximately $1.8), and, depending on their role and decisions in the experiment, they could receive an additional reward. It took an average of 16 min for the participants to complete the experiment, and the average pay amounted to £4.6 (approximately $5.6). The experiment was implemented using the oTree software (Chen et al., 2016).

To reduce concerns about the experimenter demand effect, we asked the participants to memorize a phone number within 30 seconds at the beginning of the experiment. The participants were requested to recall the phone number at a later stage of the experiment. This distraction task was intended to prevent the participants from identifying the true objectives of the experiment (Harrs et al., 2021). After the distraction task, the participants were exposed to one of the four articles (see subsection "3.1.1. Treatments"). They were asked to read and memorize it within 3 minutes. When the time ran out, the participants were automatically directed to the next page where they were asked to summarize the text within 3 minutes. This task was aimed at strengthening the manipulation and identifying the participants who did not read the article. All participants, that is, both the trustors and the trustees, were exposed to the same manipulation and participants had common knowledge about it.

After the manipulation, the participants were informed that they would be matched with another participant, with whom they would play a game. The participants were provided with the instructions of a slightly modified version of the trust game developed by Berg et al. (1995) and were asked to answer

three comprehension questions about the game (see Appendix C for detailed instructions of the experiment). Before the participants were matched to play the game, they were again reminded of the articles they read at the beginning of the experiment: They had to answer three true-or-false questions about the content of the articles.

The participants were then informed that they would play the game with an anonymous British national residing in the UK. They were randomly matched and played an incentivized trust game. The game was played by two people: player 1 (trustor) and player 2 (trustee). The participants were assigned to their roles randomly. At the start of the game, both players received an endowment of £2 (approximately $2.4) each. Thereafter, player 1 chose an amount (x) from his/her endowment to send to player 2. Player 1 was under no obligation to send anything and could keep the entire endowment to himself/herself ($0 \leq x \leq 2$). The amount player 1 decided to send was tripled by the researcher, and player 2 received $3x$. Player 2 chose an amount (y) to return to player 1 from the tripled amount and was under no obligation to return anything ($0 \leq y \leq 3x$). The final payoff of player 1 was $2 - x + y$, while that of player 2 was $2 + 3x - y$. The game was played once. The x amount was the behavioral measure of "trust" by player 1 in an anonymous player 2.

When the amount player 1 chose to send to player 2 was non-zero, we elicited the beliefs of player 1 about the trustworthiness of his/her partner, that is, player 2. To elicit accurate beliefs of trustworthiness, we used a simple incentivized interval method (Charness et al., 2021). We asked player 1 how much he/she expected player 2 to return to him/her. Player 1 was also informed that he/she would earn £0.5 (approximately $0.6) when his/her answer fell within a 10% interval around the actual amount returned by player 2. The participants were not informed about their earnings from the game and the belief elicitation procedure until the very end of the experiment.

The game and belief elicitation were followed with a questionnaire survey. Using the questionnaire, we elicited survey-based measures of social trust (Rosenberg, 1956)[11] and trust in the government. We also asked about the participants' risk attitudes (Dohmen et al., 2011). We then requested the participants to answer three questions about their own and their family's experiences with COVID-19 and regarding whether they were at a high risk

[11] Social trust refers to general trust in other people and is often also called "generalized trust." It is most often elicited by asking the Rosenberg (1956) question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"

of getting severely sick with COVID-19. Thereafter, we elicited health-related attitudes using two additional survey questions: We asked the participants whether they considered the COVID-19 pandemic one of the largest health emergencies in human history and whether they thought that vaccines were necessary to prevent the spread of infectious diseases. The questionnaire concluded with socio-demographic questions.

As the final part of the experiment, the participants were asked to read the articles again and indicate whether the information provided in the articles described cooperative behavior, uncooperative behavior, or neither during the COVID-19 pandemic in Britain.[12] We also asked whether the participants thought the information provided in the articles was accurate (Haaland et al., 2023). This final part of the experiment served as a manipulation check. We also included three attention checks in the experiment. The first attention check was provided at the very beginning of the experiment, that is, before the distraction task; the second, before the provision of the instructions of the trust game; and the third, after answering the comprehension questions about the game.

3.1.3 Hypotheses

Main hypotheses

We postulated that exposing individuals to information about the widespread non-compliance to pandemic health measures (uncooperative narratives) demonstrates violations of social norms, which might reduce people's beliefs of the trustworthiness of other people and consequently their trust in others (Banerjee, 2016; Iacono et al., 2021). Similarly, showing information that most people comply with social norms in a pandemic (cooperative narratives) might increase individuals' beliefs in other people's trustworthiness, leading to higher interpersonal trust. An alternative mechanism for the effect is that uncooperative narratives provide individuals with moral excuses to behave selfishly without compromising their social and/or self-image, while cooperative narratives increase the reputational benefits of being viewed by others or by themselves as having high moral values and thus increase the pressure to behave more pro-socially (Bénabou et al., 2018).

On the basis of these considerations, we derive the following hypotheses: **Hypothesis 1a.** Trustors exposed to the uncooperative narrative treatment will, on average, send less amount than will those exposed to the COVID-19

[12] Similar manipulation checks were provided by Marreiros et al. (2017).

salience treatment. **Hypothesis 1b.** Trustors exposed to the uncooperative narrative treatment will, on average, send less amount than will those exposed to the cooperative narrative treatment. **Hypothesis 1c.** Trustors exposed to the cooperative narrative treatment will, on average, send more amount than will those exposed to the COVID-19 salience treatment.

In response to the question of whether a pandemic itself increases or decreases interpersonal trust, there are arguments and evidence to suggest that it can go either way. Experiencing a pandemic may increase people's sense of belonging and cooperation (Thornhill and Fisher, 2014; Pyszczynski et al., 2021). Further, acts of generosity during the pandemic could improve people's beliefs about the trustworthiness of strangers, and the increased health risk could make people more dependent on others, which may increase their trust in other people (Yamagishi and Yamagishi, 1994; Yamagishi et al., 1998; Yamagishi, 2011; Gambetta and Morisi, 2022). Several studies have found that similar to some natural disasters (Skidmore and Toya, 2014; Veszteg et al., 2015; Cassar et al., 2017), the COVID-19 pandemic had a positive effect on self-reported trust in other people (Esaiasson et al., 2020; Aassve et al., 2022; Gambetta and Morisi, 2022).

However, priming individuals with the COVID-19 pandemic is expected to reduce their trust in other people. The viral transmission of a disease, such as COVID-19, reduces social interactions between people, which are essential for the ability to trust others (Putnam, 2000; Glanville et al., 2013). A pandemic also induces fear and anxiety (Torales et al., 2020), which can lead to lower judgments of trustworthiness of others (Olivera-La Rosa et al., 2020). A pandemic is a traumatic event (Bridgland et al., 2021; Sanchez-Gomez et al., 2021), and a recent traumatic experience is associated with lower self-reported trust in others (Alessina and La Ferrara, 2002). Aassve et al. (2021) showed that the Spanish flu pandemic had a negative effect on interpersonal trust. Similarly, several empirical studies have shown that in the aftermath of the COVID-19 pandemic, people trust others less than they did before the pandemic both in terms of experiment- (Li et al., 2021) and survey-based measures of trust (Iacono et al., 2021).

Against this backdrop of evidence, we formulate the following hypothesis: **Hypothesis 2.** Trustors exposed to the COVID-19 salience treatment will, on average, send less amount than will those exposed to the neutral treatment.

Additional hypotheses

Regarding the relationship between norm-based narratives and health-related attitudes, we expected that being exposed to uncooperative pandemic narratives might increase the perceived pandemic awareness and general support for vaccines. The logic is that providing instances of others violating pandemic norms and outlining the negative consequences of such behaviors induce guilt in people, which makes them more supportive of responsible health behaviors, including the support for vaccines (Xu and Guo, 2018; Nan et al., 2022). A negative message is expected to affect people's health attitudes more than a positive one because people tend to respond more strongly to negative information (Baumeister et al., 2001; Rozin and Royzman, 2001, potentially also during the COVID-19 pandemic (Bavel et al., 2020; Ruggeri et al., 2024). Hence, we test two additional hypotheses: **Hypothesis 3a.** Trustors exposed to the uncooperative narrative treatment will, on average, have greater pandemic emergency perceptions than will those exposed to the cooperative narrative treatment and neutral treatment. **Hypothesis 3b.** Trustors exposed to the uncooperative narrative treatment will, on average, have more favorable attitudes toward vaccination than will those exposed to the cooperative narrative treatment and neutral treatment.

3.2 Results

3.2.1 Manipulation check

To evaluate the effectiveness of the manipulations, we exploited the fact that at the end of the experiment, we asked the participants to indicate whether the information provided in the articles described cooperative behavior, uncooperative behavior, or neither during the COVID-19 pandemic in Britain. The effectiveness of the manipulations could also depend on whether the participants thought that the provided information was accurate. Thus, we also explored the responses to the question on the accuracy of the information provided in the articles (Haaland et al., 2023).

We found that almost 93% of the participants exposed to the uncooperative narrative treatment thought that the provided article described uncooperative behavior; more than 98% of the participants exposed to the cooperative narrative treatment considered the article as reflecting cooperative behavior; and more than 78% of the participants exposed to the COVID-19 salience treatment found that the provided article described neither cooperative nor uncooperative behavior. Thus, most participants' responses

corresponded to the intended priming by the articles. In addition, 88% of the participants exposed to the uncooperative narrative treatment, 92% of those exposed to the cooperative narrative treatment, more than 98% of those exposed to the COVID-19 salience treatment, and almost 96% of those exposed to the neutral treatment considered the information provided in the articles as accurate.

3.2.2 Main results

Hypothesis testing

We first tested Hypotheses 1a–1c. The trustors exposed to the uncooperative narrative treatment sent, on average, 50% of their endowment to the trustees. The trustors exposed to the COVID-19 salience treatment sent, on average, 49.5%, which was almost identical to the trust level among the trustors exposed to the uncooperative narrative treatment ($p = 0.916$).[13] Thus, we found no support for Hypothesis 1a. The trustors exposed to the cooperative narrative treatment sent, on average, 52.7%, which was slightly higher than the amount the trustors exposed to the uncooperative narrative treatment sent (50%). However, the difference in the average trust levels between the cooperative narrative and uncooperative narrative treatments was statistically insignificant ($p = 0.547$); thus, we found no support for Hypothesis 1b. The participants primed with the cooperative narrative were, on average, slightly more trusting (52.7%) than those who were reminded of the COVID-19 pandemic only (49.5%), but the difference was statistically insignificant ($p = 0.450$). Thus, we found no support for Hypothesis 1c.

Next, we tested whether the trustors exposed to the COVID-19 salience treatment trusted others less than did those exposed to the neutral treatment (Hypothesis 2). As shown in Fig 3.1, the trustors exposed to the COVID-19 salience treatment sent, on average, 49.5% of their endowment to the trustees, compared with 53% among the trustors exposed to the neutral treatment. The difference in the average trust level between the two treatments was not statistically significant ($p = 0.405$), and thus, we did not find support for Hypothesis 2.

Additionally, as an exploratory analysis, we tested for the equality of distributions of trust levels between different treatments. We did not find

[13] We conducted a variance-ratio test to assess the equality of variances for the fraction of endowment sent by trustors in different treatments. It failed to reject the hypothesis of the variances being equal. Therefore, for hypothesis testing in this subsection, we used two-sided t-tests, assuming equal variances.

evidence of a difference between the distributions (see Table C4 of Appendix C for more details). Graphs outlining the distributions of sent amounts by treatment are presented in Appendix C.

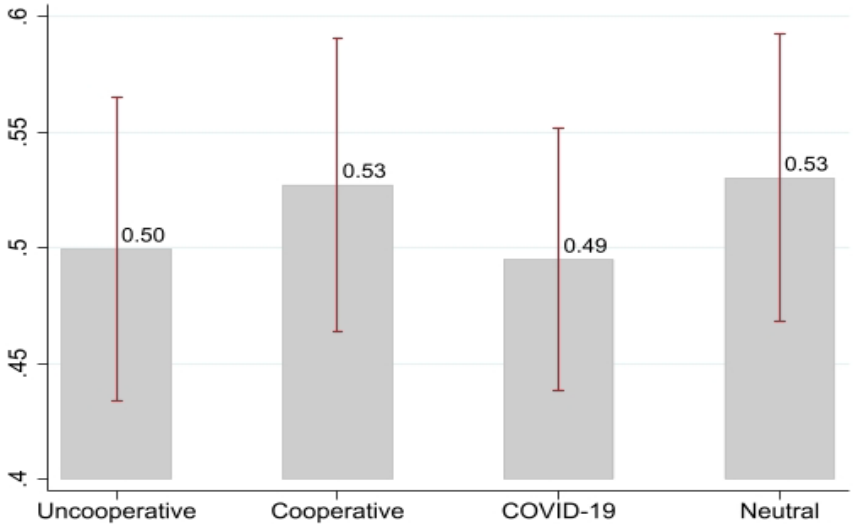


Fig 3.1. Average trust. The bars correspond to the average fraction of the endowment sent by the trustors to the trustees in the trust game across the treatments. The red vertical lines correspond to the confidence intervals of 95%. *N*=109 in the uncooperative narrative, COVID-19 salience, and the neutral treatments each, and *N*=108 in the cooperative narrative treatment.

OLS regression

We complemented the analysis on trust with a set of OLS regressions. The regression estimates are reported in Table 3.2. The dependent variable trust was measured on the basis of the fraction of the endowment sent by the trustors to the trustees in the trust game. In column 1 of Table 3.2, the results of the regression analysis wherein trust was simply regressed on three treatment dummies—uncooperative narrative, cooperative narrative, and COVID-19 salience—are shown. The neutral treatment was used as a reference. This specification backed up the previous analysis showing that the treatments had no significant effect on trust.

The results did not change when we controlled for the individuals' age, gender, education, and income (column 2). In column 3, we present the results when we additionally controlled for the individuals' political orientation; this factor did not affect the estimates of the treatment variables. In the final specification (column 4), we additionally controlled for the individuals' experience with COVID-19, that is, whether they or their family member had

been seriously sick with COVID-19 (sick with COVID-19 and family sick with COVID-19) and whether they were at a high risk of developing severe COVID-19 (at risk of COVID-19). The coefficients of the treatment variables remained insignificant at all conventional levels in all model specifications.

The OLS regression results, reported in columns 2–4, also showed that the women sent less money in the trust game than did the men, consistent with the findings by Buchan et al. (2008). We also found that the individuals with a disposable monthly income of £500–749 and the individuals with the highest disposable monthly income (>£2000) sent less money in the trust game. This result was unexpected, as income has been shown to be positively correlated with survey-based measures of trust (e.g., Alessina and La Ferrara, 2002).

The amount that the trustors could send to the trustees was restricted to range from £0 to £2 (or from 0 to 1 in terms of the fraction of the endowment); the choice was censored. Hence, we additionally performed Tobit regressions with trust as the dependent variable. The results of the Tobit regressions, which are reported in Table C5 of Appendix C, were in line with the results of the OLS regressions presented in Table 3.2. The results of the OLS regressions were easier to interpret; thus, we referred to them as our main findings for the variable trust[14].

We also conducted regression analyses using trustworthiness beliefs, trustworthiness, social trust, and trust in the government as additional dependent variables. The variable trustworthiness beliefs was constructed using the responses by the trustors to the incentivized question "How much do you expect to receive from player 2?," which were expressed as the fraction of the amount sent by the trustors to the trustees. The variable trustworthiness was measured on the basis of the amount returned by the trustee to the trustor, in relation to the received amount by the trustee. The variable social trust was constructed using responses to the following survey question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Possible answers were "most people can be trusted" and "one can't be too careful." To construct the variable trust in the government, we used the responses (on an 11-point Likert scale) to the following survey question: "On a scale from 0 to 10, how much do you personally trust your country's government?" We did not find significant treatment effects for any of the additional dependent variables (for more details see Tables C8-C10 of Appendix C).

[14] We ran additional regressions to test if the null result was not driven by observations from individuals who did not respond to the experimental manipulations as intended. The results from these additional regressions, presented in Table C6 of Appendix C, were largely in line with those reported in Table 2. This showed that the null results were not driven by observations from individuals who found the articles inaccurate or those who misperceived the narratives.

Table 3.2. Regressions on trust

Trust	(1)	(2)	(3)	(4)
Uncooperative narrative	-0.031	-0.016	-0.018	-0.019
	(0.046)	(0.046)	(0.045)	(0.046)
Cooperative narrative	-0.003	0.011	0.005	0.008
	(0.045)	(0.045)	(0.045)	(0.046)
COVID-19 salience	-0.035	-0.018	-0.019	-0.018
	(0.042)	(0.042)	(0.043)	(0.042)
Age		-0.000	0.001	0.000
		(0.001)	(0.001)	(0.001)
Female gender		-0.063**	-0.057*	-0.057*
		(0.031)	(0.031)	(0.031)
University education		0.049	0.044	0.040
		(0.036)	(0.037)	(0.037)
Income: £500–749		-0.116**	-0.112**	-0.100*
		(0.052)	(0.052)	(0.053)
Income: £750–999		-0.021	-0.020	-0.017
		(0.054)	(0.055)	(0.054)
Income: £1000–1249		-0.078	-0.067	-0.061
		(0.059)	(0.059)	(0.061)
Income: £1250–1499		-0.050	-0.043	-0.034
		(0.064)	(0.062)	(0.062)
Income: £1500–1749		0.003	-0.000	0.015
		(0.064)	(0.067)	(0.069)
Income: £1750–1999		-0.098	-0.107	-0.117*
		(0.069)	(0.070)	(0.070)
Income: >£2000		-0.140**	-0.132**	-0.132**
		(0.055)	(0.056)	(0.056)
Political party: Conservative			-0.027	-0.029
			(0.048)	(0.048)
Political party: Lib Dem			0.018	0.026
			(0.061)	(0.060)
Political party: Green			0.093*	0.097*
			(0.055)	(0.055)
Political party: Scottish			-0.134*	-0.134*
			(0.072)	(0.070)
Political party: Reform UK			-0.075	-0.070
			(0.099)	(0.094)
Political party: Other			0.119	0.122
			(0.133)	(0.139)
Political party: None			-0.048	-0.046
			(0.047)	(0.047)
Sick with COVID-19: Yes				0.097
				(0.089)
Family sick with COVID-19: Yes				-0.015
				(0.044)
At risk of COVID-19: Yes				0.084*

Trust	(1)	(2)	(3)	(4)
				(0.046)
At risk of COVID-19: Do not know				0.042
				(0.069)
Constant	0.530***	0.574***	0.556***	0.553***
	(0.031)	(0.070)	(0.072)	(0.072)
Observations	435	435	435	435
R-squared	0.002	0.037	0.058	0.070

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable trust is measured on the basis of the fraction of the endowment sent by the trustor to the trustee in the trust game. The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

3.2.3 Additional analyses

Hypothesis testing

We also tested how the pandemic narratives affected health-related attitudes. We first tested whether the trustors exposed to the uncooperative narrative treatment perceived the pandemic as a greater emergency than did those exposed to the neutral and cooperative narrative treatments (Hypothesis 3a). The attitudes toward the pandemic emergency (pandemic emergency attitudes) were measured using the participants' agreement (on an 11-point scale) to the following statement: "The COVID-19 pandemic has been one of the greatest health emergencies in human history." As shown in Fig 3.2, the agreement of the trustors exposed to the uncooperative narrative treatment with the pandemic emergency statement averaged 7.6 points compared with 6.8 points among the trustors exposed to the neutral treatment; the difference was significant ($p = 0.029$).[15] Meanwhile, the agreement of the trustors exposed to the cooperative narrative treatment averaged 6.9 points (Fig 3.2), and the difference between the uncooperative narrative and cooperative

[15] We conducted the variance-ratio tests to assess the equality of variances for pandemic emergency and vaccine attitudes across different treatments. It rejected the hypotheses of the variances being equal. Therefore, for hypothesis testing in this subsection, we used two-sided t-tests, assuming unequal variances.

narrative treatments was significant (p = 0.050). Thus, we found support for Hypothesis 3a.

Next, we tested whether the uncooperative narrative had a positive effect on attitudes toward vaccines (Hypothesis 3b). We measured the attitudes toward vaccines (vaccine attitudes) by asking the participants to state their agreement (on an 11-point scale) to the following statement: "In general, vaccines are necessary to prevent the spread of infectious diseases." The trustors exposed to the uncooperative narrative treatment reported vaccine attitudes that were, on average, 0.8 points higher than those among the trustors exposed to the neutral treatment (9.1 vs. 8.3 points, respectively, Fig 3.3), and this difference was significant (p = 0.003). In addition, the trustors exposed to the uncooperative narrative treatment reported more pro-vaccine attitudes (9.1 points) than did the trustors exposed to the cooperative narrative treatment (8.5 points), and the difference was significant (p = 0.018). Thus, we found support for Hypothesis 3b.

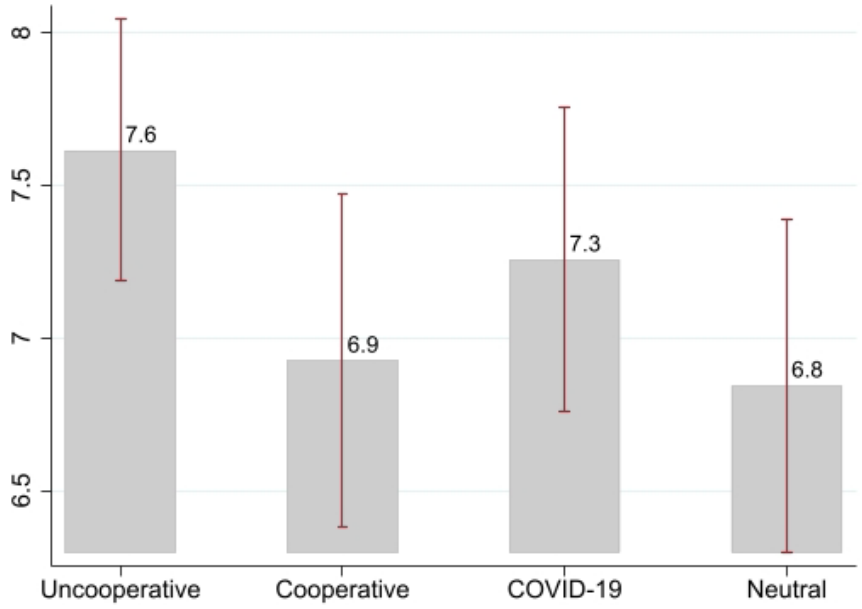


Fig 3.2. **Average pandemic emergency attitudes.** The bars correspond to the average pandemic emergency attitudes across the treatments. Pandemic emergency attitudes are measured using the participants' agreement to the statement "The COVID-19 pandemic has been one of the greatest health emergencies in human history" on an 11-point Likert scale, wherein 0 indicates "strongly disagree," and 10 indicates "strongly agree." The red vertical lines correspond to the confidence intervals. N=109 in the uncooperative narrative, COVID-19 salience, and the neutral treatments each, and N=108 in the cooperative narrative treatment.

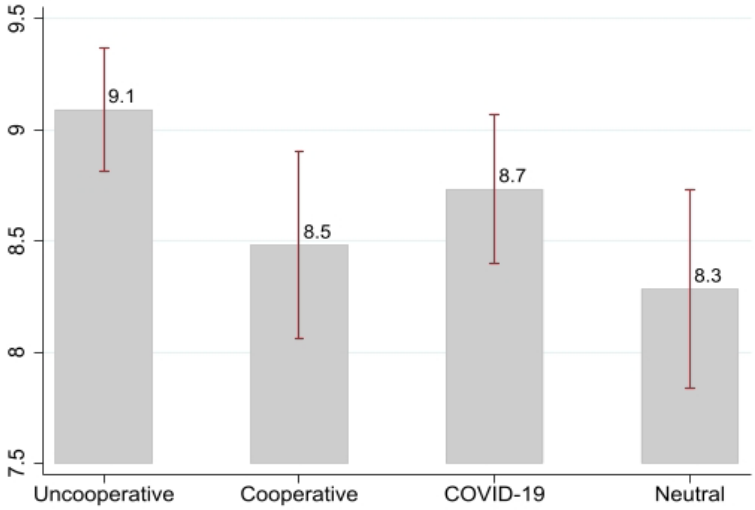


Fig 3.3. Average vaccine attitudes. The bars correspond to the average vaccine attitudes across the treatments. Vaccine attitudes are measured using participants' agreement to the statement "In general, vaccines are necessary to prevent the spread of infectious diseases" on an 11-point Likert scale, where 0 means "disagree strongly", and 10 means "agree strongly." The red vertical lines correspond to the confidence intervals. *N*=109 in the uncooperative narrative, COVID-19 salience, and the neutral treatments each, and *N*=108 in the cooperative narrative treatment.

OLS regression

To obtain additional insights into the factors that may affect the individuals' attitudes toward the pandemic and vaccination, we performed two sets of OLS regressions. Table 3.3 reports the results of the regression analysis of pandemic emergency attitudes in relation to the treatment variables as well as some individual characteristics. Table 3.4 presents the results of the regression analysis with vaccination attitudes as the dependent variable. In Tables 3.3 and 3.4, column 1 displays the results wherein the dependent variable was regressed on three treatment dummies (uncooperative narrative, cooperative narrative, and COVID-19 salience), while columns 2–4 present the results with additional model specifications.

Initially, we analyzed the regression results on pandemic emergency attitudes reported in Table 3.3. The coefficient for the variable uncooperative narrative remained positive and significant in all model specifications reported in columns 1–4. This confirmed the previous finding that on average, the uncooperative narrative treatment increased the pandemic awareness. No such effect was found in the other treatment variables, as the coefficients for cooperative narrative and COVID-19 salience remained insignificant at all conventional levels even when we controlled for individual characteristics (columns 2–4).

Table 3.3. Regressions on pandemic emergency attitudes

Pandemic emergency attitudes	(1)	(2)	(3)	(4)
Uncooperative narrative	0.771**	0.751**	0.703**	0.660*
	(0.351)	(0.358)	(0.352)	(0.359)
Cooperative narrative	0.082	0.116	0.170	0.158
	(0.389)	(0.387)	(0.377)	(0.379)
COVID-19 salience	0.413	0.314	0.413	0.378
	(0.373)	(0.379)	(0.372)	(0.378)
Age		0.014	0.027**	0.026**
		(0.011)	(0.011)	(0.011)
Female gender		0.406	0.293	0.303
		(0.265)	(0.259)	(0.260)
University education		0.371	0.159	0.153
		(0.305)	(0.297)	(0.300)
Income: £500–749		0.033	0.151	0.221
		(0.404)	(0.354)	(0.362)
Income: £750–999		0.040	0.029	0.058
		(0.477)	(0.494)	(0.497)
Income: £1000–1249		-0.562	-0.445	-0.424
		(0.459)	(0.454)	(0.464)
Income: £1250–1499		0.268	0.248	0.290
		(0.528)	(0.490)	(0.492)
Income: £1500–1749		-0.199	-0.248	-0.182
		(0.481)	(0.507)	(0.526)
Income: £1750–1999		-0.491	-0.696	-0.662
		(0.687)	(0.668)	(0.672)
Income: >£2000		0.187	0.260	0.293
		(0.453)	(0.445)	(0.445)
Political party: Conservative			-1.053***	-1.044***
			(0.379)	(0.383)
Political party: Lib Dem			-0.480	-0.494
			(0.441)	(0.449)
Political party: Green			-0.423	-0.436
			(0.408)	(0.411)
Political party: Scottish			-0.282	-0.282
			(0.585)	(0.578)
Political party: Reform UK			-3.997***	-3.990***
			(1.285)	(1.281)
Political party: Other			-0.148	-0.101
			(0.611)	(0.640)
Political party: None			-1.489***	-1.488***
			(0.395)	(0.404)
Sick with COVID-19: Yes				-0.050
				(0.590)
Family sick with COVID-19: Yes				0.375
				(0.371)
At risk of COVID-19: Yes				0.192
				(0.363)

Pandemic emergency attitudes	(1)	(2)	(3)	(4)
At risk of COVID-19: Do not know				0.138
				(0.510)
Constant	6.844***	5.887***	6.182***	6.121***
	(0.276)	(0.616)	(0.593)	(0.593)
Observations	435	435	435	435
R-squared	0.013	0.032	0.105	0.108

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable pandemic emergency attitudes is measured using the participants' agreement to the statement "The COVID-19 pandemic has been one of the greatest health emergencies in human history" on an 11-point Likert scale, wherein 0 indicates "strongly disagree," and 10 indicates "strongly agree." The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

We also found that the political orientation was an important predictor of pandemic emergency attitudes. The individuals who identified most with the Conservative Party or the Reform UK (former Brexit Party) and those who did not identify with any party at all (political party: none) had milder views toward the pandemic as a health emergency.

Next, we analyzed the regression results on vaccine attitudes presented in Table 3.4. The regression analysis confirmed the results obtained from the hypothesis testing: The participants exposed to the uncooperative narrative treatment had, on average, significantly more favorable attitudes toward vaccines than those exposed to the baseline treatment. The coefficient for uncooperative narrative was significant across all model specifications (columns 1–4). The coefficients for cooperative narrative and COVID-19 salience were insignificant across all specifications.

The coefficient estimates of the variables representing the individual characteristics provided some additional interesting insights. We found that the older individuals were more pro-vaccine; although the coefficient for age was relatively small. The individuals with at least some university education also showed attitudes that were more favorable toward vaccines. The women were less in favor of vaccines. However, the coefficient for female gender was significant only in the specifications reported in columns 3 and 4; thus, the result should be treated with caution. Also, individuals who were at a high risk of developing severe COVID-19 were more in favor of vaccines.

Table 3.4. Regressions on vaccine attitudes

Vaccine attitudes	(1)	(2)	(3)	(4)
Uncooperative narrative	0.807***	0.772***	0.806***	0.825***
	(0.265)	(0.257)	(0.258)	(0.261)
Cooperative narrative	0.197	0.239	0.199	0.229
	(0.311)	(0.304)	(0.292)	(0.293)
COVID-19 salience	0.450	0.390	0.390	0.404
	(0.282)	(0.278)	(0.274)	(0.280)
Age		0.015*	0.027***	0.024***
		(0.008)	(0.008)	(0.008)
Female gender		-0.312	-0.405**	-0.399**
		(0.195)	(0.186)	(0.186)
University education		0.590***	0.438**	0.410*
		(0.225)	(0.212)	(0.213)
Income: £500–749		0.138	0.375	0.396
		(0.300)	(0.244)	(0.248)
Income: £750–999		-0.119	-0.087	-0.058
		(0.387)	(0.398)	(0.405)
Income: £1000–1249		-0.237	-0.131	-0.109
		(0.323)	(0.313)	(0.318)
Income: £1250–1499		-0.396	-0.320	-0.310
		(0.451)	(0.457)	(0.454)
Income: £1500–1749		-0.042	-0.070	-0.010
		(0.392)	(0.389)	(0.399)
Income: £1750–1999		-0.651	-0.737*	-0.823*
		(0.474)	(0.447)	(0.457)
Income: >£2000		-0.114	-0.074	-0.098
		(0.272)	(0.260)	(0.263)
Political party: Conservative			-0.611**	-0.614**
			(0.302)	(0.305)
Political party: Lib Dem			-0.062	-0.020
			(0.282)	(0.289)
Political party: Green			0.457	0.472
			(0.311)	(0.313)
Political party: Scottish			-0.651	-0.657
			(0.597)	(0.598)
Political party: Reform UK			-4.348***	-4.271***
			(1.053)	(1.038)
Political party: Other			-1.093***	-1.034***
			(0.375)	(0.363)
Political party: None			-0.441*	-0.405
			(0.248)	(0.253)
Sick with COVID-19: Yes				0.123
				(0.358)
Family sick with COVID-19: Yes				-0.082
				(0.314)
At risk of COVID-19: Yes				0.475**
				(0.241)

Vaccine attitudes	(1)	(2)	(3)	(4)
At risk of COVID-19: Do not know				-0.038
				(0.371)
Constant	8.284***	7.528***	7.429***	7.457***
	(0.225)	(0.473)	(0.459)	(0.461)
Observations	435	435	435	435
R-squared	0.023	0.060	0.166	0.173

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable vaccine attitudes is measured using the participants' agreement to the statement "In general, vaccines are necessary to prevent the spread of infectious diseases" on an 11-point Likert scale, wherein 0 indicates "strongly disagree," and 10 indicates "strongly agree." The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Political orientation also played a role in determining vaccine attitudes. Similar to the findings on attitudes toward the pandemic, the individuals who identified with the Conservative and Reform UK Parties generally had less favorable attitudes toward vaccines. The negative coefficient for political party: conservative was significant at the 5% significance level, while that for political party: reform UK was significant at the 1% significance level, as shown in columns 3 and 4.

3.3 Concluding remarks

In this study, we collected experimental evidence during the COVID-19 pandemic in the UK to explore how the health crisis and pandemic narratives, which outlined how the society behaved during the pandemic in terms of compliance to pandemic norms, affected trust in the trust game (Berg et al., 1995). We also analyzed how such norm-based pandemic narratives affected health attitudes, in particular, attitudes toward the pandemic emergency and vaccination in general.

First, we found that providing individuals with narratives outlining behaviors that support or violate pandemic social norms does not have a significant effect on trusting behavior. This finding does not support the results by Iacono et al. (2021) that after the first wave of the pandemic, survey-based measure of trust declined more among individuals who saw others as violating pandemic norms. The null results obtained in our study could be explained by several reasons. First, by the timing of the experiment; norm priming toward

the end of the pandemic could be less effective than that in the earlier stages, as people have potentially already formed their own perceptions about others' behavior during the pandemic. Another potential explanation is that exposure to a narrative outlining uncooperative behaviors may, for some individuals, lead to increased adherence to the norm of cooperation and thus higher trust, resulting in an overall null result.

Second, we showed that priming individuals with the COVID-19 pandemic does not affect trust in the trust game. This result is in line with the finding by Aksoy et al. (2021), who used a priming technique to study the effects of the COVID-19 pandemic on experiment-based trust measures. This finding provides support for the theory claiming that trust is an inert and hardly malleable cultural construct (Bisin and Verdier, 2001; Guiso et al., 2008; Tabellini, 2008). However, one of the potential reasons for the null result could also be that changes in trust have been realized over the course of the pandemic, and thus, the primes may be less effective at inducing changes in trust. For example, Li et al. (2021) conducted a trust game experiment in China before and after the start of the COVID-19 pandemic and found that the health crisis significantly reduced trust, which remained low throughout the observation period that lasted for almost 1 year. Although, Casoria et al. (2023) showed that in France trust recovered gradually to its initial level after the lifting of the first-wave lockdown measures. In general, the choice of the empirical strategy as well as the timing of the study and geographical location may be important factors contributing to the size as well as to the direction of the effects of the COVID-19 pandemic on trust. A panel study involving many countries that track trust over the course of the whole pandemic could help settle this debate.

Third, we found that uncooperative narratives are effective in altering people's attitudes toward the pandemic as well as vaccination. That is, emphasizing society's non-compliance to pandemic norms and outlining the negative consequences of such behaviors on others induces people to view the pandemic as a greater health emergency and to be more pro-vaccine in general. This confirms findings in the literature showing that people tend to respond more strongly to negative stimuli (Baumeister et al., 2001; Rozin and Royzman, 2001). Also, it supports studies finding positive effects of guilt appeals on health-related attitudes, intentions, and actual behaviors (Xu and Guo, 2017; Nan et al., 2022). We showed that uncooperative narratives do not result in an immediate negative effect on trust, which provides some justification in applying this type of negatively worded guilt-inducing narratives to shape individuals' health-related attitudes. This finding can help

guide policymakers and communicators in designing more effective messages to alter people's attitudes during the current pandemic as well as in future crises. However, in this study we analyzed only health attitudes and future studies could explore if norm-based narratives can also affect actual health behaviors.

Finally, we noted that health attitudes are related to some individual characteristics. We found that age, education, and gender are important predictors of vaccine attitudes, which is in line with previous research on COVID-19 vaccination intentions (Robinson et al., 2021). Another important factor associated with health attitudes is political orientation. Individuals who identify most with the Conservative Party and the Reform UK (former Brexit Party) view the pandemic as less of a concern and are more skeptical of vaccines. Contrary to our finding, a report on COVID-19 vaccination intentions showed that during the COVID-19 pandemic, UK Conservative Party voters were more pro-vaccine (Klymak and Vlandas, 2022). However, our result confirms findings from other countries showing that right-leaning individuals tend to have lower anxiety levels toward the COVID-19 pandemic (Rigoli, 2020) and are less in favor of vaccines (Jones and McDermott, 2022; Knobel et al., 2022; Winter et al., 2022; Wollebæk et al., 2022). This finding is also related to the report by Phalippou and Wu (2023) showing a negative relationship between the 2016 Brexit vote and COVID-19 vaccination rates and a positive association with COVID-19 infection and death rates, since the majority of the Conservative Party and former Brexit Party voters who participated in the Brexit referendum casted a "leave" vote (Moore, 2016). This result could be related to the greater beliefs in conspiracies of right-leaning voters (Jolley et al., 2022; Winter et al., 2022). In general, the results show that political divide plays an important role in the health domain, and policymakers should take this into account when designing vaccination campaigns as well as health-related incentives.

There are several limitations to our study. Firstly, we did not collect information on individuals' own normative views related to the pandemic and the extent to which they identify with norm violations, which could be important for determining the effect of the narratives. However, in the regression analyses, we controlled for individuals' political identification, which should at least partially capture their own normative views about the pandemic. Secondly, in the additional analysis we rely on self-reported health attitudes, which may diverge from actual health behaviors.

CONCLUSIONS

This dissertation examines the complex relationship between trust, social norms, and collective action problems, particularly focusing on the COVID-19 pandemic and climate change. It investigates how different types of trust and norm-based interventions can influence individual behavior concerning large-scale collective action problems. By studying these dynamics in different settings—vaccination willingness in Lithuania, climate action in the US, and trusting behavior in the UK—the findings provide a clearer understanding of the role of social capital in addressing current global challenges, and how these challenges may influence the development of social capital.

The study described in Chapter 1, based on data from a representative survey conducted during the peak of the COVID-19 pandemic in Lithuania, revealed that higher trust in government, science, and pharmaceutical companies was associated with greater willingness to get vaccinated against COVID-19. Specifically, an increase in trust in these institutions was associated with a higher probability of individuals strongly agreeing to be vaccinated. Trust in strangers, healthcare, or the media did not show a significant association with willingness to be vaccinated. This highlights the crucial role of institutional trust in encouraging cooperative health behavior during a pandemic.

In the US, the experimental data analysis, presented in Chapter 2, demonstrated that correcting misperceptions about public support for carbon taxation can have different effects on private and public climate actions. The intervention had a marginal negative effect on private climate action—leading to a reduction in the average donation to a climate organization among those who overestimated public support, providing evidence for the boomerang effect. However, the misperception-correcting information had a positive effect on public climate action by reducing the average minimum reward accepted for participating in climate policy discussions with peers. Moreover, this positive effect on public climate action was particularly pronounced among Republicans. The mixed effect of informational interventions underscores the complexity of such interventions and the necessity of considering the context and type of climate action being targeted.

In Chapter 3, the study based on experimental data from the UK found that norm-based narratives, whether emphasizing cooperative or uncooperative behaviors, did not significantly alter the average trusting behavior of the British during the later stages of the COVID-19 pandemic.

Additionally, priming individuals with the COVID-19 pandemic did not significantly affect trusting behavior. These findings provide empirical support for the theory positing that trust is an inert and hardly malleable cultural construct. However, the impact of the pandemic and norm-based communication on trust may also be context-dependent, influenced by factors such as the pandemic stage and prevailing social conditions. Additional findings from the analysis showed that uncooperative narratives were more effective than cooperative ones in changing people's attitudes toward the pandemic and vaccination.

The findings from this research have important policy implications for promoting responsible individual behavior in collective action problems. Public health campaigns should prioritize building and maintaining trust in key institutions, as suggested by the positive association between institutional trust and willingness to vaccinate. Transparent communication and consistent messaging from trusted sources could limit free-riding and increase public compliance with health measures. The findings on climate action suggest that correcting misperceptions about social norms can mobilize public climate action but may also demotivate private action if not implemented carefully. Therefore, policymakers and climate advocates should exercise caution when designing informational interventions and consider targeted communication to prevent boomerang effects on climate action among certain groups. The discovery that norm-based communication does not have an immediate negative effect on trust supports the use of such communication methods in shaping individuals' health attitudes and behaviors. This insight can help guide policymakers and communicators in crafting more effective messages to influence public attitudes during health crises, without fearing potential negative effects on trust.

Limitation and direction for future research

While this dissertation addresses relevant research questions and both fills clear gaps and contributes to the literature, several limitations remain. First, in Chapter 1, individuals' concerns about the safety, side effects, and effectiveness of the COVID-19 vaccine were not controlled for, which may significantly influence vaccination decisions. The estimates of the trust variables may partially capture the effects of these concerns. Additionally, the study relies on self-reported trust and vaccination intentions, which may be subject to social desirability bias. For example, respondents might report higher than actual levels of trust or willingness to be vaccinated to be viewed

favorably by others. Moreover, the evidence on vaccine acceptance is suggestive, and causal inferences cannot be drawn from it. Future studies could use experimental measures of trust and actual vaccination behavior to establish causal relationships between different forms of trust and vaccination decisions. The relationship between trust and vaccination may not be static, thus tracking it throughout stages of the pandemic could also provide important insights.

Further, the analysis in Chapter 2 finds that while Democrats' and Republicans' willingness to engage in climate policy discussions responds differently to the information treatment, this research cannot provide a clear explanation of why this is the case. Hence, future research could explore the factors driving this heterogeneity, possibly by considering the nature, intentions, and actual outcomes of climate policy discussions. Furthermore, larger representative samples of the US population could provide additional insights into groups that are underrepresented in my sample, such as individuals with lower levels of education or those with different political views such as Independents (who were excluded from the sample). Future research could also explore strategies to limit the boomerang effects in climate action that emerge when correcting for misperceptions.

In Chapter 3, norm-based narratives and the pandemic salience were not found to affect trust. It could be the case that the effect of the pandemic and related narratives may have already been realized over the course of the pandemic, making the treatments less effective at the end of the pandemic. Moreover, there may be large heterogeneity in treatment effects across countries, since pandemic communication and the stringency of pandemic measures have varied across geographical locations, thereby limiting the generalizability of the results. A cross-country panel study that tracks trust throughout the whole pandemic could help address these limitations. Another limitation is that the study did not collect information on individuals' own normative views about the pandemic and the extent to which they identified with norm violations, which could be significant in determining the effect of the narratives. Future studies, possibly involving larger samples, could examine differences in the effect of norm-based communication on trust by individual views of the norm.

In summary, while this dissertation provides valuable insights into the role of trust and social norms in collective action problems, addressing these limitations in future research could further enhance our understanding of these complex dynamics.

BIBLIOGRAPHY

1. Aassve, A., Alfani, G., Gandolfi, F., & Le Moglie, M. (2021). Epidemics and trust: The case of the Spanish flu. Health Economics, 30(4), 840-857. https://doi.org/10.1002/hec.4218
2. Aassve, A., Capezzone, T., Cavalli, N., Conzo, P., & Peng, C. (2022). Trust in the time of coronavirus: Longitudinal evidence from the United States. SocArXiv. https://doi.org/10.31235/osf.io/vwzk7
3. Adam, D. (2022). The pandemic's true death toll: millions more than official counts. Nature, 601(7893), 312-315. https://doi.org/10.1038/d41586-022-00104-8
4. Aksoy, B., Harwell, H., Kovaliukaite, A., & Eckel, C. (2018). Measuring trust: A reinvestigation. Southern Economic Journal, 84(4), 992-1000. https://doi.org/10.1002/soej.12259
5. Aksoy, C., Cabrales, A., Dolls, M., Durante, R., & Windsteiger, L. (2021). Calamities, common interests, shared identity: What shapes social cohesion in Europe? CESifo Working Paper No. 9112. http://dx.doi.org/10.2139/ssrn.3863815
6. Alessina, A., & La Ferrara, E. (2002). Who trusts others? Journal of Public Economics, 85, 207–234. https://doi.org/10.1016/S0047-2727(01)00084-6
7. Algan, Y., & Cahuc, P. (2010). Inherited trust and growth. American Economic Review, 100, 2060–2092. https://doi.org/10.1257/aer.100.5.2060
8. Algan, Y., Cohen, D., Davoine, E., Foucault, M., & Stantcheva, S. (2021). Trust in scientists in times of pandemic: Panel evidence from 12 countries. Proceedings of the National Academy of Sciences, 118(40). https://doi.org/10.1073/pnas.2108576118
9. Algan, Y., Guriev, S., Papaioannou, E., & Passari, E. (2017). The European Trust Crisis and the Rise of Populism. Brookings Papers on Economic Activity 2017(2), 309-400. https://doi.org/10.1353/eca.2017.0015
10. Allington, D., McAndrew, S., Moxham-Hall, V., & Duffy, B. (2021). Coronavirus conspiracy suspicions, general vaccine attitudes, trust and coronavirus information source as predictors of vaccine hesitancy among UK residents during the COVID-19 pandemic. Psychological Medicine. Advance online publication. https://doi.org/10.1017/S0033291721001434
11. Ananyev, M., & Guriev, S. (2019). Effect of income on trust: Evidence from the 2009 economic crisis in Russia. The Economic Journal, 129(619), 1082-1118. https://doi.org/10.1111/ecoj.12612

12. Anderson, L. R., & Mellor, J. M. (2008). Predicting health behaviors with an experimental measure of risk preference. Journal of Health Economics, 27(5), 1260-1274. https://doi.org/10.1016/j.jhealeco.2008.05.011
13. Andre, P., Boneva, T., Chopra, F., & Falk, A. (2024). Misperceived social norms and willingness to act against climate change. https://dx.doi.org/10.2139/ssrn.4740469
14. Antoci, A., Bonelli, L., Paglieri, F., Reggiani, T., & Sabatini, F. (2019). Civility and trust in social media. Journal of Economic Behavior & Organization, 160, 83–99. https://doi.org/10.1016/j.jebo.2019.02.026
15. Bäck, M., & Christensen, H. S. (2016). When trust matters—a multilevel analysis of the effect of generalized trust on political participation in 25 European democracies. Journal of Civil Society, 12(2), 178-197. https://doi.org/10.1080/17448689.2016.1176730
16. Ball, P. (2021). What the lightning-fast quest for Covid vaccines means for other diseases. Nature, 589, 16-18. https://doi.org/10.1038/d41586-020-03626-1
17. Banerjee, R. (2016). Corruption, norm violation and decay in social capital. Journal of Public Economics, 137, 14-27. https://doi.org/10.1016/j.jpubeco.2016.03.007
18. Barrios, J. M., Benmelech, E., Hochberg, Y. V., Sapienza, P., & Zingales, L. (2021). Civic capital and social distancing during the Covid-19 pandemic. Journal of Public Economics, 193, 104310. https://doi.org/10.1016/j.jpubeco.2020.104310
19. Bartscher, A. K., Seitz, S., Siegloch, S., Slotwinski, M., & Wehrhöfer, N. (2021). Social capital and the spread of Covid-19: Insights from European countries. Journal of Health Economics, 80, 102531. https://doi.org/10.1016/j.jhealeco.2021.102531
20. Bass, S. B., Kelly, P. J., Hoadley, A., Arroyo Lloret, A., & Organtini, T. (2022). Mapping perceptual differences to understand COVID-19 beliefs in those with vaccine hesitancy. Journal of Health Communication, 1-3. https://doi.org/10.1080/10810730.2022.2042627
21. Bauch, C. T., Galvani, A. P., & Earn, D. J. (2003). Group interest versus self-interest in smallpox vaccination policy. Proceedings of the National Academy of Sciences, 100(18), 10564-10567. https://doi.org/10.1073/pnas.173132410
22. Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. Review of General Psychology, 5, 323–370. https://doi.org/10.1037/1089-2680.5.4.323
23. Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J.

N., & Drury, J. (2020). Using social and behavioural science to support COVID-19 pandemic response. Nature Human Behaviour, 4, 460-471. https://doi.org/10.1038/s41562-020-0884-z

24. BBC. (2021, April 23). Covid: man arrested after infecting 22 people in Majorca. Available at: https://www.bbc.com/news/world-europe-56874018 [accessed on 2024, April 24].
25. Becker, M. H. (1974). The health belief model and personal health behavior. Health Education Monographs, 2, 324-473.
26. Bénabou, R., Falk, A., & Tirole, J. (2018). Narratives, imperatives, and moral reasoning (No. w24798). National Bureau of Economic Research. https://doi.org/10.3386/w24798
27. Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. Games and Economic Behavior, 10(1), 122-142. https://doi.org/10.1006/game.1995.1027
28. Bergmann, M., Hannemann, T., Bethmann, A., & Schumacher, A. (2021, June 10). Vaccination willingness in Europe: Who are the unvaccinated? SHARE: Survey of Health, Ageing and Retirement in Europe. Available from: http://www.share-project.org/home0/news/article/vaccination-willingness-in-europe-who-are-the-unvaccinated.html.
29. Berkowitz, A. (2003). Applications of social norms theory to other health and social justice issues. In H. W. Perkins (Ed.), The social norms approach to preventing school and college age substance abuse: A handbook for educators, counselors, and clinicians (pp. 259–279). San Francisco, CA: Jossey-Bass.
30. Bisin, A., & Verdier, T. (2001). The economics of cultural transmission and the dynamics of preferences. Journal of Economic Theory, 97, 298-319. https://doi.org/10.1006/jeth.2000.2678
31. Bloom, N., Sadun, R., & Van Reenen, J. (2012). The organization of firms across countries. The Quarterly Journal of Economics, 127, 1663-1705. https://doi.org/10.1093/qje/qje029
32. Blouin, A., & Mukand, S. W. (2019). Erasing ethnicity? Propaganda, nation building, and identity in Rwanda. Journal of Political Economy, 127, 1008-1062. https://doi.org/10.1086/701441
33. Borgonovi, F., & Andrieu, E. (2020). Bowling together by bowling alone: Social capital and Covid-19. Social Science & Medicine, 265, 113501. https://doi.org/10.1016/j.socscimed.2020.113501
34. Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), Handbook of theory and research for the sociology of education (pp. 241-258).

35. Bridgland, V. M., Moeck, E. K., Green, D. M., Swain, T. L., Nayda, D. M., Matson, L. A., Hutchison, N. P., & Takarangi, M. K. (2021). Why the COVID-19 pandemic is a traumatic stressor. PLoS One, 16, e0240146. https://doi.org/10.1371/journal.pone.0240146
36. Brodeur, A., Grigoryeva, I., & Kattan, L. (2021). Stay-at-home orders, social distancing, and trust. Journal of Population Economics, 34(4), 1321-1354. https://doi.org/10.1007/s00148-021-00848-z
37. Bruner, J. (1991). The narrative construction of reality. Critical Inquiry, 18, 1-21. https://doi.org/10.1086/448619
38. Buchan, N. R., Croson, R. T., & Solnick, S. (2008). Trust and gender: an examination of behavior and beliefs in the investment game. Journal of Economic Behavior & Organization, 68, 466-476. https://doi.org/10.1016/j.jebo.2007.10.006
39. Burstein, P. (2003). The impact of public opinion on public policy: A review and an agenda. Political research quarterly, 56(1), 29-40. https://doi.org/10.1177/106591290305600103
40. Bursztyn, L., González, A. L., & Yanagizawa-Drott, D. (2020). Misperceived social norms: Women working outside the home in Saudi Arabia. American economic review, 110(10), 2997-3029. https://doi.org/10.1257/aer.20180975
41. Capraro, V., & Rand, D. G. (2018). Do the right thing: Experimental evidence that preferences for moral behavior, rather than equity or efficiency per se, drive human prosociality. Judgment and Decision Making, 13, 99-111. https://doi.org/10.1017/S1930297500008858
42. Capraro, V., Halpern, J. Y., & Perc, M. (2024). From outcome-based to language-based preferences. Journal of Economic Literature, 62, 115–154. https://doi.org/10.1257/jel.20221613
43. Capraro, V., Jagfeld, G., Klein, R., Mul, M., & de Pol, I. V. (2019). Increasing altruistic and cooperative behavior with simple moral nudges. Scientific Reports, 9, 1–11. https://doi.org/10.1038/s41598-019-48094-4
44. Casoria, F., Galeotti, F., & Villeval, M.C. (2023). Trust and social preferences in times of acute health crisis. SSRN. https://dx.doi.org/10.2139/ssrn.4349629
45. Cassar, A., Healy, A., & Von Kessler, C. (2017). Trust, risk, and time preferences after a natural disaster: Experimental evidence from Thailand. World Development, 94, 90–105. https://doi.org/10.1016/j.worlddev.2016.12.042

46. Charness, G., Gneezy, U., & Rasocha, V. (2021). Experimental methods: Eliciting beliefs. Journal of Economic Behavior & Organization, 189, 234-256. https://doi.org/10.1016/j.jebo.2021.06.032
47. Chen, D. L., Schonger, M., & Wickens, C. (2016). oTree—an open-source platform for laboratory, online, and field experiments. Journal of Behavioral and Experimental Finance, 9, 88–97. https://doi.org/10.1016/j.jbef.2015.12.001
48. Coleman, J. S. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94(Supplement), S95-S120. https://doi.org/10.1086/228943
49. Constantino, S. M., Sparkman, G., Kraft-Todd, G. T., Bicchieri, C., Centola, D., Shell-Duncan, B., ... & Weber, E. U. (2022). Scaling up change: a critical review and practical guide to harnessing social norms for climate action. Psychological Science in the Public Interest, 23(2), 50-97. https://doi.org/10.1177/15291006221105279
50. Coppock, A., Leeper, T. J., & Mullinix, K. J. (2018). Generalizability of heterogeneous treatment effect estimates across samples. Proceedings of the National Academy of Sciences, 115(49), 12441-12446. https://doi.org/10.1073/pnas.1808083115
51. Cummings, L. (2014). The "trust" heuristic: Arguments from authority in public health. Health Communication, 29(10), 1043-1056. https://doi.org/10.1080/10410236.2013.831685
52. Dai, H., Saccardo, S., Han, M. A., Roh, L., Raja, N., Vangala, S., ... & Milkman, K. L. (2021). Behavioural nudges increase COVID-19 vaccinations. Nature, 597(7876), 404-409. https://doi.org/10.1038/s41586-021-03843-2
53. Dal Bó, E., & Dal Bó, P. (2014). "Do the right thing:" The effects of moral suasion on cooperation. Journal of Public Economics, 117, 28-38. https://doi.org/10.1016/j.jpubeco.2014.05.002
54. Daniele, G., Martinangeli, A. F., Passarelli, F., Sas, W., & Windsteiger, L. (2024). Pandemic distress and anti-immigration sentiments. Economica. https://doi.org/10.1111/ecca.12536
55. DellaVigna, S., Enikolopov, R., Mironova, V., Petrova, M., & Zhuravskaya, E. (2014). Cross-border media and nationalism: Evidence from Serbian radio in Croatia. American Economic Journal: Applied Economics, 6, 103-132. https://doi.org/10.1257/app.6.3.103
56. Deopa, N., & Fortunato, P. (2021). Coronagraben in Switzerland: culture and social distancing in times of COVID-19. Journal of Population

Economics, 34(4), 1355-1383. https://doi.org/10.1007/s00148-021-00865-y
57. Dillon, C. E., & Lochman, J. E. (2022). Correcting for norm misperception of anti-bullying attitudes. International Journal of Behavioral Development, 46(5), 443-452. https://doi.org/10.1177/0165025419860598
58. Doganoglu, T., & Ozdenoren, E. (2020). Should I stay or should I go (out): The role of trust and norms in disease prevention during pandemics. COVID Economics Vetted and Real-Time Papers, 16, 135-160.
59. Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. Journal of the European Economic Association, 9(3), 522-550. https://doi.org/10.1111/j.1542-4774.2011.01015.x
60. Drouvelis, M., Metcalfe, R., & Powdthavee, N. (2015). Can priming cooperation increase public good contributions? Theory and Decision, 79, 479-492. https://doi.org/10.1007/s11238-015-9481-4
61. Dunlap, R. E., McCright, A. M., & Yarosh, J. H. (2016). The political divide on climate change: Partisan polarization widens in the U.S. Environment: Science and Policy for Sustainable Development, 58(5), 4–23. https://doi.org/10.1080/00139157.2016.1208995
62. Durante, R., Guiso, L., & Gulino, G. (2021). Asocial capital: Civic culture and social distancing during COVID-19. Journal of Public Economics, 194, 104342. https://doi.org/10.1016/j.jpubeco.2020.104342
63. Eichengreen, B., Aksoy, C. G., & Saka, O. (2021). Revenge of the experts: Will COVID-19 renew or diminish public trust in science? Journal of Public Economics, 193, 104343. https://doi.org/10.1016/j.jpubeco.2020.104343
64. Eichengreen, B., Saka, O., & Aksoy, C. G. (2023). The political scar of epidemics. The Economic Journal, uead103. https://doi.org/10.1093/ej/uead103
65. Esaiasson, P., Sohlberg, J., Ghersetti, M., & Johansson, B. (2020). How the coronavirus crisis affects citizen trust in institutions and in unknown others: Evidence from 'the Swedish experiment'. European Journal of Political Research, 60, 748-760. https://doi.org/10.1111/1475-6765.12419
66. European Commission. (2021). Standard Eurobarometer 95 - Spring 2021: Public opinion in the European Union, First results report. Available from: https://europa.eu/eurobarometer/surveys/detail/2532.
67. European Commission. (2023). Special Eurobarometer 538: Climate Change, Report. Available from: https://europa.eu/eurobarometer/surveys/detail/2954
68. Fang, X., & Innocenti, S. (2023). Increasing the acceptability of carbon taxation: The role of social norms and economic reasoning (No. 2023-

25). Institute for New Economic Thinking at the Oxford Martin School, University of Oxford.
69. Freeman, D., Waite, F., Rosebrock, L., Petit, A., Causier, C., East, A., ... & Lambe, S. (2022). Coronavirus conspiracy beliefs, mistrust, and compliance with government guidelines in England. Psychological Medicine, 52(2), 251-263. https://doi.org/10.1017/S0033291720001890
70. Fu, F., Rosenbloom, D. I., Wang, L., & Nowak, M. A. (2011). Imitation dynamics of vaccination behaviour on social networks. Proceedings of the Royal Society B: Biological Sciences, 278(1702), 42-49. https://doi.org/10.1098/rspb.2010.1107
71. Fukuyama, F. (1996). Trust: The social virtues and the creation of prosperity. Simon and Schuster.
72. Gambetta, D., & Morisi, D. (2022). COVID-19 infection induces higher trust in strangers. Proceedings of the National Academy of Sciences, 119, e2116818119. https://doi.org/10.1073/pnas.2116818119
73. Geiger, N., & Swim, J. K. (2016). Climate of silence: Pluralistic ignorance as a barrier to climate change discussion. Journal of Environmental Psychology, 47, 79-90.
74. Glanville, J. L., Andersson, M. A., & Paxton, P. (2013). Do social connections create trust? An examination using new longitudinal data. Social Forces, 92, 545-562. https://doi.org/10.1093/sf/sot079
75. Goldstein, J. (2021, May 20). They're reluctant to get vaccinated. Will a knock on the door help? The New York Times. https://www.nytimes.com/2021/05/20/nyregion/vaccine-hesitancy-outreach.html [accessed on 2023, January 13]
76. Goodwin, R., Ben-Ezra, M., Takahashi, M., Luu, L. A., Borsfay, K., Kovács, M., ... & Höhne, B. (2022). Psychological factors underpinning vaccine willingness in Israel, Japan and Hungary. Scientific Reports, 12(1), 1-9. https://doi.org/10.1038/s41598-021-03986-2
77. Grüner, S., & Krüger, F. (2021). The intention to be vaccinated against COVID-19: Stated preferences before vaccines were available. Applied Economics Letters, 28(21), 1847-1851. https://doi.org/10.1080/13504851.2020.1854445
78. Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. American Economic Review, 94, 526-556. https://doi.org/10.1257/0002828041464498
79. Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes? Journal of Economic Perspectives, 20, 23-48. https://doi.org/10.1257/jep.20.2.23

80. Guiso, L., Sapienza, P., & Zingales, L. (2008). Social capital as good culture. Journal of the European Economic Association, 6, 295-320. https://doi.org/10.1162/JEEA.2008.6.2-3.295
81. Guiso, L., Sapienza, P., & Zingales, L. (2009). Cultural biases in economic exchange? The Quarterly Journal of Economics, 124, 1095-1131. https://doi.org/10.1162/qjec.2009.124.3.1095
82. Guiso, L., Sapienza, P., & Zingales, L. (2011). Civic capital as the missing link. Handbook of social economics, 1, 417-480. https://doi.org/10.1016/B978-0-444-53187-2.00010-3
83. Guriev, S., & Melnikov, N. (2016). War, inflation, and social capital. American Economic Review, 106(5), 230-235. https://doi.org/10.1257/aer.p20161067
84. Haaland, I., Roth, C., & Wohlfart, J. (2023). Designing information provision experiments. Journal of Economic Literature, 61, 3-40. https://doi.org/10.1257/jel.20211658
85. Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Dietz-Medrano, J., ... & Ponarin, E. (2022). World Values Survey: Round Seven – Country-Pooled Datafile Version 3.0. JD Systems Institute & WVSA Secretariat. https://doi.org/10.14281/18241
86. Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). Nature Human Behaviour, 5, 529-538. https://doi.org/10.1038/s41562-021-01079-8
87. Harring, N., Jagers, S. C., & Nilsson, F. (2019). Recycling as a large-scale collective action dilemma: A cross-country study on trust and reported recycling behavior. Resources, Conservation and Recycling, 140, 85-90. https://doi.org/10.1016/j.resconrec.2018.09.008
88. Harrs, S., Müller, L. M., & Rockenbach, B. (2021). How optimistic and pessimistic narratives about COVID-19 impact economic behavior. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3849035
89. Hill, J. (2022, January 24). German Covid protests turn nasty in row over rules and vaccinations. BBC. https://www.bbc.com/news/world-europe-60059543 [accessed on 2023, January 17]
90. Iacono, S. L., Przepiorka, W., Buskens, V., Corten, R., & van de Rijt, A. (2021). COVID-19 vulnerability and perceived norm violations predict loss of social trust: A pre-post study. Social Science & Medicine, 291, 114513. https://doi.org/10.1016/j.socscimed.2021.114513
91. IPCC (2022). Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment

Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, & B. Rama (Eds.)]. Cambridge University Press. Cambridge, UK, and New York, NY, USA. https://doi.org/10.1017/9781009325844

92. Jelnov, A., & Jelnov, P. (2022). Vaccination policy and trust. Economic Modelling. Advance online publication. https://doi.org/10.1016/j.econmod.2022.105773
93. Jennings, W., Stoker, G., Bunting, H., Valgarðsson, V. O., Gaskell, J., Devine, D., ... & Mills, M. C. (2021). Lack of trust, conspiracy beliefs, and social media use predict COVID-19 vaccine hesitancy. Vaccines, 9(6), 593. https://doi.org/10.3390/vaccines9060593
94. Jensen, U. T. (2020). Is self-reported social distancing susceptible to social desirability bias? Using the crosswise model to elicit sensitive behaviors. Journal of Behavioral Public Administration, 3(2). https://doi.org/10.30636/jbpa.32.182
95. Jensen, U. T., Ayers, S., & Koskan, A. M. (2022). Video-based messages to reduce COVID-19 vaccine hesitancy and nudge vaccination intentions. PloS One, 17(4), e0265736. https://doi.org/10.1371/journal.pone.0265736
96. Johnson, N. D., & Mislin, A. A. (2011). Trust games: A meta-analysis. Journal of Economic Psychology, 32, 865-889. https://doi.org/10.1016/j.joep.2011.05.007
97. Jolley, D., & Douglas, K. M. (2017). Prevention is better than cure: Addressing anti-vaccine conspiracy theories. Journal of Applied Social Psychology, 47(8), 459-469. https://doi.org/10.1111/jasp.12453
98. Jolley, D., Douglas, K. M., Marchlewska, M., Cichocka, A., & Sutton, R. M. (2022). Examining the links between conspiracy beliefs and the EU "Brexit" referendum vote in the UK: Evidence from a two-wave survey. Journal of Applied Social Psychology, 52, 30-36. https://doi.org/10.1111/jasp.12829
99. Jones, D. R., & McDermott, M. L. (2022). Partisanship and the politics of COVID vaccine hesitancy. Polity, 54. https://doi.org/10.1086/719918
100. Juanchich, M., Sirota, M., Jolles, D., & Whiley, L. A. (2021). Are COVID-19 conspiracies a threat to public health? Psychological characteristics and health protective behaviours of believers. European Journal of Social Psychology, 51(6), 969-989. https://doi.org/10.1002/ejsp.2796
101. Khan, H., Dabla-Norris, M. E., Lima, F., & Sollaci, A. (2021). Who doesn't want to be vaccinated? Determinants of vaccine hesitancy

during COVID-19. International Monetary Fund. https://doi.org/10.5089/9781513573717.001
102. Klymak, M., & Vlandas, T. (2022). Partisanship and Covid-19 vaccination in the UK. Scientific Reports, 12, 19785. https://doi.org/10.1038/s41598-022-23035-w
103. Knobel, P., Zhao, X., & White, K. M. (2022). Do conspiracy theory and mistrust undermine people's intention to receive the COVID-19 vaccine in Austria? Journal of Community Psychology, 50, 1269-1281. https://doi.org/10.1002/jcop.22714
104. Kreps, S., Prasad, S., Brownstein, J. S., Hswen, Y., Garibaldi, B. T., Zhang, B., ... & Kriner, D. L. (2020). Factors associated with US adults' likelihood of accepting COVID-19 vaccination. JAMA Network Open, 3(10), e2025594-. https://doi.org/10.1001/jamanetworkopen.2020.25594
105. Larsen, M., Nyrup, J., & Petersen, M. B. (2020). Do survey estimates of the public's compliance with COVID-19 regulations suffer from social desirability bias? Journal of Behavioral Public Administration, 3(2). https://doi.org/10.30636/jbpa.32.164
106. Larson, H. J., Clarke, R. M., Jarrett, C., Eckersberger, E., Levine, Z., Schultz, W. S., ... & Paterson, P. (2018). Measuring trust in vaccination: A systematic review. Human Vaccines & Immunotherapeutics, 14(7), 1599-1609. https://doi.org/10.1080/21645515.2018.1459252
107. Lazarus, J. V., Ratzan, S. C., Palayew, A., Gostin, L. O., Larson, H. J., Rabin, K., ... & Kimball, S. (2021). A global survey of potential acceptance of a COVID-19 vaccine. Nature Medicine, 27(2), 225-228. https://doi.org/10.1038/s41591-020-1124-9
108. Leiserowitz, A., Maibach, E., Rosenthal, S., Kotcher, J., Goddard, E., Carman, J., Ballew, M., Verner, M., Marlon, J., Lee, S., Myers, T., Goldberg, M., Badullovich, N., & Thier, K. (2023). Climate change in the American mind: Beliefs & attitudes, Fall 2023. Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication. https://climatecommunication.yale.edu/publications/climate-change-in-the-american-mind-politics-policy-fall-2023/ [accessed on 2024, May 22]
109. Leviston, Z., Walker, I., & Morwinski, S. (2013). Your opinion on climate change might not be as common as you think. Nature Climate Change, 3(4), 334–337. https://doi.org/10.1038/nclimate1743
110. Li, J., Zhang, Y., & Niu, X. (2021). The COVID-19 pandemic reduces trust behavior. Economics Letters, 199, 109700. https://doi.org/10.1016/j.econlet.2020.109700

111. Lim, W., & Zhang, P. (2020). Herd immunity and a vaccination game: An experimental study. PloS One, 15(5), e0232652. https://doi.org/10.1371/journal.pone.0232652
112. Loomba, S., de Figueiredo, A., Piatek, S. J., de Graaf, K., & Larson, H. J. (2021). Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. Nature Human Behaviour, 5(3), 337-348. https://doi.org/10.1038/s41562-021-01056-1
113. Mannemar Sønderskov, K. (2009). Different goods, different effects: Exploring the effects of generalized social trust in large-N collective action. Public Choice, 140, 145-160. https://doi.org/10.1007/s11127-009-9416-0
114. Marreiros, H., Tonin, M., Vlassopoulos, M., & Schraefel, M. C. (2017). "Now that you mention it": A survey experiment on information, inattention and online privacy. Journal of Economic Behavior & Organization, 140, 1-17. https://doi.org/10.1016/j.jebo.2017.03.024
115. Martinez-Bravo, M., & Stegmann, A. (2022). In vaccines we trust? The effects of the CIA's vaccine ruse on immunization in Pakistan. Journal of the European Economic Association, 20(1), 150-186. https://doi.org/10.1093/jeea/jvab018
116. Mathieu, E., Ritchie, H., Ortiz-Ospina, E., Roser, M., Hasell, J., Appel, C., Giattino, C., & Rodés-Guirao, L. (2021). A global database of COVID-19 vaccinations. Nature Human Behaviour, 5, 947-953. https://doi.org/10.1038/s41562-021-01122-8
117. Midden, C. J., & Huijts, N. M. (2009). The role of trust in the affective evaluation of novel risks: The case of CO2 storage. Risk Analysis, 29(5), 743-751. https://doi.org/10.1111/j.1539-6924.2009.01201.x
118. Mildenberger, M., & Tingley, D. (2019). Beliefs about climate beliefs: the importance of second-order opinions for climate politics. British Journal of Political Science, 49(4), 1279-1307. https://doi.org/10.1017/S0007123417000321
119. Miller, D. T., & McFarland, C. (1991). When social comparison goes awry: The case of pluralistic ignorance. In Social comparison (pp. 287-313). Routledge.
120. Miller, D. T., & Prentice, D. A. (2016). Changing norms to change behavior. Annual review of psychology, 67, 339-361. https://doi.org/10.1146/annurev-psych-010814-015013
121. Moore, P. (2016, June 27). How Britain voted at the EU referendum. YouGov. https://yougov.co.uk/topics/politics/articles-reports/2016/06/27/how-britain-voted [accessed on 2023, January 14]

122. Mullinix, K. J., Leeper, T. J., Druckman, J. N., & Freese, J. (2015). The generalizability of survey experiments. Journal of Experimental Political Science, 2(2), 109-138. https://doi.org/10.1017/XPS.2015.19
123. Murphy, K. (2004). The role of trust in nurturing compliance: A study of accused tax avoiders. Law and human behavior, 28, 187-209. https://doi.org/10.1023/B:LAHU.0000022322.94776.ca
124. Murtin, F., Fleischer, L., Siegerink, V., Aassve, A., Algan, Y., Boarini, R., ... & Kim, S. (2018). Trust and its determinants: Evidence from the Trustlab experiment. Paris: OECD Publishing, OECD Statistics Working Papers, 2018/02. https://doi.org/10.1787/869ef2ec-en
125. Naef, M., & Schupp, J. (2009). Measuring trust: Experiments and surveys in contrast and combination. SOEPpaper, 167. https://doi.org/10.2139/ssrn.1367375
126. Nan, X., Iles, I. A., Yang, B., & Ma, Z. (2022). Public health messaging during the COVID-19 pandemic and beyond: Lessons from communication science. Health Communication, 37, 1-19. https://doi.org/10.1080/10410236.2021.1994910
127. Neumann-Böhme, S., Varghese, N. E., Sabat, I., Barros, P. P., Brouwer, W., van Exel, J., ... & Stargardt, T. (2020). Once we have it, will we use it? A European survey on willingness to be vaccinated against COVID-19. The European Journal of Health Economics, 21(7), 977-982. https://doi.org/10.1007/s10198-020-01208-6
128. Nordhaus, W. (2018). Projections and uncertainties about climate change in an era of minimal climate policies. American economic journal: economic policy, 10(3), 333-360. https://doi.org/10.1257/pol.20170046
129. Nunn, N., & Wantchekon, L. (2011). The slave trade and the origins of mistrust in Africa. American economic review, 101(7), 3221-3252. https://doi.org/10.1257/aer.101.7.3221
130. Olivera-La Rosa, A., Chuquichambi, E. G., & Ingram, G. P. (2020). Keep your (social) distance: Pathogen concerns and social perception in the time of COVID-19. Personality and Individual Differences, 166, 110200. https://doi.org/10.1016/j.paid.2020.110200
131. Olson, M. (1965). The logic of collective action: Public goods and the theory of groups. Harvard University Press.
132. Ostrom, E. (2000). Social capital: A fad or a fundamental concept? In Dasgupta, P. and Serageldin, I. (Eds.), Social Capital: A Multifaceted Perspective. The World Bank, Washington, D.C.
133. Ostrom, E., & Ahn, T. K. (2009). The meaning of social capital and its link to collective action. In Handbook of social capital: The troika of

sociology, political science and economics (pp. 17-35). https://doi.org/10.4337/9781848447486
134. Page, B. I., & Shapiro, R. Y. (1983). Effects of public opinion on policy. American political science review, 77(1), 175-190. https://doi.org/10.2307/1956018
135. Paul, E., Steptoe, A., & Fancourt, D. (2021). Attitudes towards vaccines and intention to vaccinate against COVID-19: Implications for public health communications. The Lancet Regional Health – Europe, 1, 100012. https://doi.org/10.1016/j.lanepe.2020.100012
136. Perkins, H. W., & Berkowitz, A. D. (1986). Perceiving the community norms of alcohol use among students: Some research implications for campus alcohol education programming. International journal of the Addictions, 21(9-10), 961-976. https://doi.org/10.3109/10826088609077249
137. Pew Research Center. (2020, February 13). As economic concerns recede, environmental protection rises on the public's policy agenda. https://www.pewresearch.org/politics/2020/02/13/as-economic-concerns-recede-environmental-protection-rises-on-the-publics-policy-agenda/ [accessed on 2024, May 22]
138. Peysakhovich, A., & Rand, D. G. (2016). Habits of virtue: creating norms of cooperation and defection in the laboratory. Management Science, 62(3), 631-647. https://doi.org/10.1287/mnsc.2015.2168
139. Phalippou, L., & Wu, B. (2023). The association between the proportion of Brexiters and COVID-19 death rates in England. Social Science & Medicine, 323, 115826. https://doi.org/10.1016/j.socscimed.2023.115826
140. Pompeo, M., & Serdarevic, N. (2021). Is information enough? The case of Republicans and climate change. The Case of Republicans and Climate Change (December 9, 2021). https://dx.doi.org/10.2139/ssrn.3981552
141. Posten, A. C., Ockenfels, A., & Mussweiler, T. (2014). How activating cognitive content shapes trust: A subliminal priming study. Journal of Economic Psychology, 41, 12-19. https://doi.org/10.1016/j.joep.2013.04.002
142. Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. Simon and Schuster.
143. Putnam, R., Leonardi, R., & Nanetti, R. Y. (1993). Making democracy work: Civic traditions in modern Italy. Princeton, NJ: Princeton University Press.
144. Pyszczynski, T., Lockett, M., Greenberg, J., & Solomon, S. (2021). Terror management theory and the COVID-19 pandemic. Journal of Humanistic Psychology, 61, 173-189. https://doi.org/10.1177/0022167820959488

145. Rand, D. G., Dreber, A., Haque, O. S., Kane, R. J., Nowak, M. A., & Coakley, S. (2014). Religious motivations for cooperation: An experimental investigation using explicit primes. Religion, Brain & Behavior, 4, 31-48. https://doi.org/10.1080/2153599X.2013.775664
146. Rigoli, F. (2020). Opinions about immigration, patriotism, and welfare policies during the coronavirus emergency: The role of political orientation and anxiety. Social Science Journal. https://doi.org/10.1080/03623319.2020.1806583
147. Ritchie, H., Mathieu, E., Rodés-Guirao, L., Appel, C., Giattino, C., ... & Roser, M. (2020). Coronavirus Pandemic (COVID-19). OurWorldInData.org. Available from: https://ourworldindata.org/coronavirus.
148. Ritchie, H., Rosado, P., & Roser, M. (2020). Greenhouse gas emissions. Our World in Data. Available from: https://ourworldindata.org/greenhouse-gas-emissions
149. Robinson, E., Jones, A., & Daly, M. (2021). International estimates of intended uptake and refusal of COVID-19 vaccines: A rapid systematic review and meta-analysis of large nationally representative samples. Vaccine, 39, 2024-2034. https://doi.org/10.1016/j.vaccine.2021.02.005
150. Romano, A., Spadaro, G., Balliet, D., Joireman, J., Van Lissa, C., Jin, S., ... & Meier, A. (2021). Cooperation and trust across societies during the COVID-19 pandemic. Journal of Cross-Cultural Psychology, 52(7), 622-642. https://doi.org/10.1177/0022022120988913
151. Romer, D., & Jamieson, K. H. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the US. Social Science & Medicine, 263, 113356. https://doi.org/10.1016/j.socscimed.2020.113356
152. Rönnerstrand, B. (2013). Social capital and immunization against the 2009 A (H1N1) pandemic in Sweden. Scandinavian Journal of Public Health, 41(8), 853-859. https://doi.org/10.1177/1403494813494975
153. Rönnerstrand, B. (2016). Contextual generalized trust and immunization against the 2009 A (H1N1) pandemic in the American states: A multilevel approach. SSM - Population Health, 2, 632-639. https://doi.org/10.1016/j.ssmph.2016.08.004
154. Rosenberg, M. (1956). Misanthropy and political ideology. American Sociological Review, 21(6), 690-695. https://doi.org/10.2307/2088419
155. Rozin, P., & Royzman, E. B. (2001). Negativity bias, negativity dominance, and contagion. Personality and Social Psychology Review, 5, 296-320. https://doi.org/10.1207/S15327957PSPR0504_2
156. Ruggeri, K., Stock, F., Haslam, S. A., Capraro, V., Boggio, P., Ellemers, N., Cichocka, A., Douglas, K. M., Rand, D. G., Van der Linden, S., &

Cikara, M. (2024). A synthesis of evidence for policy from behavioural science during COVID-19. Nature, 625, 134-147. https://doi.org/10.1038/s41586-023-06840-9

157. Ryoo, Y., & Kim, W. (2021). Using descriptive and injunctive norms to encourage COVID-19 social distancing and vaccinations. Health Communication, 1-10. https://doi.org/10.1080/10410236.2021.1973702
158. Sanchez-Gomez, M., Giorgi, G., Finstad, G. L., Urbini, F., Foti, G., Mucci, N., Zaffina, S., & León-Perez, J. M. (2021). COVID-19 pandemic as a traumatic event and its associations with fear and mental health: A cognitive-activation approach. International Journal of Environmental Research and Public Health, 18, 7422. https://doi.org/10.3390/ijerph18147422
159. Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. Psychological science, 18(5), 429-434. https://doi.org/10.1111/j.1467-9280.2007.01917.x
160. Shachat, J., Walker, M. J., & Wei, L. (2021). How the onset of the Covid-19 pandemic impacted pro-social behaviour and individual preferences: Experimental evidence from China. Journal of Economic Behavior & Organization, 190, 480-494. https://doi.org/10.1016/j.jebo.2021.08.001
161. Siciliani, L., Wild, C., McKee, M., Kringos, D., Barry, M. M., Barros, P. P., ... & Caracci, G. (2020). Strengthening vaccination programmes and health systems in the European Union: A framework for action. Health Policy, 124(5), 511-518. https://doi.org/10.1016/j.healthpol.2020.02.015
162. Šiđanin, I., Njegovan, B. R., & Sokolović, B. (2021). Students' views on vaccination against COVID-19 virus and trust in media information about the vaccine: The case of Serbia. Vaccines, 9(12), 1430. https://doi.org/10.3390/vaccines9121430
163. Skidmore, M., & Toya, H. (2014). Do natural disasters enhance societal trust? Kyklos, 67, 255-279. https://doi.org/10.1111/kykl.12053
164. Sokoloski, R., Markowitz, E. M., & Bidwell, D. (2018). Public estimates of support for offshore wind energy: False consensus, pluralistic ignorance, and partisan effects. Energy Policy, 112, 45-55. https://doi.org/10.1016/j.enpol.2017.10.005
165. Sparkman, G., Geiger, N., & Weber, E. U. (2022). Americans experience a false social reality by underestimating popular climate policy support by nearly half. Nature communications, 13(1), 4779. https://doi.org/10.1038/s41467-022-32412-y

166. Sparkman, G., Howe, L., & Walton, G. (2021). How social norms are often a barrier to addressing climate change but can be part of the solution. Behavioural public policy, 5(4), 528-555. https://doi.org/10.1017/bpp.2020.42
167. Sturgis, P., Brunton-Smith, I., & Jackson, J. (2021). Trust in science, social consensus and vaccine confidence. Nature Human Behaviour, 5(11), 1528-1534. https://doi.org/10.1038/s41562-021-01115-7
168. Szrek, H., Chao, L. W., Ramlagan, S., & Peltzer, K. (2012). Predicting (un)healthy behavior: A comparison of risk-taking propensity measures. Judgment and Decision Making, 7(6), 716.
169. Tabellini, G. (2008). Institutions and culture. Journal of the European Economic Association, 6, 255-294. https://doi.org/10.1162/JEEA.2008.6.2-3.255
170. Tabellini, G. (2010). Culture and institutions: Economic development in the regions of Europe. Journal of the European Economic Association, 8, 677-716. https://doi.org/10.1111/j.1542-4774.2010.tb00537.x
171. Taha, S. A., Matheson, K., & Anisman, H. (2013). The 2009 H1N1 influenza pandemic: The role of threat, coping, and media trust on vaccination intentions in Canada. Journal of Health Communication, 18(3), 278-290. https://doi.org/10.1080/10810730.2012.727960
172. Tappin, B. M., & Capraro, V. (2018). Doing good vs. avoiding bad in prosocial choice: A refined test and extension of the morality preference hypothesis. Journal of Experimental Social Psychology, 79, 64-70. https://doi.org/10.1016/j.jesp.2018.06.005
173. The Economist. (2020). The Economist's covid-19 excess deaths tracker. GitHub. Available from: https://github.com/TheEconomist/covid-19-excess-deaths-tracker.
174. The Guardian. (2022, January 30). Thousands join protest in Canada against Covid vaccine mandates. https://www.theguardian.com/world/2022/jan/30/thousands-join-protest-in-canada-against-covid-vaccine-mandates [accessed on 2023, January 17]
175. Thornhill, R., & Fincher, C. L. (2014). The parasite-stress theory of values and sociality: Infectious disease, history and human values worldwide. Springer.
176. Thunström, L., Ashworth, M., Finnoff, D., & Newbold, S. C. (2021). Hesitancy toward a COVID-19 vaccine. EcoHealth, 18(1), 44-60. https://doi.org/10.1007/s10393-021-01524-0
177. Torales, J., O'Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global

mental health. International Journal of Social Psychiatry, 66, 317-320. https://doi.org/10.1177/0020764020915212
178. U.S. Census Bureau. (2022, February 24). Educational attainment in the United States: 2021. https://www.census.gov/newsroom/press-releases/2022/educational-attainment.html [accessed on 2024, May 22]
179. Uslaner, E. M., & Brown, M. (2005). Inequality, trust, and civic engagement. American politics research, 33(6), 868-894. https://doi.org/10.1177/1532673X04271903
180. Van der Cruijsen, C., de Haan, J., & Jansen, D. J. (2016). Trust and financial crisis experiences. Social Indicators Research, 127, 577-600. https://doi.org/10.1007/s11205-015-0984-8
181. Van Lange, P. A., Vugt, M. V., Meertens, R. M., & Ruiter, R. A. (1998). A social dilemma analysis of commuting preferences: the roles of social value orientation and trust 1. Journal of applied social psychology, 28(9), 796-820. https://doi.org/10.1111/j.1559-1816.1998.tb01732.x
182. Van Oost, P., Yzerbyt, V., Schmitz, M., Vansteenkiste, M., Luminet, O., & Demoulin, S. (2022). The relation between conspiracism, government trust, and COVID-19 vaccination intentions: The key role of motivation. Social Science & Medicine, 301, 114926. https://doi.org/10.1016/j.socscimed.2022.114926
183. Vesely, S., & Klöckner, C. A. (2020). Social desirability in environmental psychology research: Three meta-analyses. Frontiers in psychology, 11, 1395. https://doi.org/10.3389/fpsyg.2020.01395
184. Veszteg, R. F., Funaki, Y., & Tanaka, A. (2015). The impact of the Tohoku earthquake and tsunami on social capital in Japan: Trust before and after the disaster. International Political Science Review, 36, 119-138. https://doi.org/10.1177/0192512113509501
185. Vlasceanu, M., Doell, K. C., Bak-Coleman, J. B., Todorova, B., Berkebile-Weinberg, M. M., Grayson, S. J., ... & Lutz, A. E. (2024). Addressing climate change with behavioral science: A global intervention tournament in 63 countries. Science advances, 10(6), eadj5778. https://doi.org/10.1126/sciadv.adj577
186. Wang, T. (2021). Media, pulpit, and populist persuasion: Evidence from Father Coughlin. American Economic Review, 111, 3064-3092. https://doi.org/10.1257/aer.20200513
187. Weinberg, J. D., Freese, J., & McElhattan, D. (2014). Comparing data characteristics and results of an online factorial survey between a population-based and a crowdsource-recruited sample. Sociological Science, 1. https://doi.org/10.15195/v1.a19

188. Winter, T., Riordan, B. C., Scarf, D., & Jose, P. E. (2022). Conspiracy beliefs and distrust of science predict reluctance of vaccine uptake of politically right-wing citizens. Vaccine, 40, 1896-1903. https://doi.org/10.1016/j.vaccine.2022.01.039
189. Wollebæk, D., Fladmoe, A., Steen-Johnsen, K., & Ihlen, Ø. (2022). Right-wing ideological constraint and vaccine refusal: The case of the COVID-19 vaccine in Norway. Scandinavian Political Studies. https://doi.org/10.1111/1467-9477.12224
190. Wynen, J., Op de Beeck, S., Verhoest, K., Glavina, M., Six, F., & Delputte, S. (2022). Taking a COVID-19 vaccine or not? Do trust in government and trust in experts help us to understand vaccination intention? Administration & Society. Advance online publication. https://doi.org/10.1177/00953997211073459
191. Xu, Z., & Guo, H. (2018). A meta-analysis of the effectiveness of guilt on health-related attitudes and intentions. Health Communication, 33, 519-525. https://doi.org/10.1080/10410236.2017.1278633
192. Yamagishi, T. (2011). The emancipation theory of trust. In Trust (pp. 37-59). Springer, Tokyo.
193. Yamagishi, T., & Sato, K. (1986). Motivational bases of the public goods problem. Journal of Personality and Social Psychology, 50(1), 67. https://psycnet.apa.org/doi/10.1037/0022-3514.50.1.67
194. Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. Motivation and Emotion, 18, 129-166.
195. Yamagishi, T., Cook, K. S., & Watabe, M. (1998). Uncertainty, trust, and commitment formation in the United States and Japan. American Journal of Sociology, 104, 165-194. https://doi.org/10.1086/210005
196. Yanagizawa-Drott, D. (2014). Propaganda and conflict: Evidence from the Rwandan genocide. Quarterly Journal of Economics, 129, 1947-1994. https://doi.org/10.1093/qje/qju020
197. Zimand-Sheiner, D., Kol, O., Frydman, S., & Levy, S. (2021). To Be (Vaccinated) or not to be: The effect of media exposure, institutional trust, and incentives on attitudes toward COVID-19 vaccination. International Journal of Environmental Research and Public Health, 18(24), 12894. https://doi.org/10.3390/ijerph182412894

APPENDIX A

Survey questionnaire.

Below follows the complete questionnaire. The order of questions provided here follows the original structure of the questionnaire. The questions are translated from Lithuanian.

1. What is your age?

[Enter a number]

2. What is your gender?

[Possible answers: woman, man.]

3. How would you define the size of the settlement you live in?

[Possible answers: city or town, rural area]

4. Which county do you live in?

[Possible answers: Alytus County, Kaunas County, Klaipeda County, Marijampole County, Panevezys County, Siauliai County, Taurage County, Telsiai County, Utena County, Vilnius County]

5. Which municipality do you live in?

[Possible answers: Alytus city municipality, Alytus district municipality, Druskininkai municipality, Lazdijai district municipality, Varena district municipality, Birstonas municipality, Jonava district municipality, Kaisiadoriai district municipality, Kaunas city municipality, Kaunas district municipality, Kedainiai district municipality, Prienai district municipality, Raseiniai district municipality, Klaipeda city municipality, Kretinga district municipality, Neringa municipality, Palanga city municipality, Skuodas district municipality, Silute district municipality, Kalvarija municipality, Kazlu Ruda municipality, Marijampole municipality, Sakiai district municipality, Vilkaviskis district municipality, Birzai district municipality, Kupiskis district municipality, Panevezys city municipality, Panevezys district municipality, Pasvalys district municipality, Rokiskis district municipality, Akmene district municipality, Joniskis district municipality, Kelme district municipality, Pakruojis district municipality, Siauliai city municipality, Siauliai district municipality, Jurbarkas district municipality, Pagegiai municipality, Silale district municipality, Taurage district municipality, Mazeikiai district municipality, Plunge district municipality, Rietavas

municipality, Telsiai district municipality, Anyksciai district municipality, Ignalina district municipality, Moletai district municipality, Utena district municipality, Visaginas municipality, Zarasai district municipality, Elektrenai municipality, Salcininkai district municipality, Sirvintos district municipality, Svencioniai district municipality, Trakai district municipality, Ukmerge district municipality, Vilnius city municipality, Vilnius district municipality]

6. To what extent do the following statements describe your behavior last week?

- I spent my free time only with people whom I live with.
- I did not travel outside the municipality I live in for personal reasons.
- I consciously kept a distance from other people in public.
- In public I wore a mask that covers my mouth and nose.

[Answers on a 7-point scale, ranging from 1 = Does not apply at all to 7 = Applies very much.]

7. To what extent do you agree with the following statements?

- If I got COVID-19 like symptoms (e.g. loss of taste) tomorrow, I would get tested for COVID-19.
- If I got COVID-19 like symptoms (e.g. loss of taste) tomorrow, I would isolate myself from society.
- If I were diagnosed with COVID-19, I would inform the people I had contact with about this.
- I will get vaccinated as soon as a free COVID-19 vaccine becomes available to me.
- If people who are not vaccinated against COVID-19 were banned from receiving some public services (e.g. attending public events), this would encourage me to get vaccinated.
- If I received more reliable information that the COVID-19 vaccine is safe and effective, this would encourage me to get vaccinated.
- The Lithuanian society is at the moment complying with restrictions that are implemented to manage the COVID-19 pandemic.
- To manage the COVID-19 pandemic in Lithuania, strict restrictions to public life are needed.
- Behavior that gives way to further spread of the coronavirus (e.g. participation in social gatherings), should be punished stricter financially.
- In general, I am physically healthy.
- In general, my closest family members are physically healthy.

- In general, I am willing to take risks.
- I fear getting sick with COVID-19.
- I vote in main elections that are organized in the country (e.g. Lithuanian Parliamentary, Presidential, Municipality elections).
- I pay taxes to the government even when I have the opportunity to avoid them.
- In general, I am a religious person.

[Answers on a 7-point scale, ranging from 1 = Strongly disagree to 7 = Strongly agree.]

8. Do you have ”Korona Stop LT” application installed on your phone, which has a proximity deter- mination function that can warn users about being close to people who are sick with COVID-19?

[Possible answers: Yes; No; No, but I intend to; No, I do not have a smart device; I do not know.]

9. Have you been diagnosed with COVID-19?

[Possible answers: Yes, No]

10. Do you think you have had COVID-19, but have not been diagnosed with it using a COVID-19 test?

[Possible answers: Yes, No]

11. How many people, who have been diagnosed with COVID-19, do you know personally?

[Enter a number]

12. How many people, who have been hospitalized due to COVID-19, do you know personally?

[Enter a number]

13. In general, how much do you trust:

- People you do not know personally?
- The country’s government authorities?
- The country’s healthcare system?
- Science?
- Pharmaceutical companies?
- The country’s media?

[Answers on a 7-point scale, ranging from 1 = Do not trust at all to 7 = Trust completely.]

14. How would your financial situation change if the main provider of your family got sick with COVID-19 and could not work for one month?

[Answers on a 7-point scale, ranging from 1 = Would deteriorate a lot 7 = Would improve a lot.]

15. How did your financial situation change during the COVID-19 pandemic?

[Answers on a 7-point scale, ranging from 1 = Deteriorated a lot 7 = Improved a lot.]

16. Does your job allow you to work from home?

[Possible answers: Yes, No, Somewhat]

17. To what extent do you agree with the following statements?

- The COVID-19 pandemic is a lie.
- The 5G mobile technology is directly related to the COVID-19 pandemic.
- Some important global events have been decided by the manipulative actions of a secret influential group of people.

[Answers on a 7-point scale, ranging from 1 = Strongly disagree to 7 = Strongly agree.]

18. Imagine that your city (or district) municipality is organizing a project. If at least 90% of people from the municipality contributed 10 euros to this project each, the project would be implemented and would yield a benefit that is worth 50 euros to every person living in the municipality (even to those who did not contribute to the project). But if less than 90% contributed, then the project would fail, and the collected money would not be returned. Would you contribute 10 euros to the project?

[Possible answers: Yes, No]

19. Imagine that you lost a wallet with 200 euros and a driver's license in it. A person you do not know personally, but who lives near you finds it. How likely is it that he will return the wallet with all your money and everything else inside it to you?

[Enter a number between 0% (will not return definitely) and 100% (will return definitely).]

20. What is your marital status?

[Possible answers: Married or live with a partner, Single or divorced]

21. What is your employment status?

[Possible answers: Employed full-time, Employed part-time, Self-employed, Retired, Student, Unemployed, Other]

22. What is the aggregate net income of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?

[Possible answers: 0–499 euros, 500–999 euros, 1,000—1,999 euros, 2,000—2,999 euros, More than 3,000 euros, Prefer not to answer this question]

23. How many people live in your household?

[Enter a number]

24. What is your education?

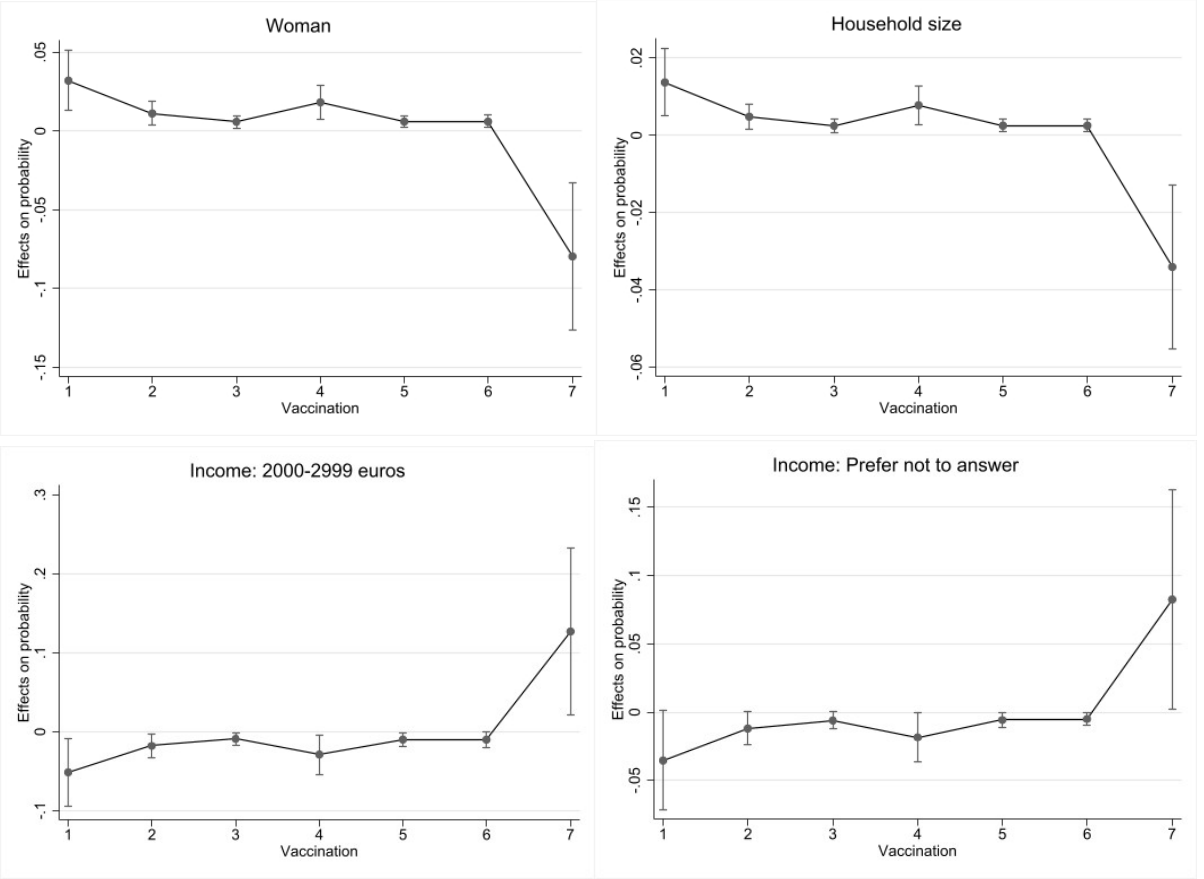
[Possible answers: Basic, Secondary, Vocational, Higher]

25. What is your nationality?

[Possible answers: Lithuanian, Polish, Russian, Other]

26. Which political force did you support in the first round of the 2020 Lithuanian parliamentary election?

[Possible answers: The Centre Party—Nationalists, The Labour Party, The Way of Courage, The Union of Intergenerational Solidarity—Cohesion for Lithuania, The Christian Union, The Freedom Party, The Electoral Action of Poles in Lithuania—Christian Families Alliance, The Lithuanian People's Party, The Liberal Movement of the Republic of Lithuania, The Social Democratic Labour Party of Lithuania, The Social Democratic Party of Lithuania, The Lithuanian Farmers and Greens Union, The Lithuanian Green Party, The National Alliance, Freedom and Justice, Lietuva—VISU, The Homeland Union—Lithuanian Christian Democrats, Did not vote, Prefer not to answer]


Woman
Effects on probability
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-.1
-.05
0
.05
1
2
3
4
5
6
7
Vaccination
Household size
Effects on probability
-.06
-.04
-.02
0
.02
1
2
3
4
5
6
7
Vaccination
Income: 2000-2999 euros
Effects on probability
-.1
0
.1
.2
.3
1
2
3
4
5
6
7
Vaccination
Income: Prefer not to answer
Effects on probability
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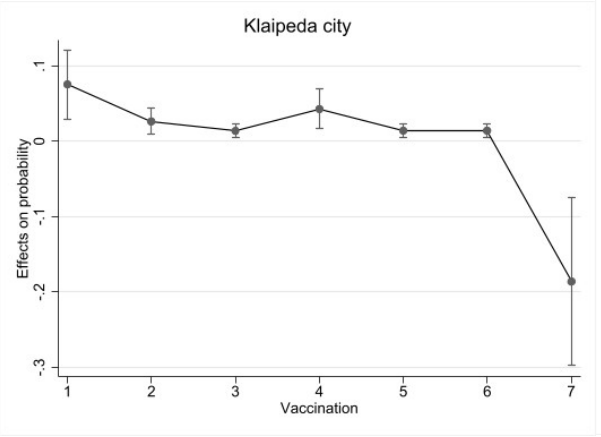
4
5
6
7
Vaccination


Klaipeda city
Effects on probability
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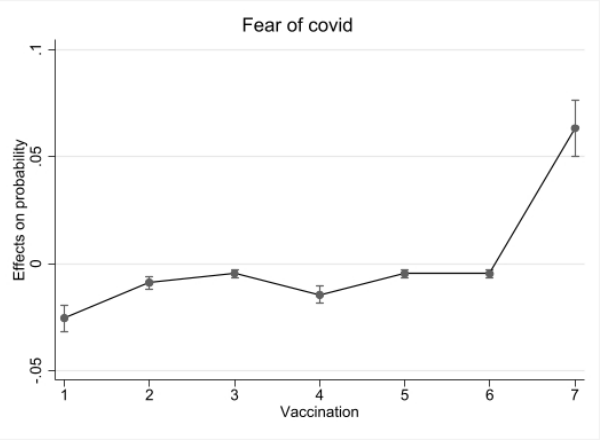
-.2
-.1
0
.1
1
2
3
4
5
6
7
Vaccination


Fear of covid
Effects on probability
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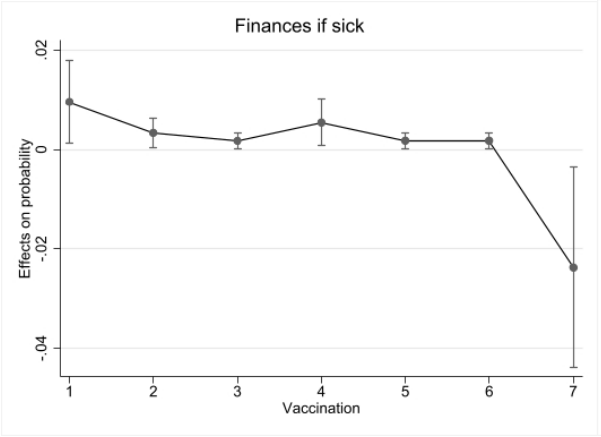
0
.05
.1
1
2
3
4
5
6
7
Vaccination


Finances if sick
Effects on probability
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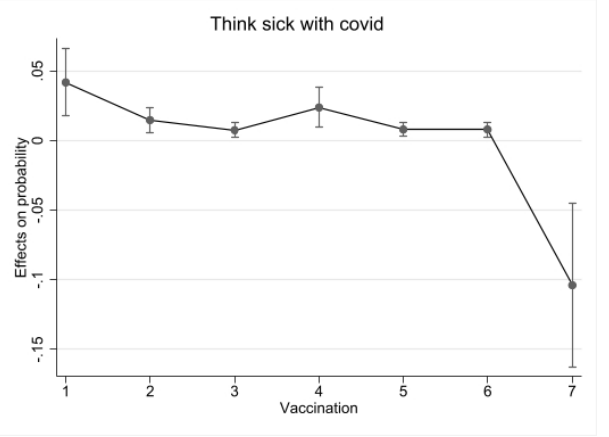
-.02
0
.02
1
2
3
4
5
6
7
Vaccination


Think sick with covid
Effects on probability
-.15
-.1
-.05
0
.05
1
2
3
4
5
6
7
Vaccination

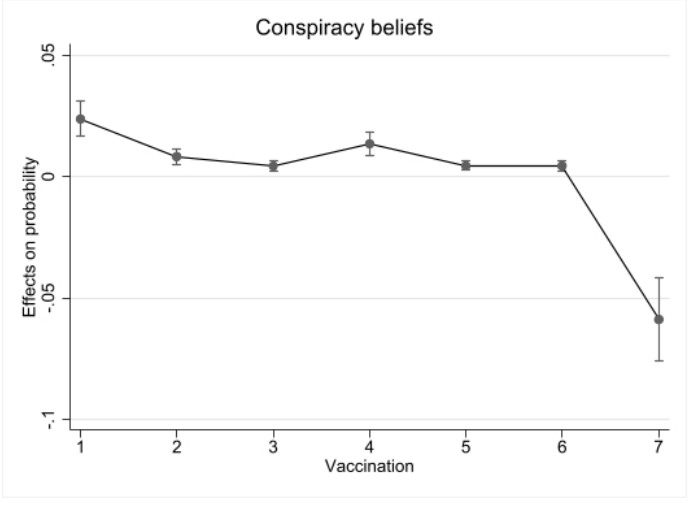


Fig A1. Average marginal effects of control variables from the baseline model. The figures report the estimated average marginal effects of the control variables with 95% confidence intervals from the baseline ordered logistic regression model. The horizontal axis represents answers to the vaccination question: "I will get vaccinated as soon as a free COVID-19 vaccine becomes available to me." Answers range from 1 = "Strongly disagree" to 7 = "Strongly agree." We report average marginal effects only of those control variables that have logit coefficients that are statistically significant at least at a 5% significance level.

Table A1. Definition of variables.

Variable	Definition
Vaccination	Ordinal variable of agreement to the statement: "I will get vaccinated as soon as a free COVID-19 vaccine becomes available to me." 1 = "Strongly disagree, 2 = "Disagree," 3 = "Somewhat disagree," 4 = "Neither agree nor disagree," 5 = "Somewhat agree," 6 = "Agree," 7 = "Strongly agree."
Trust in strangers	Continuous variable of answers to the statement: "In general, how much do you trust people you do not know personally?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Trust in government	Continuous variable of answers to the statement: "In general, how much do you trust country's government authorities?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Trust in healthcare	Continuous variable of answers to the statement: "In general, how much do you trust country's healthcare system?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Trust in science	Continuous variable of answers to the statement: "In general, how much do you trust science?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Trust in pharma	Continuous variable of answers to the statement: "In general, how much do you trust pharmaceutical companies?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Trust in media	Continuous variable of answers to the statement: "In general, how much do you trust country's media?" 1 = "Do not trust at all," 2 = "Do not trust," 3 = "Somewhat do not trust," 4 = "Neither trust nor distrust," 5 = "Somewhat trust," 6 = "Trust," 7 = "Trust completely."
Personal health	Continuous variable of agreement to the statement: "In general, I am physically healthy." 1 = "Strongly disagree, 2

Variable	Definition
	= “Disagree,” 3 = “Somewhat disagree,” 4 = “Neither agree, nor disagree,” 5 = “Somewhat agree,” 6 = “Agree,” 7 = “Strongly agree.”
Family health	Continuous variable of agreement to the statement: “In general, my closest family members are physically healthy.” 1 = “Strongly disagree, 2 = “Disagree,” 3 = “Somewhat disagree,” 4 = “Neither agree, nor disagree,” 5 = “Somewhat agree,” 6 = “Agree,” 7 = “Strongly agree.”
Diagnosed with covid	Binary variable of answer to the question: “Have you been diagnosed with COVID-19?” 1 = “Yes”; 0 = “No.”
Think sick with covid	Binary variable of the answer to the question: “Do you think you have had COVID-19, but have not been diagnosed using a test?” 1 = “Yes”; 0 = “No.”
Conspiracy beliefs	Continuous variable of agreement to the statement: “The 5G mobile technology is directly related to the COVID-19 pandemic.” 1 = “Strongly disagree, 2 = “Disagree,” 3 = “Somewhat disagree,” 4 = “Neither agree, nor disagree,” 5 = “Somewhat agree,” 6 = “Agree,” 7 = “Strongly agree.”
Risk preferences	Continuous variable of agreement to the statement: “In general, I am willing to take risks.” 1 = “Strongly disagree, 2 = “Disagree,” 3 = “Somewhat disagree,” 4 = “Neither agree, nor disagree,” 5 = “Somewhat agree,” 6 = “Agree,” 7 = “Strongly agree.”
Fear of covid	Continuous variable of agreement to the statement: “I fear getting sick with COVID-19.” 1 = “Strongly disagree, 2 = “Disagree,” 3 = “Somewhat disagree,” 4 = “Neither agree, nor disagree,” 5 = “Somewhat agree,” 6 = “Agree,” 7 = “Strongly agree.”
Finances if sick	Continuous variable of answer to the question: “How would your financial situation change if the main provider of your family got sick with COVID-19 and could not work for one month?” 1 = “Would deteriorate a lot,” 2 = “Would deteriorate,” 3 = “Would somewhat deteriorate,” 4 = “Would neither improve, nor deteriorate,” 5 = “Would somewhat improve,” 6 = “Would improve,” 7 = “Would improve a lot.”
Age	Numerical answer to the question: “What is your age?”

Variable	Definition
Woman	Binary variable of answer to the question: "What is your gender?" 1 = Woman; 0 = Man.
Higher education	Binary variable of answer to the question: "What is your education?" 1 = Higher; 0 = Otherwise.
Employed part-time	Binary variable of answer to the question: "What is your employment status?" 1 = Work part-time; 0 = Otherwise.
Self-employed	Binary variable of answer to the question: "What is your employment status?" 1 = Self-employed; 0 = Otherwise.
Retired	Binary variable of answer to the question: "What is your employment status?" 1 = Retired; 0 = Otherwise.
Student	Binary variable of answer to the question: "What is your employment status?" 1 = Student; 0 = Otherwise.
Unemployed	Binary variable of answer to the question: "What is your employment status?" 1 = Unemployed; 0 = Otherwise.
Other	Binary variable of answer to the question: "What is your employment status?" 1 = Other; 0 = Otherwise.
Household size	Numerical answer to the question: "How many people live in your household?"
Married or live with partner	Binary variable of the answer to the question: "What is your marital status?" 1 = Married or live with partner; 0 = Single or divorced.
No work from home	Binary variable of the answer to the question: "Does your job allow you to work from home?" 1 = No; 0 = Otherwise.
Lithuanian	Binary variable of the answer to the question: "What is your nationality?" 1 = Lithuanian; 0 = Otherwise.
City or town	Binary variable of the answer to the question: "How would you define the size of the settlement you live in?" 1 = City or town; 0 = Rural area
Vilnius city	Binary variable of the answer to the question: "Which municipality do you live in?" 1 = Vilnius City Municipality; 0 = Otherwise.
Kaunas city	Binary variable of the answer to the question: "Which municipality do you live in?" 1 = Kaunas City Municipality; 0 = Otherwise.

Variable	Definition
Klaipeda city	Binary variable of the answer to the question: "Which municipality do you live in?" 1 = Klaipeda City Municipality; 0 = Otherwise.
500–999 euros	Binary variable of the answer to the question: "What is the aggregate net income of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?" 1 = 500–999 euros; 0 = Otherwise.
1000—1999 euros	Binary variable of the answer to the question: "What is the aggregate net in- come of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?" 1 = 1,000—1,999 euros; 0 = Otherwise.
2000—2999 euros	Binary variable of the answer to the question: "What is the aggregate net in- come of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?" 1 = 2,000—2,999 euros; 0 = Otherwise.
>3000 euros	Binary variable of the answer to the question: "What is the aggregate net in- come of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?" 1 = More than 3,000 euros; 0 = Otherwise.
Prefer not to answer	Binary variable of the answer to the question: "What is the aggregate net in- come of your household in euros (including work-related income, unemployment benefits, sickness benefits, scholarships, pensions, and other types of income)?" 1 = Prefer not to answer this question; 0 = Otherwise.

Table A2. Sample characteristics.

Characteristic	Frequency (%)	
	Survey sample	Lithuanian population
Age groups:		
18-29	16.8	17.2
30-39	15.0	15.7
40-49	16.4	16.1
50-59	18.8	18.3
60-69	15.3	15.3
70+	17.7	17.5
Gender:		
Woman	55.4	54.3
Man	44.6	45.7
Size of settlement:		
City or town	67.0	67.3
Rural area	33.0	32.7
District:		
Alytus	4.9	4.9
Kaunas	20.3	20.2
Klaipeda	11.0	11.3
Marijampole	5.1	4.9
Panevezys	8.1	7.7
Siauliai	9.5	9.5
Taurage	3.4	3.3
Telsiai	4.4	4.6
Utena	4.6	4.6
Vilnius	28.7	29.0
Education:		
Higher	70.3	
Other	29.7	
Nationality:		
Lithuanian	92.8	
Other	7.2	
Employment:		
Employed (full-time)	49.7	
Retired	22.7	
Unemployed	10.4	
Employed (part-time)	4.8	
Student	3.8	
Self-employed	3.4	
Other	5.2	
Household size:		
0-1	17.0	
2-3	59.4	

Characteristic	Frequency (%)	
	Survey sample	Lithuanian population
4-5	22.2	
6-7	1.4	
Marital status:		
Married or live with a partner	70.9	
Single or divorced	29.1	
Possibility to work from home:		
Yes	38.1	
No	44.7	
Somewhat	17.2	
Place of residence:		
Vilnius city	18.0	
Kaunas city	9.5	
Klaipeda city	3.4	
Other	69.1	
Income:		
0–499 euros	13.5	
500–999 euros	27.1	
1000—1999 euros	27.2	
2000—2999 euros	9.5	
>3000 euros	3.5	
Prefer not to answer	19.2	
In general, how much do you trust people you do not know personally?		
Do not trust at all	11.5	
Do not trust	20.0	
Do not trust somewhat	12.5	
Neither trust, nor distrust	32.7	
Trust somewhat	15.8	
Trust	6.5	
Trust completely	1.0	
In general, how much do you trust the country's government authorities?		
Do not trust at all	7.5	
Do not trust	12.8	
Do not trust somewhat	14.4	
Neither trust, nor distrust	17.9	
Trust somewhat	25.2	
Trust	19.7	
Trust completely	2.5	
In general, how much do you trust the country's healthcare system?		
Do not trust at all	6.6	
Do not trust	10.4	
Do not trust somewhat	12.5	
Neither trust, nor distrust	15.8	
Trust somewhat	25.4	
Trust	24.5	
Trust completely	4.8	
In general, how much do you trust science?		

Characteristic	Frequency (%)	
	Survey sample	Lithuanian population
Do not trust at all	1.0	
Do not trust	1.4	
Do not trust somewhat	3.0	
Neither trust, nor distrust	10.2	
Trust somewhat	15.1	
Trust	45.6	
Trust completely	23.7	
In general, how much do you trust pharmaceutical companies?		
Do not trust at all	8.2	
Do not trust	9.6	
Do not trust somewhat	11.7	
Neither trust, nor distrust	22.5	
Trust somewhat	23.1	
Trust	20.7	
Trust completely	4.2	
In general, how much do you trust the country's media?		
Do not trust at all	13.6	
Do not trust	15.9	
Do not trust somewhat	12.1	
Neither trust, nor distrust	20.4	
Trust somewhat	22.8	
Trust	13.6	
Trust completely	1.6	
In general, I am physically healthy:		
Strongly disagree	1.6	
Disagree	5.1	
Disagree somewhat	5.9	
Neither agree, nor disagree	12.2	
Agree somewhat	20.8	
Agree	37.5	
Strongly agree	16.9	
In general, my closest family members are physically healthy:		
Strongly disagree	1.5	
Disagree	3.5	
Disagree somewhat	8.2	
Neither agree, nor disagree	15.9	
Agree somewhat	19.5	
Agree	37.6	
Strongly agree	13.8	
Have you been diagnosed with COVID-19?		
Yes	7.3	
No	92.7	
Do you think you have had COVID-19, but it has not been diagnosed?		
Yes	14.5	
No	85.5	

Characteristic	Frequency (%)	
	Survey sample	Lithuanian population
How would your financial situation change if the main provider of your family got sick with COVID-19 and could not work for one month?		
Deteriorate a lot	17.8	
Deteriorate	21.8	
Deteriorate somewhat	25.6	
Neither deteriorate, nor improve	33.7	
Improve somewhat	0.5	
Improve	0.4	
Improve a lot	0.2	
I fear getting sick with COVID-19:		
Strongly disagree	6.4	
Disagree	5.7	
Disagree somewhat	4.0	
Neither agree, nor disagree	22.0	
Agree somewhat	12.5	
Agree	23.1	
Strongly agree	26.3	
In general, I am willing to take risks:		
Strongly disagree	12.7	
Disagree	23.2	
Disagree somewhat	11.9	
Neither agree, nor disagree	25.4	
Agree somewhat	15.7	
Agree	7.9	
Strongly agree	3.2	
The 5G mobile technology is directly related to the COVID-19 pandemic:		
Strongly disagree	61.3	
Disagree	17.2	
Disagree somewhat	2.4	
Neither agree, nor disagree	15.8	
Agree somewhat	1.2	
Agree	1.2	
Strongly agree	0.9	

Table A3. Summary statistics.

	N	Mean	Standard deviation
Dependent variables:			
Vaccination	973	5.366	2.091
Independent variables:			
Trust in strangers	973	3.448	1.473

	N	Mean	Standard deviation
Trust in government	973	4.095	1.609
Trust in healthcare	973	4.358	1.635
Trust in science	973	5.689	1.200
Trust in pharma	973	4.216	1.622
Trust in media	973	3.702	1.677
Control variables:			
Age	973	49.74	16.97
Woman	973	0.554	0.497
Higher education	973	0.703	0.457
Employed full-time	973	0.496	0.500
Employed part-time	973	0.048	0.214
Self-employed	973	0.034	0.181
Retired	973	0.227	0.419
Student	973	0.038	0.191
Unemployed	973	0.104	0.305
Other	973	0.052	0.223
Household size	973	2.601	1.219
Married or live with partner	973	0.709	0.454
No work from home	973	0.447	0.497
Lithuanian	973	0.928	0.259
City or town	973	0.670	0.470
Vilnius city	973	0.180	0.384
Kaunas city	973	0.095	0.293
Klaipeda city	973	0.034	0.181
0–499 euros	973	0.135	0.341
500–999 euros	973	0.271	0.445

	N	Mean	Standard deviation
1000—1999 euros	973	0.272	0.445
2000—2999 euros	973	0.094	0.293
>3000 euros	973	0.035	0.184
Prefer not to answer	973	0.192	0.394
Personal health	973	5.253	1.439
Family health	973	5.165	1.391
Diagnosed with covid	973	0.073	0.260
Think sick with covid	973	0.145	0.352
Finances if sick	973	2.794	1.147
Fear of covid	973	5.033	1.787
Risk preferences	973	3.448	1.626
Conspiracy beliefs	973	1.860	1.338

Table A4. Correlation matrix of main variables.

	Vaccination	Trust in strangers	Trust in government	Trust in healthcare	Trust in science	Trust in pharma	Trust in media
Vaccination	1.0000						
Trust in strangers	0.0730	1.0000					
	(0.023)						
Trust in government	0.4260	0.3301	1.0000				
	(<0.001)	(<0.001)					
Trust in healthcare	0.3867	0.2546	0.7523	1.0000			
	(<0.001)	(<0.001)	(<0.001)				
Trust in science	0.4247	0.1030	0.5021	0.5246	1.0000		
	(<0.001)	(<0.001)	(<0.001)	(<0.001)			
Trust in pharma	0.4090	0.1879	0.6156	0.5610	0.4581	1.0000	
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)		
Trust in media	0.3569	0.2347	0.5577	0.4959	0.3522	0.5388	1.0000
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	

Note: The table shows Spearman's correlation coefficients. P-values are provided in parentheses.

Table A5. Results of ordered logistic regression analysis with single trust variable and no controls.

Model	Independent variable	Logit coefficient
1.1	Trust in strangers	0.090**
		(0.041)
1.2	Trust in government	0.576***
		(0.042)
1.3	Trust in healthcare	0.496***
		(0.040)
1.4	Trust in science	0.695***
		(0.055)
1.5	Trust in pharma	0.552***
		(0.041)
1.6	Trust in media	0.435***
		(0.039)

Note: The table reports the logit coefficients obtained by estimating the ordered logit regression model with a single trust variable and no controls. The dependent variable is a 7-category variable *vaccination*. Standard errors are presented in parentheses below the coefficients. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6. Results of ordered logistic regression analysis with single trust variable and all controls.

Model	Independent variable	Logit coefficient
2.1	Trust in strangers	0.065
		(0.047)
2.2	Trust in government	0.484***
		(0.047)
2.3	Trust in healthcare	0.424***
		(0.044)
2.4	Trust in science	0.526***
		(0.062)
2.5	Trust in pharma	0.495***
		(0.046)
2.6	Trust in media	0.313***
		(0.043)

Note: The table reports the logit coefficients of trust variables obtained by estimating the ordered logit regression model with a single trust variable and all controls. We control for respondents' socio-demographic characteristics, health, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of COVID-19, and risk preferences. The dependent variable is a 7-category variable *vaccination*. Standard errors are presented in parentheses below the coefficients. $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7. Results of ordered logistic regression analysis with all trust variables and controls.

Independent variable	Logit coefficient
Trust in strangers	-0.101**
	(0.051)
Trust in government	0.223***
	(0.074)
Trust in healthcare	0.064
	(0.067)
Trust in science	0.236***
	(0.070)
Trust in pharma	0.284***
	(0.058)
Trust in media	0.032
	(0.052)
Controls:	
Age	0.011*
	(0.006)
Woman	-0.483***
	(0.146)
Higher education	0.089
	(0.160)
Employed part-time	0.027
	(0.317)
Self-employed	-0.352
	(0.362)
Retired	0.078
	(0.255)
Student	0.059
	(0.382)
Unemployed	0.138
	(0.230)
Other	-0.615**
	(0.292)
Household size	-0.207***
	(0.066)
Married or live with partner	0.102
	(0.173)
No work from home	-0.167
	(0.144)
Lithuanian	-0.028
	(0.256)
City or town	0.004
	(0.165)
Vilnius city	-0.128
	(0.196)
Kaunas city	-0.397
	(0.242)
Klaipeda city	-1.130***
	(0.347)
500–999 euros	0.259
	(0.227)

Independent variable	Logit coefficient
1000—1999 euros	0.309
	(0.249)
2000—2999 euros	0.774**
	(0.332)
>3000 euros	0.787*
	(0.432)
Prefer not to answer	0.501**
	(0.252)
Personal health	-0.095
	(0.064)
Family health	0.007
	(0.062)
Diagnosed with covid	0.335
	(0.258)
Think sick with covid	-0.630***
	(0.184)
Finances if sick	-0.144**
	(0.063)
Fear of covid	0.383***
	(0.044)
Risk preferences	0.061
	(0.045)
Conspiracy beliefs	-0.357***
	(0.055)

Note: The table reports the logit coefficients obtained by estimating the ordered logit regression model with all trust variables and all controls (baseline specification). The dependent variable is a 7-category variable *vaccination*. Standard errors are presented in parentheses below the coefficients. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A8. Likelihood ratio tests.

Models compared	LR chi-sq.	DF	P-value
1.1 vs 2.1	367.19	30	<0.001
1.2 vs 2.2	275.45	30	<0.001
1.3 vs 2.3	297.11	30	<0.001
1.4 vs 2.4	267.39	30	<0.001
1.5 vs 2.5	298.56	30	<0.001
1.6 vs 2.6	289.71	30	<0.001
2.1 vs 3	168.24	5	<0.001
2.2 vs 3	60.07	5	<0.001
2.3 vs 3	76.02	5	<0.001
2.4 vs 3	96.13	5	<0.001
2.5 vs 3	47.24	5	<0.001
2.6 vs 3	116.39	5	<0.001

Note: The table reports results from Likelihood ratio tests. The tests were conducted to evaluate the difference between nested models, that is, a more restrictive and a less restrictive model. The first column of the table shows which models are compared. LR chi-sq. gives the chi-square statistic for the likelihood ratio test. DF gives the degrees of freedom equal to the difference in the number of degrees of freedom between the two models that are compared.

Table A9. Results of multiple linear regression analysis.

VARIABLES	Coefficients
Trust in strangers	-0.037
	(0.042)
Trust in government	0.130**
	(0.064)
Trust in healthcare	0.087
	(0.058)
Trust in science	0.186***
	(0.064)
Trust in pharma	0.244***
	(0.048)
Trust in media	0.027
	(0.043)
Personal health	-0.059
	(0.049)
Family health	-0.019
	(0.049)
Diagnosed with covid	0.202
	(0.204)
Think sick with covid	-0.527***
	(0.164)
Finances if sick	-0.116**
	(0.051)
Fear of covid	0.287***
	(0.039)
Risk preferences	0.067*
	(0.038)
Conspiracy beliefs	-0.304***
	(0.051)
Age	0.009*
	(0.005)
Female	-0.287***
	(0.110)
Higher education	0.041
	(0.127)
Employed part-time	0.050
	(0.207)
Self-employed	-0.243
	(0.283)
Retired	-0.019
	(0.181)
Student	0.006
	(0.328)
Unemployed	-0.049
	(0.202)
Other	-0.528*
	(0.275)
Household size	-0.186***
	(0.059)

VARIABLES	Coefficients
Married or live with partner	0.130
	(0.142)
No work from home	-0.244**
	(0.112)
Lithuanian	0.061
	(0.220)
City or town	-0.044
	(0.132)
Vilnius city	0.003
	(0.142)
Kaunas city	-0.129
	(0.181)
Klaipeda city	-0.736**
	(0.290)
500-999 euros	0.136
	(0.179)
1000-1999 euros	0.301
	(0.196)
2000-2999 euros	0.512*
	(0.274)
>3000 euros	0.551
	(0.358)
Prefer not to answer	0.418**
	(0.210)
Constant	2.030***
	(0.599)
Observations	973
R-squared	0.443

Note: The table reports results obtained by estimating the baseline specification of our model using the OLS estimator. Variable vaccination is the dependent variable. It is regressed on all trust variables and all controls in a single model. We control for socio-demographic characteristics, health status, experience with COVID-19, conspiracy beliefs, fears of getting sick with COVID-19, impact on finances in the case of getting sick with COVID-19, and risk preferences. Robust standard errors are provided in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

APPENDIX B

Experimental instructions

//Consent//

Informed Consent

The purpose of this experiment is to analyze human behavior and beliefs related to climate change and climate policies. The experiment is designed and conducted by researchers from Vilnius University and the University of Milan – Laura Galdikiene (contact person, laura.galdikiene@evaf.stud.vu.lt), Agne Kajackaite and Jurate Jaraite. Please feel free to contact the experimenter if you have any questions about the experiment.

During this experiment, you will have to answer multiple questions, some of which involve decision-making. You will also be asked to provide information about your socio-demographic characteristics and political beliefs. By participating in this experiment, you will contribute to the deepening of scientific knowledge. The experiment will take up to 7 minutes to complete.

We will record your responses. The collected data will not allow the identification of a specific person. At the project's conclusion, the data will be stored in a data archive accessible to authorized individuals outside the research team and may be made publicly available.

Participation in the experiment is entirely voluntary. You are free to withdraw at any time, without providing a reason and without facing any penalty. If you choose to withdraw, the data you provided during the experiment will be deleted.

You will receive $1.20 (£1.00) in exchange for your participation in this study, with the opportunity to earn a bonus payment. Bonus payments may take up to 1 month to calculate and process.

We kindly request your consent to participate in the experiment and to the associated data processing. Your consent serves as the legal basis for data processing.

If you understand and agree to participate in the study, please select "I consent" and click "Next".

If you do not consent to take part in the study, please select "I do not consent" and click "Next".

- I consent
- I do not consent

//No Consent//

As you have indicated that you do not consent to participate in this study, please return this submission on Prolific by selecting the "Stop without completing" button.

//Prolific ID//

What is your Prolific ID?

(Please note that this response should auto-fill with correct ID)

//Screener//

Before you begin, please answer a couple of questions about yourself.

In what country do you currently reside?

- USA
- Other

What is your sex, as recorded on legal/official documents?

- Male
- Female

In general, what is your political affiliation?

- Democrat
- Republican
- Independent
- Other
- None

//Demographics//

What is your current age in years? (please select from the dropdown list)

What is the highest level of education you have completed?

- Some high school or less
- High school diploma or GED
- Some college, but no degree
- Associates or technical degree
- Bachelor's degree
- Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS, etc.)

What was your total household income before taxes during the past 12 months (in USD)?

- Less than 25,000
- 25,000-49,999

- 50,000-74,999
- 75,000-99,999
- 100,000-124,999
- 125,000-149,999
- 150,000 or more

What is your employment status?

- Full-time
- Part-time
- Due to start a new job within the next month
- Unemployed (and job seeking)
- Not in paid work (e.g., homemaker, retired, or disabled)
- Other

//Failed Screener// *[displayed to participants who do not answer "Republican" or "Democrat" to the question "In general, what is your political affiliation?" or who answer "Other" to the question "In what country do you currently reside?"]*

You are ineligible for this study as you have provided information which is inconsistent with your Prolific prescreening responses. Please return your submission on Prolific by selecting the **"**Stop without completing**"** button.

//Welcome//

Welcome to the experiment!

For participating in this experiment you will receive a fixed reward of $1.20 (£1.00), and there is also the possibility of receiving a bonus payment. The bonus payment will be determined based on your answers and luck.

You will have a limited time to answer some questions, so **it is crucial for you to focus on your screen throughout the entire experiment**.

Please think about your answers carefully and report them truthfully.

//Attention 1//

This is an attention check. The test you are about to take part in is very simple. When asked to choose a letter, you must select the letter "D". You have one try to answer this question.

Based on the text you read above, which letter have you been asked to choose?

- A
- B
- C
- D
- E

//Skepticism intro//

On the next page, you will be asked to indicate your agreement or disagreement with five statements on climate change.

//Skepticism//

On a scale frow 1 to 7, how much do you agree or disagree with each of the statements below? **1 means you "Strongly Disagree**, and **7 means you "Strongly Agree"**.

1(Strongly Disagree)/ 2(Disagree)/ 3(Somewhat Disagree)/ 4(Neither Agree nor Disagree)/ 5(Somewhat Agree)/ 6(Agree)/ 7(Strongly Agree)

Climate change is happening.

Climate change is mostly human caused.

I am worried about climate change.

Climate change will harm me personally.

Climate change will harm many people in the US.

//Priors Intro//

On the next page, you will be asked to answer one question about Americans' support for climate policies. **You can earn a bonus if you answer the question correctly**. You will have **3 minutes** to answer the question and submit the page.

//Priors//

BONUS QUESTION

Please answer the question below. For this question, 5% of participants who guess closest to the correct number will be paid $0.50 (£0.40). In the case of a tie, the winner will be decided randomly.

Recently many people in the US were surveyed and asked about their support for certain climate policies. The respondents have diverse socio-demographic characteristics and political beliefs. Their responses represent the views of registered voters in the United States.

What is your estimation? Out of 100 surveyed individuals, how many indicated their support for this policy: **Requiring fossil fuel companies to pay a carbon tax and using the money to reduce other taxes (such as income tax) by an equal amount?**

Please use the slider below to answer the question.

//Treatment Intro// *[displayed only to participants in the Information treatment]*

On the next page, you will learn how many Americans support the climate policy. You will also learn how the actual support compares to your guess. Please read the information carefully.

//Treatment// *[displayed only to participants in the Information treatment]*

The survey asked, "How much do you support or oppose the following policy: **Requiring fossil fuel companies to pay a tax on the carbon they produce and using the money to reduce other taxes (such as income tax) by an equal amount?**"

Actual support: 66%

Your guessed support: xx%

After the experiment, we can send you the detailed results of this survey. Please send a message to the experimenter if you wish to receive this information.

[showing of "Next" button is delayed by 5s]

//Posteriors Intro//

On the next page, you will be asked to answer one more question. **You can earn a bonus if you answer the question correctly.**

//Posteriors//

BONUS QUESTION

Please answer the question below. For this question, 5% of participants who guess closest to the correct number will be paid $0.50 (£0.40). In the case of a tie, the winner will be decided randomly.

Recently we surveyed 100 people on Prolific and asked about their support for certain climate policies. The respondents come from the US and have diverse socio-demographic characteristics.

What is your estimation? Out of 100 surveyed individuals, how many indicated their support for this policy: **Requiring fossil fuel companies to pay a carbon tax and using the money to reduce other taxes (such as income tax) by an equal amount?**

Please use the slider below to answer the question.

//Attention Check 2//

This is an attention check. The color test you are about to take part in is very simple. When asked to enter a color you must select “Yellow”. You have one try to answer this question.

Based on the text you read above, what color have you been asked to enter?

- Red
- White
- Blue
- Orange
- Yellow

//Donation 1//

On the next page, you will make a decision about money. **If you are selected, your decision will be implemented and you will be paid up to $10 (£8) as a bonus.**

//Donation 2//

BONUS QUESTION

You can divide $10 (£8) between yourself and the Citizens' Climate Lobby, i.e., a nonprofit, nonpartisan, grassroots advocacy climate change organization operating in the US as well as internationally. **The Citizens' Climate Lobby is an organization focused on lobbying for national policies to address climate crisis, including an introduction of a carbon tax, as well as other climate policies.** You can find more information about the organization here.

Below, we will ask you to decide about how much of the $10 (£8) you want to donate to this climate change organization. After the experiment, we will randomly select 1% of participants and implement their decisions. That is, if you are selected, the amount you chose to donate will be actually transferred to the Citizens' Climate Lobby and the rest of the $10 (£8) will be paid to you as a bonus.

After the experiment, we can send you proof that the decisions of selected (anonymous) participants were implemented. Please send a message to the

experimenter if you wish to receive this information. It may take up to 1 month to respond to your request.

Your decision: How much would you like to donate to the Citizens' Climate Lobby? (please select a number from a dropdown list below)

[The amounts in the dropdown list are presented from $0 to $10 with increments of $0.10.]

//Visibility//

After the experiment, we would like to share information regarding your decision to donate to the Citizens' Climate Lobby with another participant from this experiment who is affiliated with the same political party as yourself. If you agree, some of you will be randomly matched with the other participant. The participant you are matched with will be informed about your political affiliation, but no other personal data will be shared. The matching process will occur after the experiment concludes, meaning it will not happen in real-time.

On a scale from 1 to 7, how willing are you to share information about your donation decision with another participant of this experiment?

1 (Not at all willing)/ 2 (Slightly unwilling)/ 3 (Somewhat unwilling)/ 4 (Neither willing or unwilling)/ 5 (Somewhat willing)/ 6 (Moderately willing)/ 7 (Very willing)

Do you agree that we share information about your donation decision with another participant of this experiment?

- Yes
- No

//Meeting//

Within two weeks after the experiment, some of you will be chosen for a 5-minute live video meeting to discuss climate policies. If you agree and are selected, you will be paired with another participant from this experiment who shares the same political party affiliation as you. At the beginning of the meeting, the matched participant will be informed about your donation decision to the Citizens' Climate Lobby and your political affiliation, with no other personal data shared, and you will be informed about the donation decision of the other participant too.

What is the lowest reward (in USD) you are willing to accept for participating in this meeting? [Please select from the dropdown list below]

[*dropdown list from $0 to 50 with $0.10 increment*]

Are you willing to participate in this 5-minute live video meeting with another participant of this experiment? If you agree and are selected, we will contact you on Prolific to arrange the meeting after the experiment has concluded.

- Yes
- No

//SupportIntro2//

On the next page, you will be asked to express your support for or opposition to four climate policies.

//PolicySupport//

How much do you support or oppose the following policies**?**

Provide tax rebates for people who purchase energy-efficient vehicles or solar panels.

Generate renewable energy (solar and wind) on public land in the US.

Require fossil fuel companies to pay a carbon tax and use the money to reduce other taxes (such as income tax) by an equal amount.

Transition the US economy (including electric utilities, transportation, buildings, and industry) from fossil fuels to 100% clean energy by 2050.

Strongly Oppose/ Somewhat Oppose/ Somewhat Support/ Strongly Support

---

//QuestionnaireIntro//

Finally, please answer some questions about yourself and the experiment. *[displayed only to participants in the Information treatment]*

Finally, please answer some questions about yourself and the experiment. *[displayed only to participants in the No information treatment]*

//Questionnaire// *[displayed only to participants in the Information treatment]*

Did you find the information that 66% of Americans support "Requiring fossil fuel companies to pay a carbon tax and using the money to reduce other taxes (such as income tax) by an equal amount)" credible?

- Yes
- No

Where would you place yourself along the political spectrum?

- Conservative
- Moderate
- Liberal
- Other

Are you a parent?

- Yes
- No

What US state do you currently live in?

[selection from a dropdown list]

Please enter your postal code *[text entry]*

//Thank you//

Thank you for taking part in this study!

You earned a fixed reward of $1.2 (£1.00). It may take up to 1 month to calculate and process bonus payments. Thank you for your patience!

If you have any questions about the study or your payment, you can contact the experimenter on Prolific or send an email to laura.galdikiene@evaf.stud.vu.lt.

Do you have any comments about this experiment? (max 250 characters)

Please, press “Next” for the Completion code.

//Completion Code//

Please return to Prolific and enter the following completion code to register your submission: **xxxxx**

//Post-experiment//

//Visibility// *[this message is sent to two selected pairs of participants to inform them that we shared information about their donation decision with the participants they were matched with]*

Thank you for participating in our experiment on climate change. During the experiment, you had the opportunity to choose the amount you wished to donate to the Citizens' Climate Lobby. You consented to sharing your donation decision with another participant from the experiment who shares the same political party affiliation as you. We shared your decision anonymously with the other participant. Additionally, we inform you that the participant you were matched with donated **$X** to the climate organization.

//MeetingInvitation// *[this message is sent to a randomly selected pair of participants who agreed to participate in a video meeting and had a reservation price below $5]*

Recently you participated in an experiment on climate change. During the study, you agreed to engage in a 5-minute video meeting with another participant who shares the same political party affiliation as you to discuss climate policies. We're pleased to inform you that you have been selected for this meeting. During the meeting you'll be asked to share your insights and support for various climate policies. At the start of the meeting, the other participant will be informed about the amount you chose to donate to the Citizens’ Climate Lobby, and you will be informed of their choice.

For your participation in the video meeting, you will receive a **reward of £4.** Please note that your submission approval and payment are dependent on your video and microphone being turned on during the meeting. This also includes the three-minute sign-up time.

Please confirm your availability for the scheduled time. When prompted for your name and email on the scheduling form, kindly enter your Prolific ID and your Prolific email in the format participantid@email.prolific.com, respectively. If you are unable to attend, please refrain from scheduling the meeting, and return your submission on Prolific.

Once the meeting is scheduled, we will send you a Zoom meeting invite link to your Prolific inbox. Prior to the meeting, please ensure that your device has a functioning webcam and microphone. You can join the meeting directly from your web browser without needing to download Zoom. Remember to use your Prolific ID instead of your name during the meeting.

Throughout the study, we will not collect or store any personal data, and no video recordings of the meeting will be made. We kindly ask all participants to maintain respect for others' views and opinions. In the event of harassment or the use of inappropriate language, participants may be rejected and forfeit any reward. Following the scheduling of the meeting, you will receive a consent form to be completed before the meeting.

Once the meeting is scheduled, please return to Prolific and enter the **completion code: XXXXX**. Should you have any questions or concerns, please feel free to contact the experimenter via the Prolific messaging system or email: laura.galdikiene@evaf.stud.vu.lt.

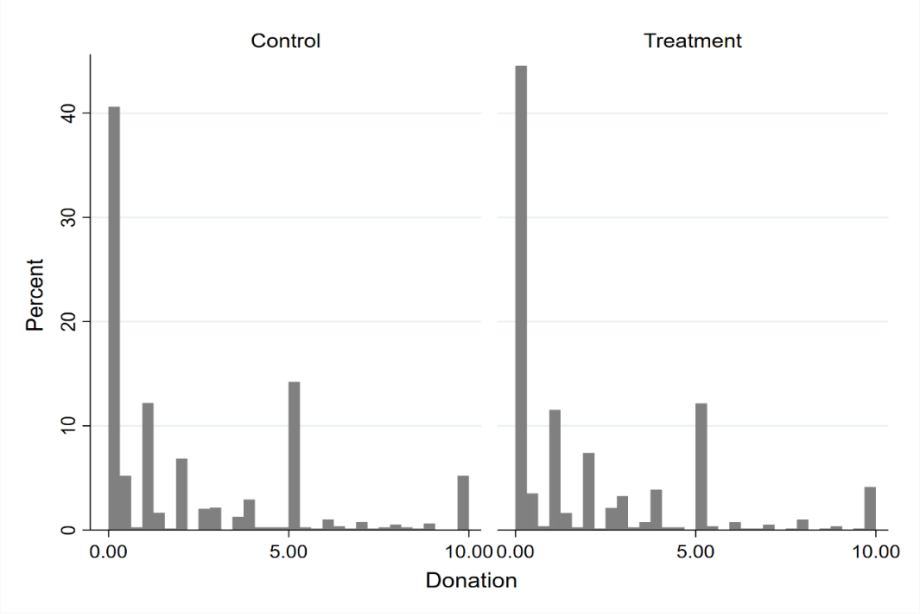


Fig B1. Distribution of donations. The figure displays the distribution of donations to the climate change organization by experimental conditions.

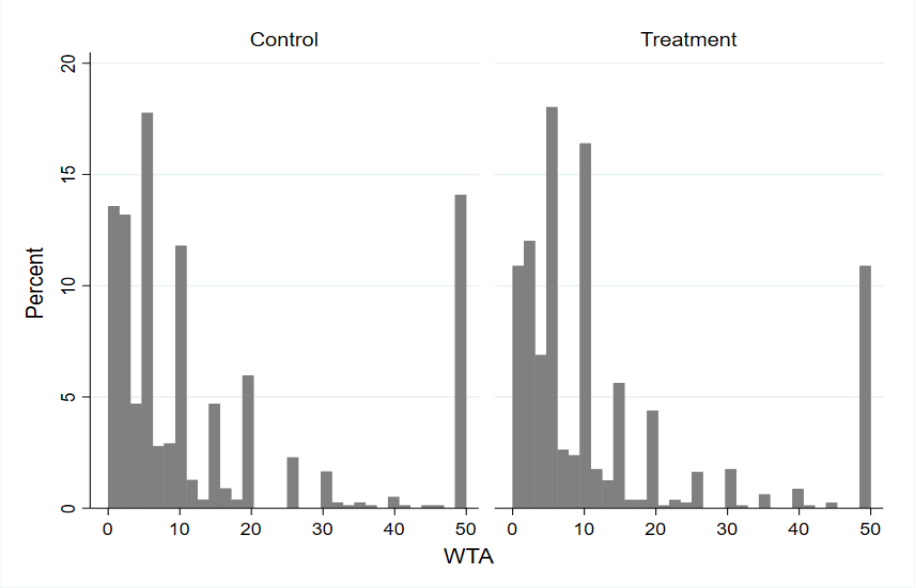


Fig B2. Distribution of willingness to accept. The figure displays the distribution of willingness to accept reward for participating in a policy discussion by experimental conditions.

Table B1. Belief updating (OLS)

Posterior belief	(1) Full sample	(2) Full sample	(3) Priors > Actual	(4) Priors < Actual
Treatment	1.403**	1.483**	-10.298***	9.019***
	(0.713)	(0.719)	(0.840)	(0.856)
Female		-0.127	-0.306	-1.297
		(0.711)	(0.837)	(0.906)
Republican		-1.680	-0.660	-2.879
		(1.459)	(1.746)	(1.753)
Age		-0.019	-0.047	0.020
		(0.029)	(0.033)	(0.035)
Income: $25-50k		0.572	1.976	0.055
		(1.328)	(1.508)	(1.589)
Income: $50-75k		0.309	2.393	-0.159
		(1.369)	(1.496)	(1.663)
Income: $75-100k		-0.742	1.140	-0.192
		(1.355)	(1.510)	(1.566)
Income: $100-125k		0.962	1.969	0.768
		(1.623)	(1.909)	(1.909)
Income: $125-150k		2.605	0.359	4.151**
		(1.584)	(1.950)	(2.006)
Income: >$150k		0.145	1.673	0.209
		(1.481)	(1.807)	(1.800)
Education: High school		1.553	-8.393	-0.100
		(4.361)	(7.241)	(2.306)
Education: Some college		2.346	-6.321	1.558
		(4.321)	(7.179)	(2.220)
Education: Associates/ technical		3.504	-6.309	2.167
		(4.372)	(7.222)	(2.254)
Education: Bachelor's degree		1.051	-8.458	0.987
		(4.299)	(7.190)	(2.054)
Education: Graduate degree		2.059	-7.807	1.970
		(4.362)	(7.201)	(2.199)
Employment: Part-time		-0.322	0.546	-0.099
		(1.060)	(1.155)	(1.288)
Employment: Due to start		-3.273	0.115	-1.095
		(2.771)	(1.874)	(3.771)
Employment: Unemployed		-0.302	1.954	-0.520
		(1.414)	(1.794)	(1.552)
Employment: Non-paid work		0.133	2.620**	-0.066
		(1.162)	(1.206)	(1.415)
Employment: Other		4.110	3.915*	3.695
		(2.705)	(2.090)	(3.305)
Parent		-0.369	-0.412	-0.697
		(0.825)	(0.917)	(1.015)
Political spectrum: Moderate		2.997**	1.197	0.215

Posterior belief	(1) Full sample	(2) Full sample	(3) Priors > Actual	(4) Priors < Actual
		(1.367)	(1.499)	(1.593)
Political spectrum: Liberal		3.211**	0.391	2.330
		(1.538)	(1.875)	(1.858)
Political spectrum: Other		5.964	2.009	-5.406***
		(10.205)	(6.631)	(1.862)
Constant	65.256***	63.223***	86.683***	55.179***
	(0.643)	(4.704)	(7.534)	(3.301)
Observations	1,587	1,587	624	890
R-squared	0.002	0.040	0.230	0.151

Note: The table reports OLS estimates with robust standard errors in parentheses. The dependent variable, posterior belief, represents the post-treatment belief about the share of American individuals expressing support for carbon taxation in a Prolific survey conducted before the experiment. Columns 1 and 2 depict results where the dependent variable is regressed on the treatment variable using the full sample. Columns 3 and 4 display results for sub-samples of individuals who overestimate and underestimate the support for carbon taxation, respectively. Variables treatment, female, Republican, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative.

Table B2. Treatment effect on donation (Tobit)

Donation	(1)	(2)	(3)
Treatment	-0.385	-0.353	-0.431*
	(0.235)	(0.229)	(0.220)
Female		0.608***	0.363
		(0.235)	(0.226)
Republican		-1.387***	-0.530
		(0.496)	(0.476)
Age		0.0416***	0.0478***
		(0.00943)	(0.00914)
Income: $25-50k		0.988**	0.827*
		(0.451)	(0.435)
Income: $50-75k		0.926**	0.773*
		(0.461)	(0.444)
Income: $75-100k		1.426***	1.463***
		(0.474)	(0.457)
Income: $100-125k		1.645***	1.442***
		(0.531)	(0.513)
Income: $125-150k		1.578***	1.427***
		(0.558)	(0.538)
Income: >$150k		0.824	0.563

Donation	(1)	(2)	(3)
		(0.539)	(0.519)
Education: High school		3.486*	3.889*
		(2.093)	(2.057)
Education: Some college		3.459*	3.832*
		(2.085)	(2.049)
Education: Associates/ technical		3.601*	4.038*
		(2.097)	(2.060)
Education: Bachelor's degree		3.268	3.559*
		(2.079)	(2.043)
Education: Graduate degree		3.429	3.439*
		(2.091)	(2.053)
Employment: Part-time		-0.713**	-0.602*
		(0.359)	(0.346)
Employment: Due to start		0.984	-0.0591
		(1.658)	(1.575)
Employment: Unemployed		-0.653	-0.476
		(0.497)	(0.479)
Employment: Non-paid work		-0.339	-0.0688
		(0.373)	(0.359)
Employment: Other		0.00724	0.0929
		(0.881)	(0.844)
Parent		0.347	0.284
		(0.259)	(0.249)
Political spectrum: Moderate		0.793*	0.282
		(0.458)	(0.440)
Political spectrum: Liberal		0.813	-0.537
		(0.522)	(0.506)
Political spectrum: Other		1.869	2.429
		(2.464)	(2.340)
Climate change happening			0.185
			(0.131)
Climate change human-caused			0.142
			(0.104)
Worried about climate change			0.494***
			(0.143)
Personally harmed by climate change			0.270**
			(0.133)
Americans harmed by climate change			0.0425
			(0.154)
Constant	1.088***	-5.250**	-11.17***
	(0.170)	(2.202)	(2.240)
Observations	1,587	1,587	1,587
Pseudo R-squared	0.0004	0.0218	0.0497

Note: The table reports Tobit estimates, with standard errors in parentheses. The dependent variable, donation, indicates the decision to donate to a climate change organization. Column 1 shows results where the dependent variable is regressed on the treatment variable without any

controls. Columns 2 and 3 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B3. Treatment effect on donation by perception gap

Donation	(1) Prior < Actual	(2) Prior < Actual	(3) Prior ≥ Actual	(4) Prior ≥ Actual
Treatment	-0.031	0.040	-0.768**	-0.657**
	(0.258)	(0.252)	(0.338)	(0.333)
Perception gap	-0.019**	0.001	0.020	0.010
	(0.009)	(0.009)	(0.019)	(0.018)
T x Perception gap	0.005	-0.001	0.019	0.011
	(0.012)	(0.011)	(0.028)	(0.026)
Female		0.199		0.201
		(0.176)		(0.220)
Republican		-0.430		-0.092
		(0.512)		(0.421)
Age		0.023***		0.042***
		(0.007)		(0.009)
Income: $25-50k		0.301		0.248
		(0.285)		(0.375)
Income: $50-75k		0.348		0.209
		(0.292)		(0.376)
Income: $75-100k		0.523*		1.057**
		(0.301)		(0.445)
Income: $100-125k		0.661*		0.882*
		(0.343)		(0.468)
Income: $125-150k		0.416		0.975**
		(0.402)		(0.479)
Income: >$150k		0.076		0.346
		(0.332)		(0.452)
Education: High school		1.523***		1.647
		(0.585)		(1.100)
Education: Some college		1.551***		1.480
		(0.578)		(1.079)
Education: Associates/ technical		1.271**		1.950*
		(0.609)		(1.127)
Education: Bachelor’s degree		1.536***		1.454

Donation	(1) Prior < Actual	(2) Prior < Actual	(3) Prior ≥ Actual	(4) Prior ≥ Actual
		(0.577)		(1.088)
Education: Graduate degree		1.550**		1.056
		(0.611)		(1.090)
Employment: Part-time		0.177		-0.733**
		(0.265)		(0.311)
Employment: Due to start		1.140		-2.915***
		(0.750)		(0.404)
Employment: Unemployed		-0.311		-0.134
		(0.303)		(0.409)
Employment: Non-paid work		0.228		-0.215
		(0.298)		(0.337)
Employment: Other		0.549		-0.114
		(0.695)		(0.786)
Parent		-0.065		0.136
		(0.183)		(0.251)
Political spectrum: Moderate		0.241		-0.198
		(0.402)		(0.413)
Political spectrum: Liberal		-0.082		-0.259
		(0.548)		(0.445)
Political spectrum: Other		-0.609		1.592
		(0.406)		(1.242)
Climate change happening		0.023		0.130
		(0.070)		(0.108)
Climate change human-caused		0.020		0.050
		(0.061)		(0.089)
Worried about climate change		0.198**		0.339**
		(0.094)		(0.135)
Personally harmed by climate change		0.163		0.142
		(0.102)		(0.129)
Americans harmed by climate change		-0.003		-0.144
		(0.118)		(0.127)
Constant	2.123***	-2.750***	2.473***	-3.905***
	(0.188)	(0.907)	(0.266)	(1.330)
Observations	890	890	697	697
R-squared	0.008	0.139	0.019	0.156

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, donation, indicates the decision to donate to the climate change organization. It is regressed on the treatment variable, variable perception gap measured as the absolute difference between prior beliefs about public support for carbon taxation and the actual support, as well as the interaction term of the perception gap with the treatment variable. Column 1 shows results without any controls. Columns 1-2 display results for the sub-sample of individuals who underestimate the support for carbon taxation. Columns 3-4 show results for

the sub-sample of individuals who overestimate or guess the support for carbon taxation correctly. Columns 1 and 3 show results where the dependent variable is regressed on the treatment variable without any controls. Columns 2 and 4 present regression outcomes controlling for socio-demographic characteristics and climate skepticism. Variables treatment, female, Republican, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B4. Treatment effect on donation by party affiliation

Donation	(1)	(2)	(3)
Treatment	-0.260	-0.204	-0.215
	(0.203)	(0.203)	(0.203)
Republican	-0.948***	-0.670*	-0.263
	(0.198)	(0.352)	(0.340)
Treatment x Republican	0.085	0.003	-0.019
	(0.271)	(0.270)	(0.261)
Female		0.322**	0.197
		(0.142)	(0.137)
Age		0.030***	0.032***
		(0.006)	(0.006)
Income: $25-50k		0.420*	0.348
		(0.230)	(0.225)
Income: $50-75k		0.422*	0.353
		(0.230)	(0.225)
Income: $75-100k		0.776***	0.780***
		(0.253)	(0.250)
Income: $100-125k		0.965***	0.873***
		(0.290)	(0.277)
Income: $125-150k		0.848***	0.781***
		(0.310)	(0.300)
Income: >$150k		0.360	0.237
		(0.275)	(0.266)
Education: High school		1.500***	1.565***
		(0.355)	(0.530)
Education: Some college		1.440***	1.480***
		(0.344)	(0.524)
Education: Associates/ technical		1.511***	1.596***
		(0.380)	(0.549)
Education: Bachelor’s degree		1.418***	1.426***
		(0.336)	(0.521)
Education: Graduate degree		1.367***	1.255**

Donation	(1)	(2)	(3)
		(0.366)	(0.538)
Employment: Part-time		-0.321	-0.231
		(0.205)	(0.200)
Employment: Due to start		0.472	-0.033
		(0.856)	(0.811)
Employment: Unemployed		-0.311	-0.204
		(0.249)	(0.244)
Employment: Non-paid work		-0.099	0.044
		(0.230)	(0.225)
Employment: Other		0.240	0.293
		(0.559)	(0.535)
Parent		0.046	0.001
		(0.154)	(0.149)
Political spectrum: Moderate		0.395	0.122
		(0.292)	(0.282)
Political spectrum: Liberal		0.457	-0.203
		(0.338)	(0.336)
Political spectrum: Other		1.001	1.227
		(1.119)	(1.125)
Climate change happening			0.079
			(0.059)
Climate change human-caused			0.037
			(0.050)
Worried about climate change			0.260***
			(0.076)
Personally harmed by climate change			0.171**
			(0.078)
Americans harmed by climate change			-0.063
			(0.086)
Constant	2.658***	-1.091**	-3.413***
	(0.148)	(0.552)	(0.722)
Observations	1,587	1,587	1,587
R-squared	0.029	0.072	0.134

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, donation, indicates the decision to donate to the climate change organization. It is regressed on the treatment variable, a binary variable Republican and the interaction of the variable Republican with the treatment variable. Column 1 shows results without any controls. Columns 2 and 3 present regression outcomes with controls. Variables treatment, female, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B5. Treatment effect on policy support

Policy support	(1)	(2)	(3)
Treatment	0.021	0.021	-0.007
	(0.050)	(0.041)	(0.029)
Female		0.097**	0.001
		(0.041)	(0.029)
Republican		-0.533***	-0.155**
		(0.085)	(0.074)
Age		-0.007***	-0.005***
		(0.002)	(0.001)
Income: $25-50k		0.096	0.049
		(0.079)	(0.057)
Income: $50-75k		0.049	0.020
		(0.083)	(0.058)
Income: $75-100k		0.039	0.033
		(0.085)	(0.061)
Income: $100-125k		0.100	0.044
		(0.094)	(0.066)
Income: $125-150k		0.062	0.027
		(0.100)	(0.069)
Income: >$150k		0.111	0.006
		(0.097)	(0.065)
Education: High school		0.177	0.133
		(0.358)	(0.165)
Education: Some college		0.153	0.074
		(0.356)	(0.164)
Education: Associates/ technical		0.164	0.130
		(0.359)	(0.165)
Education: Bachelor's degree		0.143	0.049
		(0.355)	(0.161)
Education: Graduate degree		0.246	0.053
		(0.357)	(0.164)
Employment: Part-time		-0.102	-0.054
		(0.064)	(0.043)
Employment: Due to start		0.277	-0.132
		(0.252)	(0.107)
Employment: Unemployed		-0.173**	-0.096
		(0.076)	(0.060)
Employment: Non-paid work		-0.127*	-0.038
		(0.068)	(0.052)
Employment: Other		0.034	-0.011
		(0.147)	(0.092)
Parent		0.084*	0.074**
		(0.047)	(0.032)
Political spectrum: Moderate		0.416***	0.166**
		(0.088)	(0.072)
Political spectrum: Liberal		0.721***	0.183**

Policy support	(1)	(2)	(3)
		(0.090)	(0.079)
Political spectrum: Other		-0.149	-0.064
		(0.408)	(0.164)
Climate change happening			0.106***
			(0.021)
Climate change human-caused			0.133***
			(0.017)
Worried about climate change			0.138***
			(0.020)
Personally harmed by climate change			-0.001
			(0.017)
Americans harmed by climate change			0.059**
			(0.024)
Constant	-0.011	-0.085	-2.235***
	(0.035)	(0.381)	(0.201)
Observations	1,587	1,587	1,587
R-squared	0.000	0.374	0.688

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, policy support, is an index measuring individual self-reported support for four climate policies. The index is constructed by taking the sum of all items and standardizing it to have a mean of zero and a standard deviation of one. Column 1 shows results where the dependent variable is regressed on the treatment variable without any controls. Columns 2-3 present regression outcomes with controls. Variables treatment, Republican, female, and parent are binary. Age is a continuous variable. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B6. Treatment effect on willingness to accept (Tobit)

WTA	(1)	(2)	(3)	(4)	(5)
Treatment	-1.287	-1.767*	-1.750*	-1.895**	-1.877**
	(0.912)	(0.905)	(0.904)	(0.901)	(0.902)
Donation				-0.618***	-0.550***
				(0.169)	(0.175)
Female		-0.053	0.190	0.147	0.300
		(0.933)	(0.934)	(0.931)	(0.932)
Republican		1.553	0.550	1.136	0.397
		(2.021)	(2.039)	(2.015)	(2.033)
Age		0.005	0.003	0.023	0.021
		(0.037)	(0.038)	(0.038)	(0.038)
Income: $25-50k		0.043	0.296	0.299	0.482
		(1.745)	(1.745)	(1.739)	(1.741)
Income: $50-75k		2.037	2.135	2.294	2.326
		(1.783)	(1.781)	(1.776)	(1.776)
Income: $75-100k		1.247	1.363	1.727	1.796
		(1.833)	(1.830)	(1.830)	(1.829)
Income: $100-125k		-1.281	-1.184	-0.683	-0.702
		(2.069)	(2.066)	(2.067)	(2.065)
Income: $125-150k		-0.692	-0.715	-0.169	-0.284
		(2.190)	(2.185)	(2.185)	(2.182)
Income: >$150k		3.888*	4.208**	4.111**	4.339**
		(2.096)	(2.092)	(2.088)	(2.085)
Education: High school		-6.813	-6.637	-5.884	-5.773
		(6.970)	(6.951)	(6.945)	(6.935)
Education: Some college		-9.024	-8.815	-8.130	-7.996
		(6.936)	(6.920)	(6.911)	(6.903)
Education: Associates/ technical		-8.201	-8.080	-7.273	-7.209
		(6.994)	(6.976)	(6.968)	(6.959)
Education: Bachelor's degree		-7.260	-7.038	-6.386	-6.256
		(6.908)	(6.892)	(6.883)	(6.874)
Education: Graduate degree		-7.285	-6.790	-6.441	-6.105
		(6.971)	(6.956)	(6.945)	(6.938)
Employment: Part-time		3.853***	3.816***	3.656***	3.690***
		(1.404)	(1.402)	(1.399)	(1.398)
Employment: Due to start		8.551	9.863	8.874	9.864
		(6.786)	(6.783)	(6.762)	(6.765)
Employment: Unemployed		6.248***	6.201***	6.056***	6.086***
		(1.929)	(1.925)	(1.921)	(1.919)
Employment: Non-paid work		3.647**	3.550**	3.562**	3.553**
		(1.476)	(1.475)	(1.470)	(1.471)
Employment: Other		5.407	5.767*	5.529	5.905*
		(3.420)	(3.416)	(3.405)	(3.404)

WTA	(1)	(2)	(3)	(4)	(5)
Parent		-4.583***	-4.658***	-4.553***	-4.656***
		(1.024)	(1.024)	(1.020)	(1.021)
Political spectrum: Moderate		0.022	0.649	0.272	0.720
		(1.826)	(1.831)	(1.820)	(1.825)
Political spectrum: Liberal		0.088	1.279	0.368	1.166
		(2.125)	(2.162)	(2.117)	(2.155)
Political spectrum: Other		-1.865	-1.424	-1.235	-0.736
		(10.403)	(10.374)	(10.360)	(10.343)
Climate change happening			0.162		0.207
			(0.487)		(0.486)
Climate change human-caused			-0.483		-0.461
			(0.417)		(0.415)
Worried about climate change			-0.075		0.068
			(0.578)		(0.578)
Personally harmed by climate change			0.559		0.654
			(0.551)		(0.550)
Americans harmed by climate change			-1.072*		-1.108*
			(0.631)		(0.629)
Constant	14.942***	21.812***	26.229***	21.153***	24.355***
	(0.648)	(7.430)	(7.639)	(7.400)	(7.638)
Observations	1,587	1,587	1,587	1,587	1,587

Note: The table reports Tobit estimates, with standard errors in parentheses. The dependent variable, WTA, represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. Column 1 shows results where the dependent variable is regressed on the treatment variable without any controls. Columns 2-5 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age and donation are continuous variables. Variable donation indicates the decision to donate to the climate change organization. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B7. Treatment effect on willingness to accept by prior beliefs

WTA	(1)	(2)	(3)	(4)	(5)
Treatment	-1.008	-1.421	-1.398	-1.725	-1.669
	(1.137)	(1.126)	(1.121)	(1.121)	(1.120)
Underestimator	1.496	1.203	0.973	0.803	0.716
	(1.165)	(1.158)	(1.168)	(1.154)	(1.162)
T x Underestimator	0.039	0.021	-0.026	0.356	0.262
	(1.570)	(1.558)	(1.556)	(1.548)	(1.549)
Donation				-0.521***	-0.469***
				(0.151)	(0.157)
Female		0.215	0.403	0.369	0.491
		(0.799)	(0.799)	(0.796)	(0.797)
Republican		1.309	0.470	0.953	0.338
		(1.794)	(1.821)	(1.805)	(1.829)
Age		0.009	0.008	0.024	0.023
		(0.033)	(0.033)	(0.033)	(0.033)
Income: $25-50k		-0.189	0.020	0.034	0.187
		(1.622)	(1.630)	(1.615)	(1.623)
Income: $50-75k		1.565	1.640	1.800	1.818
		(1.673)	(1.676)	(1.669)	(1.672)
Income: $75-100k		0.794	0.899	1.216	1.276
		(1.687)	(1.692)	(1.684)	(1.687)
Income: $100-125k		-1.230	-1.172	-0.727	-0.760
		(1.736)	(1.737)	(1.730)	(1.730)
Income: $125-150k		-0.715	-0.758	-0.283	-0.393
		(1.863)	(1.863)	(1.864)	(1.862)
Income: >$150k		3.166	3.441*	3.359*	3.555*
		(1.994)	(2.000)	(1.988)	(1.994)
Education: High school		-4.962	-4.947	-4.241	-4.247
		(7.221)	(7.442)	(7.195)	(7.430)
Education: Some college		-7.288	-7.254	-6.584	-6.580
		(7.188)	(7.410)	(7.166)	(7.402)
Education: Associates/ technical		-6.403	-6.441	-5.675	-5.729
		(7.225)	(7.438)	(7.201)	(7.429)
Education: Bachelor's degree		-5.696	-5.647	-5.000	-5.000
		(7.177)	(7.395)	(7.153)	(7.386)
Education: Graduate degree		-5.893	-5.624	-5.223	-5.058
		(7.212)	(7.428)	(7.188)	(7.420)
Employment: Part-time		3.327***	3.300**	3.166**	3.194**
		(1.283)	(1.283)	(1.283)	(1.282)
Employment: Due to start		7.408	8.503	7.695	8.509
		(7.626)	(7.413)	(7.316)	(7.165)
Employment: Unemployed		5.222***	5.197***	5.073***	5.106***
		(1.890)	(1.873)	(1.875)	(1.866)
Employment: Non-paid work		3.195**	3.126**	3.158**	3.153**
		(1.336)	(1.337)	(1.335)	(1.336)
Employment: Other		4.585	4.914	4.719	5.053

WTA	(1)	(2)	(3)	(4)	(5)
		(3.178)	(3.207)	(3.205)	(3.233)
Parent		-4.045***	-4.116***	-4.023***	-4.116***
		(0.916)	(0.913)	(0.913)	(0.911)
Political spectrum: Moderate		-0.040	0.448	0.129	0.488
		(1.549)	(1.560)	(1.560)	(1.567)
Political spectrum: Liberal		0.089	1.013	0.294	0.914
		(1.892)	(1.938)	(1.901)	(1.944)
Political spectrum: Other		-1.147	-0.835	-0.741	-0.333
		(5.178)	(5.112)	(4.776)	(4.781)
Climate change happening			0.118		0.150
			(0.447)		(0.447)
Climate change human-caused			-0.329		-0.312
			(0.342)		(0.341)
Worried about climate change			-0.086		0.036
			(0.489)		(0.489)
Personally harmed by climate change			0.516		0.591
			(0.451)		(0.454)
Americans harmed by climate change			-0.949*		-0.975*
			(0.506)		(0.507)
Constant	13.328***	18.774**	22.625***	18.494**	21.239***
	(0.862)	(7.677)	(8.086)	(7.653)	(8.078)
Observations	1,587	1,587	1,587	1,587	1,587
R-squared	0.003	0.042	0.048	0.050	0.054

Note: The table reports OLS estimates, with robust standard errors in parentheses. The dependent variable, WTA, represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. It is regressed on the treatment variable, a binary variable underestimator, indicating that the participant underestimated public support for carbon taxation, and the interaction of the variable underestimator with the treatment variable. Column 1 shows results without any controls. Columns 2-5 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age and donation are continuous variables. Variable donation indicates the decision to donate to the climate change organization. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US.". $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B8. Treatment effect on Republicans' willingness to accept by carbon policy support

WTA	(1)	(2)	(3)	(4)	(5)
Treatment	-3.052	-4.205**	-4.593**	-4.277**	-4.630**
	(1.897)	(1.920)	(1.947)	(1.927)	(1.953)
Supporter	-4.378**	-3.976**	-3.014	-3.382*	-2.667
	(1.824)	(1.852)	(1.975)	(1.925)	(2.011)
T x Supporter	-1.404	-0.615	0.006	-0.652	-0.074
	(2.345)	(2.313)	(2.359)	(2.313)	(2.360)
Donation				-0.360	-0.333
				(0.261)	(0.271)
Female		-0.694	-0.546	-0.573	-0.474
		(1.219)	(1.237)	(1.220)	(1.237)
Age		-0.024	-0.024	-0.013	-0.014
		(0.045)	(0.045)	(0.047)	(0.047)
Income: $25-50k		1.298	1.532	1.350	1.554
		(2.452)	(2.483)	(2.451)	(2.482)
Income: $50-75k		0.971	1.130	0.960	1.093
		(2.450)	(2.489)	(2.449)	(2.488)
Income: $75-100k		1.415	1.730	1.550	1.830
		(2.433)	(2.465)	(2.443)	(2.472)
Income: $100-125k		-0.431	-0.193	-0.172	-0.014
		(2.518)	(2.569)	(2.531)	(2.575)
Income: $125-150k		-0.089	-0.071	0.099	0.057
		(2.656)	(2.684)	(2.668)	(2.690)
Income: >$150k		5.040*	5.420*	5.079*	5.394*
		(2.833)	(2.872)	(2.838)	(2.873)
Education: High school		3.296	3.898	3.478	4.209
		(4.017)	(4.212)	(3.942)	(4.126)
Education: Some college		0.729	1.251	0.892	1.542
		(3.987)	(4.199)	(3.918)	(4.116)
Education: Associates/ technical		1.438	1.855	1.751	2.278
		(4.104)	(4.276)	(4.031)	(4.191)
Education: Bachelor's degree		2.446	3.031	2.578	3.277
		(3.901)	(4.108)	(3.826)	(4.017)
Education: Graduate degree		1.887	2.811	2.164	3.159
		(4.050)	(4.223)	(3.973)	(4.132)
Employment: Part-time		5.278***	5.249***	5.031***	5.049***
		(1.905)	(1.916)	(1.917)	(1.923)
Employment: Due to start		10.019	11.378	10.239	11.358
		(8.646)	(8.468)	(8.432)	(8.248)
Employment: Unemployed		5.973*	6.017*	5.772*	5.822*
		(3.209)	(3.193)	(3.197)	(3.189)
Employment: Non-paid work		6.952***	6.787***	6.863***	6.756***
		(2.008)	(2.009)	(2.009)	(2.009)
Employment: Other		2.789	3.009	2.789	3.057

WTA	(1)	(2)	(3)	(4)	(5)
		(4.179)	(4.218)	(4.264)	(4.289)
Parent		-4.081***	-4.164***	-4.163***	-4.239***
		(1.386)	(1.386)	(1.389)	(1.389)
Political spectrum: Moderate		0.974	1.147	1.121	1.243
		(1.761)	(1.760)	(1.767)	(1.764)
Political spectrum: Liberal		3.666	4.141	3.988	4.299
		(4.617)	(4.639)	(4.578)	(4.608)
Political spectrum: Other		6.064**	6.028*	5.853**	5.922*
		(2.898)	(3.112)	(2.894)	(3.105)
Climate change happening			0.303		0.313
			(0.507)		(0.508)
Climate change human-caused			-0.655		-0.666
			(0.440)		(0.439)
Worried about climate change			0.558		0.646
			(0.675)		(0.682)
Personally harmed by climate change			-0.197		-0.148
			(0.661)		(0.665)
Americans harmed by climate change			-0.651		-0.677
			(0.687)		(0.691)
Constant	18.339***	16.893***	17.906***	16.433***	17.136***
	(1.437)	(4.623)	(4.878)	(4.571)	(4.855)
Observations	790	790	790	790	790
R-squared	0.040	0.095	0.101	0.098	0.103

Note: The table reports OLS estimates for a subsample of participants affiliated with the Republican party, with robust standard errors in parentheses. The dependent variable, WTA, represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. It is regressed on the treatment variable, a binary variable supporter, indicating that the participant answered that they strongly support or somewhat support this policy "Require fossil fuel companies to pay a carbon tax and use the money to reduce other taxes (such as income tax) by an equal amount," and the interaction of the variable support with the treatment variable. Column 1 shows results without any controls. Columns 2-5 present regression outcomes with controls. Columns 2-5 present regression outcomes with controls. Variables treatment, female, and parent are binary. Age and donation are continuous variables. Variable donation indicates the decision to donate to the climate change organization. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US." $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table B9. Treatment effect on willingness to meet (Probit)

Meeting	(1)	(2)	(3)	(4)	(5)
Treatment	0.066	0.074	0.074	0.073	0.035
	(0.063)	(0.065)	(0.065)	(0.065)	(0.068)
Donation				-0.005	-0.019
				(0.013)	(0.013)
WTA					-0.027***
					(0.002)
Female		-0.140**	-0.152**	-0.151**	-0.153**
		(0.067)	(0.068)	(0.068)	(0.070)
Republican		0.083	0.116	0.115	0.124
		(0.148)	(0.150)	(0.151)	(0.155)
Age		0.003	0.003	0.004	0.004
		(0.003)	(0.003)	(0.003)	(0.003)
Income: $25-50k		0.095	0.088	0.089	0.104
		(0.124)	(0.124)	(0.124)	(0.128)
Income: $50-75k		0.103	0.097	0.099	0.162
		(0.126)	(0.127)	(0.127)	(0.131)
Income: $75-100k		0.157	0.158	0.162	0.214
		(0.130)	(0.130)	(0.131)	(0.135)
Income: $100-125k		0.195	0.186	0.191	0.193
		(0.148)	(0.148)	(0.149)	(0.153)
Income: $125-150k		0.418***	0.409**	0.413***	0.435***
		(0.159)	(0.159)	(0.160)	(0.164)
Income: >$150k		0.312**	0.299**	0.300**	0.431***
		(0.150)	(0.150)	(0.150)	(0.156)
Education: High school		0.180	0.191	0.199	0.151
		(0.500)	(0.502)	(0.502)	(0.531)
Education: Some college		0.369	0.377	0.384	0.290
		(0.498)	(0.500)	(0.500)	(0.529)
Education: Associates/ technical		0.149	0.160	0.168	0.070
		(0.502)	(0.504)	(0.504)	(0.533)
Education: Bachelor's degree		0.217	0.223	0.230	0.159
		(0.496)	(0.498)	(0.498)	(0.527)
Education: Graduate degree		0.174	0.173	0.179	0.107
		(0.501)	(0.503)	(0.503)	(0.532)
Employment: Part-time		-0.244**	-0.240**	-0.241**	-0.179*
		(0.100)	(0.100)	(0.101)	(0.104)
Employment: Due to start		0.798	0.772	0.769	1.200*
		(0.580)	(0.587)	(0.586)	(0.663)
Employment: Unemployed		-0.278**	-0.269**	-0.270**	-0.164
		(0.136)	(0.136)	(0.136)	(0.143)
Employment: Non-paid work		-0.355***	-0.346***	-0.346***	-0.288***
		(0.105)	(0.106)	(0.106)	(0.109)
Employment: Other		-0.021	-0.024	-0.022	0.126
		(0.243)	(0.243)	(0.244)	(0.255)

Meeting	(1)	(2)	(3)	(4)	(5)
Parent		0.198***	0.197***	0.197***	0.102
		(0.073)	(0.074)	(0.074)	(0.077)
Political spectrum: Moderate		0.268**	0.244*	0.244*	0.285**
		(0.134)	(0.135)	(0.135)	(0.140)
Political spectrum: Liberal		0.239	0.184	0.183	0.218
		(0.156)	(0.159)	(0.159)	(0.164)
Climate change happening			0.016	0.016	0.019
			(0.035)	(0.035)	(0.036)
Climate change human-caused			-0.007	-0.007	-0.014
			(0.030)	(0.030)	(0.031)
Worried about climate change			0.041	0.042	0.044
			(0.042)	(0.042)	(0.043)
Personally harmed by climate change			-0.011	-0.010	0.004
			(0.040)	(0.040)	(0.042)
Americans harmed by climate change			0.001	0.001	-0.023
			(0.046)	(0.046)	(0.047)
Constant	0.169***	-0.468	-0.676	-0.693	-0.210
	(0.045)	(0.534)	(0.551)	(0.552)	(0.583)
Observations	1,587	1,584	1,584	1,584	1,584

Note: The table reports Probit estimates, with standard errors in parentheses. The dependent variable, meeting, is a binary variable representing the willingness to attend the video meeting with another participant from the experiment. Column 1 shows results where the dependent variable is regressed on the treatment variable without any controls. Columns 2-5 present regression outcomes with controls. Columns 2-5 present regression outcomes with controls. Variables treatment, female, Republican, and parent are binary. Age and donation are continuous variables. Variable donation indicates the decision to donate to the climate change organization. Variable WTA represents the reservation price for attending the video meeting with another participant from the experiment affiliated with the same political party. For the variable income, the omitted category is <$25k. For the variable education, the omitted category is some high school or less. For the variable employment, the omitted category is full-time. For the variable political spectrum, the omitted category is conservative. Variables climate change happening, climate change human-caused, worried about climate change, personally harmed by climate change, and Americans harmed by climate change are continuous variables based on participants' agreement with respective statements on climate change, measured on a 7-point Likert scale: "Climate change is happening," "Climate change is mostly human-caused," "I am worried about climate change," "Climate change will harm me personally," and "Climate change will harm many people in the US.". $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

APPENDIX C

Experimental instructions.

//Consent//

This experiment is conducted by researchers from Vilnius University and WZB Berlin Social Science Center - Laura Galdikiene (laura.galdikiene@evaf.stud.vu.lt), Agne Kajackaite (agne.kajackaite@wzb.eu) and Jurate Jaraite (jurate.jaraite-kazukauske@evaf.vu.lt). If you have any concerns or questions about the study, do not hesitate to contact the experimenters.

The purpose of the research is to better understand human behaviour and beliefs. During this experiment, you will face multiple tasks, participate in a game and answer questions. Answering some of the questions will require memorization and decision making. You will also be asked to provide information about your political beliefs and health status. We will record your responses. The data recorded in the experiment do not allow any inference on the participation of individual persons. The analysis and presentation of all results of this experiment will be anonymized. The anonymous research data will be archived and will possibly be made available to other scientists for further use.

Participation in today's experiment is entirely voluntary. There will be no disadvantages for you if you decide not to participate. You have the possibility to exit the experiment at any time.

You will receive 1.50 GBP in exchange for your participation in this study with the opportunity to earn a significant bonus payment.

We want to ask for your consent to participate in the experiment and to the implied processing of data. Your consent is the legal basis for data processing.

If you understand and agree to participate in the study, please select "I consent" and click "Next".

If you do not consent to take part in the study, please select "I do not consent" and click "Next".

Please select one of these options:

- I consent
- I do not consent

//No Consent//

As you do not wish to participate in this study, please close it and return your submission on Prolific by selecting the 'Stop without completing' button.

//Screener Validation//

Before you begin with the experiment, please answer a couple of questions about yourself.

In what country do you currently reside?

- UK
- Other

What is your nationality?

- UK
- Other

//Failed Screener// *[displayed to participants who answer "Other" in at least to one of the two previous screener validation questions]*

You are ineligible for this study as you have provided information which is inconsistent with your Prolific prescreening responses. Please return your submission on Prolific by selecting the 'Stop without completing' button.

//Intro//

Welcome to the experiment!

For participating in this experiment, you will receive a fixed payment of £1.50, but you can also receive a significant bonus payment. Depending on the decisions taken in the experiment, this bonus payment.

In this experiment you will be paired with another participant and play a game in real time. The matching of participants can cause some delays, but please remain patient. The experiment will take up to 15 minutes.

For the experiment to run smoothly it is important for you to remain focused at your screen throughout the whole experiment. If you cannot ensure that your participation in this experiment is without any breaks, please leave the experiment now and return your submission on Prolific by selecting the 'Stop without completing' button.

Please think about your answers carefully and report them truthfully.

//Attention Check 1//

This is an attention check. The test you are about to take part in is very simple. When asked to choose a letter, you must select the letter “Q”. You have one try to answer this question.

Based on the text you read above, which letter have you been asked to choose?

- Z
- Q
- M
- A
- L

//Memorize Number//

A telephone number is displayed below. You have 30 seconds to memorize it. You will be asked to recognize the telephone number at a later point in time.

(01382) 37844

//Treatment Intro//

On the next page an article will be displayed to all participants of the experiment. Please read it and try to memorize as much of the content as possible. You will have 3 minutes to do so.

After you read the text, you will be asked to summarize it. At a later point in time, you will be asked to answer three questions about the content of the article.

//Text Reading//

//Uncooperative Narrative// *[displayed only to participants in "Uncooperative narrative" treatment]*

For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.

During the pandemic, many preventative measures were put in place to limit the spread of the virus. However, some Britons did not uphold these measures. Even with rising COVID-19 cases and the NHS on the brink of collapse, some adults refused to maintain social distancing and even declined to wear face masks when outside their home. Moreover, some Britons returning home from foreign countries broke travel rules by avoiding self-isolation and testing.

Despite the availability of COVID-19 vaccines, some Britons have been refusing vaccinations. With most variants of the coronavirus, the unvaccinated transmit the virus more, and if they contract COVID-19, they are more likely to be hospitalized, which may lead to the collapse of the NHS. To be able to travel and attend events, some anti-vaxxers have turned to the black market to buy fake NHS COVID-19 passes. Opposition to COVID-19 restrictions and vaccinations have spurred numerous protests, many of them violent.

//Cooperative Narrative// *[displayed only to participants in "Cooperative narrative" treatment]*

For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.

During the pandemic, many preventative measures were put in place to limit the spread of the virus. Most Britons upheld these measures. With rising COVID-19 cases and the NHS on the brink of collapse, most adults maintained social distancing and also wore face masks when outside their home. Britons returning home from foreign countries largely adhered to travel rules, such as requirements to self-isolate and test for COVID-19.

When COVID-19 vaccines became widely available, most Britons got fully vaccinated. Preventing others from contracting the coronavirus has been one of the main reasons for taking the vaccine. With most variants of COVID-19, vaccines lower the risk of contracting the virus, reduce the transmission of the virus and lower the risk of hospitalisation if infected. Thus, vaccinated Britons have helped to limit the spread of COVID-19, prevented the collapse of the NHS, and saved lives of their fellow Britons.

//COVID-19 salience// *[displayed only to participants in "COVID-19 salience" treatment]*

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019. The disease spread worldwide, leading to the COVID-19 pandemic.

Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, loss of smell, and loss of taste. Symptoms may begin one to fourteen days after exposure to the virus.

The severity of COVID-19 varies. The disease may take a mild course with few or no symptoms. In some cases, symptoms are severe enough to cause hospitalization. Mild cases typically recover within two weeks, while those with severe or critical diseases may take three to six weeks to recover. Among those who have died, the time from symptom onset to death has ranged from two to eight weeks.

//Neutral// *[displayed only to participants in "Neutral" treatment]*

Terns are graceful, slender water birds that have a worldwide distribution. They are normally found near the sea, rivers, or wetlands. Terns are treated as a subgroup of the family Laridae which includes gulls and skimmers.

Terns range in length from about 20 to 55 cm. Compared with gulls, they are more slender, shorter legged, and longer winged. They range in colour from white to black and white to almost entirely black. The bill of various species may be black, red, or yellow, while the feet are red or black. Their feet are webbed. Most species have long and pointed wings, forked tails, and sharply pointed bills.

Most terns breed annually and at the same time of year, but some tropical species may nest at intervals shorter than 12 months or asynchronously. Most species lay two or three eggs, although a few species lay only one egg. The eggs of most terns are brown with dark splotches. Terns are generally long-lived birds, some species reaching more than 30 years of age.

//Text Summary//

Please summarize the information provided in the article you read on the previous page using 3-4 sentences. Then press “Next”. You have 4 minutes to do so. If you don’t submit the page before time runs out, the page will autosubmit.

Write your summary in the field below.

//Recognize Number//

At the beginning of the study, you were shown a telephone number.

Which number were you shown?

- (01733) 65192
- (01947) 80335
- (01473) 52062
- (01382) 37844

//Attention Check 2//

Now please indicate your agreement with the statement below. Please mark one answer.

I swim across the Atlantic Ocean to get to work every day.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

//Game Intro//

In this next section you will play a game with another participant of the study. **You will play the game with real money – everything you earn in this game will be paid out to you as a bonus after you complete the experiment!** You will learn how much exactly you earned in the final pages of this experiment. If you do not complete the experiment the bonus will not be paid.

But let us first introduce the instructions of the game. Please read them carefully. Later you will be asked to answer three questions about the game.

//Game Instructions//

This game is played by randomly paired participants of this experiment. Each pair consists of Player 1 and Player 2. You will learn whether you are Player 1 or Player 2 prior to making any decision. You will play this game with another British national residing in the UK. However, none of you will know exactly with whom you are playing.

At the start of the game Player 1 and Player 2 receive £2.00 each. Player 1 can send a chosen amount x from his/ her £2.00 to Player 2, though Player 1 can also choose to send nothing ($0 \leq x \leq 2$). Player 1 can send money with £0.10 increments, that is, he/ she can send £0.00, £0.10, £0.20, … £2.00.

Whatever amount Player 1 decides to send to Player 2, it will be tripled by the researcher before it is passed on to Player 2. Player 1 keeps 2-x and 3x is passed onto Player 2. Player 2 then has the option of returning any amount y from this tripled amount (3x) to Player 1, though Player 2 can also choose to return nothing ($0 \leq y \leq 3x$). Player 2 can also send money with £0.10 increments. That is, Player 2 can send back £0.00, £0.10, £0.20, …, £3x.

Then, the game is over. The final payoff from the game for Player 1 is whatever he/ she kept from the original £2.00 after sending a portion to Player 2, plus anything returned to him/ her by Player 2 (2-x+y). The final payoff for Player 2 is the original £2, plus whatever was given to him/ her by Player 1

and then tripled by the researcher, minus whatever Player 2 returned to Player 1 (2+3x-y).

//Game Understanding//

Next you will have to answer questions about the game based on the instructions presented previously. For each question there will be three options, but only one of them is correct. Please choose the option that you think is correct. If you see a message that your answer is wrong, please pick a different option. You will have a chance to re-read the instructions.

//Game Check 1//

Imagine that Player 1 and Player 2 receive the initial £2.00 each from the researcher. Then Player 1 gives £1.00 to Player 2. The researcher triples this amount, so Player 2 gets £3.00 in addition to his/her initial £2. At this point, Player 1 has £1.00 left and Player 2 has £5.00 Suppose Player 2 decides to return £2.00 to Player 1.

What is the final payoff of Player 1 and of Player 2?

- Player 1: £3.00; Player 2: £3.00
- Player 1: £2.00; Player 2: £5.00
- Player 1: £4.00; Player 2: £2.50

You can re-read the instructions below.

[Instructions repeated here]

//Game Check 2//

Imagine that Player 1 and Player 2 receive the initial £2.00 each from the researcher. Then Player 1 gives £2.00 to Player 2. The researcher triples this amount, so Player 2 gets £6.00 in addition to her/his initial £2. At this point, Player 1 has £0 left and Player 2 has £8.00. Suppose Player 2 decides to return nothing to Player 1. What is then the final payoff of Player 1 and of Player 2?

- Player 1: £1.00; Player 2: £6.00
- Player 1: £0.00; Player 2: £8.00
- Player 1: £4.00; Player 2: £0.00

You can re-read the instructions below.

[Instructions repeated here]

//Game Check 3//

Imagine that Player 1 and Player 2 receive the initial £2.00 each from the researcher. Then Player 1 gives nothing to Player 2. What is then the final payoff of Player 1 and of Player 2?

- Player 1: £4.00; Player 2: £6.00
- Player 1: £0.00; Player 2: £0.00
- Player 1: £2.00; Player 2: £2.00

You can re-read the instructions below.

[Instructions repeated here]

//Attention Check 3//

This is an attention check. The colour test you are about to take part in is very simple. When asked to enter a colour you must select "Yellow". You have one try to answer this question.

Based on the text you read above, what colour have you been asked to enter?

- Red
- Brown
- Green
- Yellow
- Orange

//Treatment Quiz//

Before we proceed to the game, please answer three simple true or false questions on the article that you read in the beginning. Please read the question attentively and choose the option that you think is correct. If you see a message that your answer is wrong, please pick a different option.

//Question 1//

//Uncooperative Narrative// *[displayed only to participants in "Uncooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Some Britons did not uphold preventative pandemic measures."

- True
- False

//Cooperative Narrative// *[displayed only to participants in "Cooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Most Britons upheld preventative pandemic measures."

- True
- False

//COVID-19// *[displayed only to participants in "COVID-19 salience" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"The first known case of COVID-19 was identified in Wuhan, China, in December 2019. The disease spread worldwide, leading to the COVID-19 pandemic."

- True
- False

//Neutral// *[displayed only to participants in "Neutral" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Terns are normally found near the sea, rivers, or wetlands."

- True
- False

//Question 2//

//Uncooperative Narrative// *[displayed only to participants in "Uncooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Despite the availability of COVID-19 vaccines, some Britons have been refusing vaccinations."

- True
- False

//Cooperative Narrative// *[displayed only to participants in "Cooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"When COVID-19 vaccines became widely available, most Britons got fully vaccinated."

- True
- False

//COVID-19// *[displayed only to participants in "COVID-19 salience" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Symptoms of COVID-19 often include fever, cough, headache, fatigue, breathing difficulties, loss of smell, and loss of taste."

- True
- False

//Neutral// *[displayed only to participants in "Neutral" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Most species of terns have long and pointed wings, forked tails, and sharply pointed bills."

- True
- False

//Question 3//

//Uncooperative Narrative// *[displayed only to participants in "Uncooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Some Britons returning home from foreign countries broke quarantine rules by avoiding self-isolation and testing."

- True
- False

//Cooperative Narrative// *[displayed only to participants in "Cooperative narrative" treatment]*

The following statement appeared in the article in this or in a similar fashion:

"Britons returning home from foreign countries largely adhered to travel rules, such as requirements to self-isolate and test for COVID-19".

- True
- False

//COVID-19// *[displayed only to participants in "COVID-19 salience" treatment]*

The following statement appeared in the article in this or in a similar fashion:

“In some COVID-19 cases, symptoms are severe enough to cause hospitalization.”

- True
- False

//Neutral// *[displayed only to participants in “Neutral” treatment]*

The following statement appeared in the article in this or in a similar fashion:

“Terns are generally long-lived birds, some species reaching more than 30 years of age.”

- True
- False

//Matching Info//

In the next page you will be matched with another participant. The matching process can take up to 10 min. Please be patient and stay alert. Do not turn off the waiting page, we will inform you if the matching was successful or not.

Please press “Next” to be matched with another participant.

//Play Game//

You have been paired with another participant and will now play the game. Please press “Next” to continue. Otherwise, you will be forwarded to the next page automatically after the time on the timer runs out.

//Trustor Choice//

You are selected to be in the role of Player 1. You have been now given £2.00 by the researcher. How much (if anything at all) from these £2.00 do you want to send to Player 2? You can send any amount between £0.00 and £2.00 with £0.10 increments. Player 2 will receive this amount tripled by us plus his/ her initial £2.00. Then Player 2 will decide how much of the tripled amount to return to you, but he/ she is under no obligation to give anything back.

You have 240 seconds to make a decision. If you do not submit this page before the time in the timer runs out, you will be automatically considered a dropout.

Please choose the amount that you want to send to Player 2. *[drop-down list with options]*

//Trustee Role//

You are selected to be in the role of Player 2. You have been now given £2.00 by the researcher. Please press “Next” to find out how much Player 1 decided to send to you. Otherwise, you will be forwarded to the next page automatically after the time on the timer runs out.

//Send Zero// *[displayed to both players, if Player 1 sends zero to Player 2.]*

Player 1 chose to send nothing to Player 2, so the game ends here. Please press "Next" to proceed to the final part of the experiment. Otherwise, you will be forwarded to the next page automatically after the time on the timer runs out.

//Trustee Choice// *[displayed to Player 2, if Player 1 sends non-zero to Player 2]*

Player 1 decided to send £[amount sent by Player 1] to you. We tripled the amount sent by Player 1 and now it is £[tripled amount]. How much (if anything at all) do you want to send back to Player 1 from the tripled amount? You can send Player 1 any amount between £0 and £[tripled amount] with £0.10 increments.

You have 240 seconds to make a decision. If you do not submit this page before the time in the timer runs out, you will be automatically considered a dropout.

Please choose the amount that you want to send back to Player 1. *[drop-down list with options]*

//Trustor Expectations//

Player 2 can send you any amount between £0 and £[tripled amount] with £0.10 increments. Please tell us, how much do you expect Player 2 to return to you? You will earn £0.50 if your answer falls within a 10% interval around the actual amount returned by Player 2.

Please choose the amount that you expect to receive from Player 2? *[drop-down list with options]*

[Next part displayed to all participants]

//Survey Intro//

We will now ask you to answer some questions about yourself.

//Trust Risk//

Generally speaking, would you say that most people can be trusted or that you can`t be too careful in dealing with people?

- Most people can be trusted
- One can`t be too careful

On a scale from 0 to 10 how much do you personally trust your country's government? 0 means you do not trust it at all, and 10 means you have complete trust in it.

0 1 2 3 4 5 6 7 8 9 10

On a scale from 0 to 10 how willing are you to take risks, in general? 0 means you are not at all willing to take risks, and 10 means you are 10 very willing to take risks.

0 1 2 3 4 5 6 7 8 9 10

//COVID Experience//

Have you previously been hospitalized with COVID-19 and/ or developed severe symptoms of COVID-19?

- Yes
- No

Has any of your close family members been hospitalized with COVID-19 and/ or developed severe symptoms of COVID-19?

- Yes
- No

Do you belong to a group of people with an increased risk of a severe disease if infected with COVID-19?

- Yes
- No
- I don't know

//Health Attitudes//

To what extent do you agree or disagree with the statements below? To indicate your agreement or disagreement use the 11-point scale, where **0 means you disagree strongly**, and **10 means you agree strongly**.

COVID-19 pandemic has been one of the greatest health emergencies in human history.

0 1 2 3 4 5 6 7 8 9 10

In general, vaccines are necessary to prevent the spread of infectious diseases.

0 1 2 3 4 5 6 7 8 9 10

//SocioDemographics//

What is your age (please enter a number) ____

What is your gender?

- Male
- Female
- Other

What is the highest level of education you have completed?

- Some Primary
- Completed Primary School
- Some Secondary
- Completed Secondary School
- Vocational or Similar
- Some University but no degree
- University Bachelors Degree
- Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS)
- Other

How much money do you have at your disposal monthly (after tax)?

- Less than £500
- £500-749
- £750-999
- £1000-1249
- £1250-1499
- £1500-1749
- £1750-1999
- More than £2000

Which political party do you identify most with?

- Labour Party
- Conservative and Unionist Party
- Liberal Democrats
- The Green Party of England and Wales
- Scottish National Party
- Reform UK (former Brexit Party)
- Other
- None

//Repeat Article//

Please read the article below again. We will then ask you to answer two questions related to the article. *[displayed only to "Uncooperative", "Cooperative" and "COVID-19 salience" treatment participants]*

Please read the article below again. We will then ask you to answer one question related to the article. *[displayed only to "Neutral" treatment participants]*

//Uncooperative Narrative// *[displayed only to participants in "Uncooperative narrative" treatment]*

For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.

During the pandemic, many preventative measures were put in place to limit the spread of the virus. However, some Britons did not uphold these measures. Even with rising COVID-19 cases and the NHS on the brink of collapse, some adults refused to maintain social distancing and even declined to wear face masks when outside their home. Moreover, some Britons returning home from foreign countries broke travel rules by avoiding self-isolation and testing.

Despite the availability of COVID-19 vaccines, some Britons have been refusing vaccinations. With most variants of the coronavirus, the unvaccinated transmit the virus more, and if they contract COVID-19, they are more likely to be hospitalized, which may lead to the collapse of the NHS. To be able to travel and attend events, some anti-vaxxers have turned to the black market to buy fake NHS COVID-19 passes. Opposition to COVID-19 restrictions and vaccinations have spurred numerous protests, many of them violent.

//Cooperative Narrative// *[displayed only to participants in "Cooperative narrative" treatment]*

For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.

During the pandemic, many preventative measures were put in place to limit the spread of the virus. Most Britons upheld these measures. With rising COVID-19 cases and the NHS on the brink of collapse, most adults maintained social distancing and also wore face masks when outside their home. Britons returning home from foreign countries largely adhered to travel rules, such as requirements to self-isolate and test for COVID-19.

When COVID-19 vaccines became widely available, most Britons got fully vaccinated. Preventing others from contracting the coronavirus has been one of the main reasons for taking the vaccine. With most variants of COVID-19, vaccines lower the risk of contracting the virus, reduce the transmission of the virus and lower the risk of hospitalisation if infected. Thus, vaccinated Britons have helped to limit the spread of COVID-19, prevented the collapse of the NHS, and saved lives of their fellow Britons.

//COVID-19 salience// *[displayed only to participants in "COVID-19 salience" treatment]*

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019. The disease spread worldwide, leading to the COVID-19 pandemic.

Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, loss of smell, and loss of taste. Symptoms may begin one to fourteen days after exposure to the virus.

The severity of COVID-19 varies. The disease may take a mild course with few or no symptoms. In some cases, symptoms are severe enough to cause hospitalization. Mild cases typically recover within two weeks, while those with severe or critical diseases may take three to six weeks to recover. Among those who have died, the time from symptom onset to death has ranged from two to eight weeks.

//Neutral// *[displayed only to participants in "Neutral" treatment]*

Terns are graceful, slender water birds that have a worldwide distribution. They are normally found near the sea, rivers, or wetlands. Terns are treated as a subgroup of the family Laridae which includes gulls and skimmers.

Terns range in length from about 20 to 55 cm. Compared with gulls, they are more slender, shorter legged, and longer winged. They range in colour from white to black and white to almost entirely black. The bill of various species may be black, red, or yellow, while the feet are red or black. Their feet are webbed. Most species have long and pointed wings, forked tails, and sharply pointed bills.

Most terns breed annually and at the same time of year, but some tropical species may nest at intervals shorter than 12 months or asynchronously. Most species lay two or three eggs, although a few species lay only one egg. The eggs of most terns are brown with dark splotches. Terns are generally long-lived birds, some species reaching more than 30 years of age.

//Manipulation Check//

[displayed only to participants in "Uncooperative narrative", "Cooperative narrative", and "Covid-19 salience" treatments]

Do you consider the information **provided in the article** as describing cooperative behaviour, uncooperative behaviour or neither during the COVID-19 pandemic in Britain? *[displayed only to "Uncooperative", "Cooperative" and "COVID-19 salience" treatment participants]*

- Cooperative
- Uncooperative
- Neither

[displayed only to all participants]

Did you find the information **provided in the article** as accurate?

- Yes
- No

//Payoff Trustors// *[displayed only to trustors]*

Thank you for taking part in this study.

For participating in this study you earned a fixed completion fee of £1.50.

Your bonus payment is calculated in the following way:

You were initially endowed with £2.00. You sent £*X* to Player 2. You received £*X* from Player 2. Therefore, your total payoff from the game is £*X*.

Your earnings for getting expectations about money returned by Player 2 right (within 10% interval) are £X (applies only if you sent non-zero).

Your total bonus payment is £X. The processing of the bonus payment may take up to 2 weeks. Thank you for your patience!

Do you have any comments about this experiment?

If you have questions about the study or your payment please contact laura.galdikiene@evaf.stud.vu.lt.

Please, press "Next" for the Completion code.

//Payoff Trustees// *[displayed only to trustees]*

Thank you for taking part in this study.

For participating in this study you earned a fixed completion fee of £1.50.

Your bonus payment is calculated in the following way:

You were initially endowed with £2.00. Player 1 sent you £X. It was tripled and you received £X. You returned £X to Player 1. Therefore, your total payoff from the game is £X.

Your total bonus payment is £X.

Do you have any comments about this experiment?

If you have questions about the study or your payment please contact laura.galdikiene@evaf.stud.vu.lt.

Please, press "Next" for the Completion code.

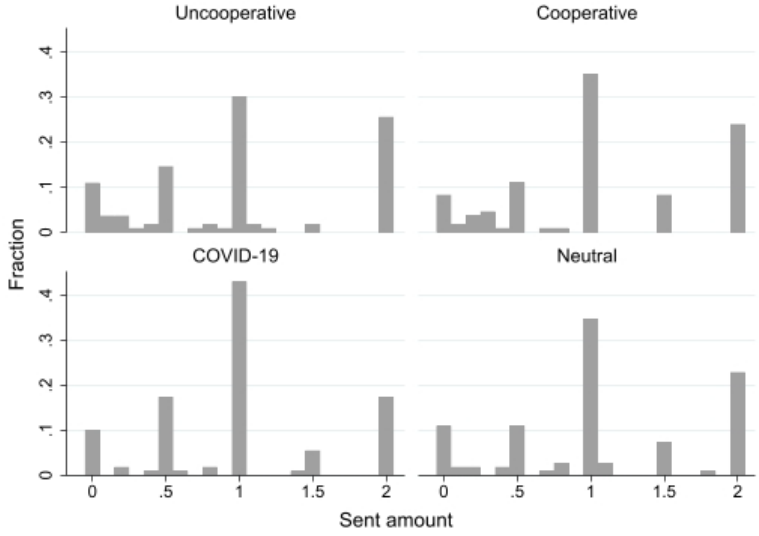


Fig B1. Distribution of amounts sent by treatment. The labels of the bars represent the amount sent by trustors to trustees in the trust game. N = 109 in the uncooperative narrative, COVID-19 salience, and the neutral treatments, respectively, and N = 108 in the cooperative narrative treatment.

Table C1. Socio-demographic characteristics of all participants

Characteristic	All		Uncooperative		Cooperative		COVID-19		Neutral	
	n	%	n	%	n	%	n	%	n	%
Age	875	40*	220	40*	217	38*	218	42*	220	39*
Gender:										
Male	442	50.5	112	50.9	111	51.1	110	50.5	109	49.6
Female	431	49.3	108	49.1	105	48.4	108	49.5	110	50.0
Other	2	0.2	-	-	1	0.5	-	-	1	0.5
Education:										
Some secondary	6	0.7	2	0.9	1	0.5	2	0.9	1	0.4
Completed secondary	155	17.7	37	16.8	43	19.8	37	17.0	38	17.3
Vocational	119	13.6	27	12.3	24	11.1	32	14.7	36	16.4
Some university	78	8.9	22	10.0	24	11.1	18	8.3	14	6.4
Bachelor's degree	351	40.1	85	38.6	88	40.5	92	42.2	86	39.1
Graduate/ professional	159	18.2	44	20.0	35	16.1	36	16.5	44	20.0
Other	7	0.8	3	1.4	2	0.9	1	0.5	1	0.4
Income:										
<£500	294	33.6	78	35.5	77	35.5	65	29.8	74	33.7
£500–749	108	12.4	23	10.4	32	14.7	23	10.6	30	13.7
£750–999	72	8.2	20	9.1	11	5.1	22	10.1	19	8.6
£1000–1249	100	11.4	26	11.8	23	10.6	23	10.6	28	12.7
£1250–1499	56	6.4	15	6.8	13	6.0	11	5.0	17	7.7
£1500–1749	69	7.9	16	7.3	18	8.3	20	9.2	15	6.8
£1750–1999	54	6.2	17	7.7	14	6.4	14	6.4	9	4.1
>£2000	122	13.9	25	11.4	29	13.4	40	18.3	28	12.7
Political party:										
Labor	311	35.5	77	35.0	87	40.1	60	27.5	87	39.5
Conservative	151	17.3	41	18.7	28	12.9	45	20.6	37	16.8
Lib Dem	92	10.5	19	8.6	18	8.3	37	17.0	18	8.2
Green	83	9.5	22	10.0	23	10.6	15	6.9	23	10.5
Scottish	35	4.0	13	5.9	7	3.2	6	2.8	9	4.1
Reform UK	11	1.3	4	1.8	2	0.9	2	0.9	3	1.4
Other	16	1.8	6	2.7	3	1.4	6	2.7	1	0.4
None	176	20.1	38	17.3	49	22.6	47	21.6	42	19.1

Note: All variables are binary, except for age, which is continuous. *Average.

Table C2. Socio-demographic characteristics of the trustors

Characteristic	All		Uncooperative		Cooperative		COVID-19		Neutral	
	n	%	n	%	n	%	n	%	n	%
Age	435	41*	109	42*	108	39*	109	43*	109	40*
Gender:										
Male	232	53.3	60	55.0	58	53.7	56	51.4	58	53.2
Female	203	46.7	49	45.0	50	46.3	53	48.6	51	46.8
Other	-	-	-	-	-	-	-	-	-	-
Education:										
Some secondary	4	0.9	2	1.8	1	0.9	-	-	1	0.9
Completed secondary	74	17.0	17	15.6	21	19.4	17	15.6	19	17.4
Vocational	65	15.0	14	12.9	18	16.7	14	12.8	19	17.4
Some university	43	9.9	12	11.0	14	13.0	8	7.4	9	8.3
Bachelor's degree	168	38.6	39	35.8	37	34.3	51	46.8	41	37.6
Graduate/ professional	78	17.9	24	22.0	16	14.8	19	17.4	19	17.5
Other	3	0.7	1	0.9	1	0.9	-	-	1	0.9
Income:										
<£500	144	33.1	30	27.5	38	35.2	29	26.6	47	43.1
£500–749	55	12.6	14	12.8	15	13.9	13	11.9	13	11.9
£750–999	39	9.0	11	10.1	5	4.6	15	13.8	8	7.4
£1000–1249	44	10.1	13	11.9	10	9.3	9	8.3	12	11.0
£1250–1499	34	7.8	7	6.4	8	7.4	8	7.3	11	10.1
£1500–1749	36	8.3	9	8.3	10	9.2	8	7.3	9	8.3
£1750–1999	25	5.8	9	8.3	8	7.4	6	5.5	2	1.8
>£2000	58	13.3	16	14.7	14	13.0	21	19.3	7	6.4
Political party:										
Labor	164	37.2	42	38.5	43	39.8	31	28.5	46	42.2
Conservative	76	17.5	22	20.2	13	12.1	24	22.0	17	15.6
Lib Dem	38	8.8	10	9.2	8	7.4	14	12.8	6	5.5
Green	41	9.4	9	8.3	13	12.0	7	6.4	12	11.0
Scottish	18	4.1	8	7.3	1	0.9	3	2.8	6	5.5
Reform UK	9	2.1	3	2.8	2	1.9	1	0.9	3	2.8
Other	6	1.4	3	2.7	1	0.9	2	1.8	-	-
None	85	19.5	12	11.0	27	25.0	27	24.8	19	17.4

Note: All variables are binary, except for age, which is continuous. *Average.

Table C3. Balance table

Characteristic	Differences in means (p-values)					
	U-C	U-C19	U-N	C-C19	C-N	C19-N
Age	2.3608*	-1.6811	1.05	-4.0418***	-1.3108	2.7311**
	(0.0548)	(0.1714)	(0.3757)	(0.0012)	(0.2724)	(0.0226)
Female gender	0.0070	-0.0045	-0.0091	-0.0115	-0.0161	-0.0046
	(0.8833)	(0.9251)	(0.8492)	(0.8103)	(0.7367)	(0.9237)
University education	0.0089	0.0166	0.0318	0.0077	0.0229	0.0152
	(0.8414)	(0.7102)	(0.4789)	(0.8645)	(0.6132)	(0.7377)
Income:						
<£500	-0.0003	0.0564	0.0182	0.0567	0.0185	-0.0382
	(0.9949)	(0.2092)	(0.6892)	(0.2084)	(0.6855)	(0.3916)
£500–749	-0.0429	-0.0010	-0.0318	0.0420	0.0111	-0.0309
	(0.1770)	(0.9740)	(0.3063)	(0.1888)	(0.7402)	(0.3232)
£750–999	0.0402	-0.0100	0.0045	-0.0502**	-0.0357	0.0145
	(0.1020)	(0.7228)	(0.8672)	(0.0480)	(0.1410)	(0.6021)
£1000–1249	0.0122	0.0127	-0.0091	0.0005	-0.0213	-0.0218
	(0.6872)	(0.6747)	(0.7720)	(0.9869)	(0.4896)	(0.4787)
£1250–1499	0.0083	0.0177	-0.0091	0.0094	-0.0174	-0.0268
	(0.7247)	(0.4337)	(0.7143)	(0.6669)	(0.4740)	(0.2524)
£1500–1749	-0.0102	-0.0190	0.0045	-0.0088	0.0148	0.0236
	(0.6908)	(0.4699)	(0.8526)	(0.7460)	(0.5602)	(0.3644)
£1750–1999	0.0128	0.0130	0.0364	0.0003	0.0236	0.0233
	(0.6045)	(0.5953)	(0.1063)	(0.9900)	(0.2702)	(0.2752)
>£2000	-0.0200	-0.0698**	-0.0136	-0.0498	0.0064	0.0562
	(0.5263)	(0.0399)	(0.6612)	(0.1555)	(0.8438)	(0.1048)
Political party:						
Labor	-0.0509	0.0748*	-0.0454	0.1257***	0.0055	-0.1202***
	(0.2727)	(0.0919)	(0.3253)	(0.0055)	(0.9073)	(0.0076)
Conservative	0.0573	-0.0201	0.0182	-0.0774**	-0.0391	0.0382
	(0.1008)	(0.5982)	(0.6185)	(0.0308)	(0.2512)	(0.3061)
Lib Dem	0.0003	-0.0834***	0.0045	-0.0868***	0.0011	0.0879***
	(0.8983)	(0.0089)	(0.8640)	(0.0064)	(0.9658)	(0.0054)
Green	-0.0060	0.0312	-0.0045	0.0372	0.0014	-0.0357
	(0.8372)	(0.2415)	(0.8753)	(0.1704)	(0.9609)	(0.1848)
Scottish	0.0268	0.0316	0.0182	0.0047	-0.0086	-0.0134
	(0.1804)	(0.1054)	(0.3827)	(0.7724)	(0.6311)	(0.4423)
Reform UK	0.0090	0.0090	0.0045	0.0000	-0.0044	-0.0045
	(0.4218)	(0.4186)	(0.7040)	(0.9963)	(0.6649)	(0.6612)
Other	0.0134	-0.0002	0.0227*	-0.0137	0.0093	0.0230
	(0.3235)	(0.9872)	(0.0570)	(0.3167)	(0.3096)	(0.0554)
None	-0.0531	-0.0429	-0.0182	0.0102	0.0349	0.0247
	(0.1655)	(0.2577)	(0.6220)	(0.7979)	(0.3702)	(0.5220)

Note: The table reports differences in means between treatment groups together with p-values in parentheses. "U" corresponds to the uncooperative narrative treatment, "C"–the cooperative narrative treatment, "C19"–the COVID-19 salience treatment, and "N"–the neutral treatment. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C4. Testing distributions of trust

Treatments	Kolmogorov-Smirnov	Epps-Singleton
Uncooperative vs Cooperative	0.070	5.057
	(0.951)	(0.281)
Uncooperative vs COVID-19	0.083	5.828
	(0.851)	(0.212)
Cooperative vs COVID-19	0.095	4.200
	(0.715)	(0.380)
COVID-19 vs Neutral	0.101	2.735
	(0.636)	(0.603)

Note: The table presents the two-sample Kolmogorov-Smirnov and Epps-Singleton test statistics, with p-values in parentheses. These tests compare the distributions of the fraction of endowment sent by trustors to trustees in the trust game across selected treatments.

Table C5. Regressions on trust (Tobit)

Trust	(1)	(2)	(3)	(4)
Uncooperative narrative	−0.026	−0.002	−0.005	−0.008
	(0.065)	(0.065)	(0.064)	(0.065)
Cooperative narrative	0.006	0.026	0.017	0.021
	(0.065)	(0.064)	(0.064)	(0.064)
COVID-19 salience	−0.050	−0.025	−0.028	−0.027
	(0.065)	(0.065)	(0.065)	(0.065)
Age		−0.00003	0.001	0.0003
		(0.002)	(0.002)	(0.002)
Female gender		−0.081*	−0.073	−0.074
		(0.046)	(0.046)	(0.046)
University education		0.060	0.050	0.044
		(0.051)	(0.051)	(0.051)
Income: £500–749		−0.166**	−0.160**	0.139*
		(0.075)	(0.075)	(0.076)
Income: £750–999		−0.043	−0.041	−0.036
		(0.087)	(0.086)	(0.086)
Income: £1000–1249		−0.126	−0.109	−0.099
		(0.082)	(0.082)	(0.081)
Income: £1250–1499		−0.070	−0.060	−0.044
		(0.089)	(0.089)	(0.089)
Income: £1500–1749		0.0001	−0.004	0.019
		(0.090)	(0.090)	(0.090)
Income: £1750–1999		−0.152	−0.164	−0.176*
		(0.105)	(0.104)	(0.105)
Income: >£2000		−0.193**	−0.179**	−0.176**
		(0.078)	(0.077)	(0.077)
Political party: Conservative			−0.042	−0.046
			(0.067)	(0.067)
Political party: Lib Dem			0.030	0.042

Trust	(1)	(2)	(3)	(4)
			(0.086)	(0.085)
Political party: Green			0.151*	0.158*
			(0.082)	(0.082)
Political party: Scottish			−0171	−0.169
			(0.117)	(0.117)
Political party: Reform UK			−0.115	−0.112
			(0.164)	(0.163)
Political party: Other			0.177	0.177
			(0.198)	(0.198)
Political party: None			−0.069	−0.070
			(0.064)	(0.064)
Sick with COVID-19				0.163
				(0.125)
Family sick with COVID-19				−0.016
				(0.067)
At risk of COVID-19: Yes				0.121*
				(0.064)
At risk of COVID-19: Do not know				0.087
				(0.097)
Constant	0.562***	0.622***	0.599***	0.589***
	(0.046)	(0.100)	(0.102)	(0.103)
Observations	435	435	435	435
Pseudo R-squared	0.001	0.020	0.035	0.044

Note: The table reports the Tobit estimates with standard errors in parentheses. The dependent variable trust is measured on the basis of the fraction of the endowment sent by the trustor to the trustee in the trust game. The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C6. Regressions on trust using a reduced sample (OLS)

Trust	(1)	(2)	(3)	(4)
Uncooperative narrative	-0.064	-0.049	-0.052	-0.054
	(0.047)	(0.047)	(0.046)	(0.047)
Cooperative narrative	-0.032	-0.013	-0.018	-0.017
	(0.046)	(0.047)	(0.048)	(0.049)
COVID-19 salience	-0.048	-0.032	-0.032	-0.033
	(0.043)	(0.042)	(0.043)	(0.042)
Age		-0.001	-0.000	-0.000
		(0.001)	(0.001)	(0.001)
Female gender		-0.066**	-0.061*	-0.061*

Trust	(1)	(2)	(3)	(4)
		(0.032)	(0.032)	(0.032)
University education		0.041	0.035	0.031
		(0.037)	(0.039)	(0.039)
Income: £500–749		-0.131**	-0.122**	-0.114**
		(0.054)	(0.054)	(0.055)
Income: £750–999		-0.004	0.003	0.004
		(0.056)	(0.057)	(0.056)
Income: £1000–1249		-0.076	-0.061	-0.057
		(0.060)	(0.061)	(0.062)
Income: £1250–1499		-0.052	-0.039	-0.034
		(0.064)	(0.063)	(0.063)
Income: £1500–1749		-0.025	-0.018	-0.008
		(0.067)	(0.070)	(0.072)
Income: £1750–1999		-0.140**	-0.145**	-0.160**
		(0.069)	(0.069)	(0.069)
Income: >£2000		-0.131**	-0.115**	-0.119**
		(0.057)	(0.058)	(0.057)
Political party: Conservative			-0.023	-0.022
			(0.048)	(0.048)
Political party: Lib Dem			0.020	0.029
			(0.061)	(0.061)
Political party: Green			0.108*	0.111*
			(0.057)	(0.057)
Political party: Scottish			-0.104	-0.105
			(0.076)	(0.074)
Political party: Reform UK			-0.104	-0.096
			(0.137)	(0.133)
Political party: Other			0.142	0.144
			(0.133)	(0.141)
Political party: None			-0.036	-0.032
			(0.049)	(0.049)
Sick with COVID-19				0.102
				(0.086)
Family sick with COVID-19				-0.012
				(0.045)
At risk of COVID-19: Yes				0.088*
				(0.046)
At risk of COVID-19: Do not know				-0.001
				(0.075)
Constant	0.543***	0.618***	0.593***	0.594***
	(0.032)	(0.071)	(0.072)	(0.072)
Observations	404	404	404	404
R-squared	0.006	0.043	0.065	0.078

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable trust is measured on the basis of the fraction of the endowment sent by the trustor to the trustee in the trust game. The neutral treatment is the reference group. All

independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. The sample excludes individuals who respond "No" to the question "Did you find the information provided in the article as accurate?" as well as those who in the uncooperative narrative treatment responded "Cooperative" or "Neither" and those who in the cooperative narrative treatment responded "Uncooperative" or "Neither" to the question "Do you consider the information provided in the article as describing cooperative behaviour, uncooperative behaviour or neither during the COVID-19 pandemic in Britain?" $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C7. Regressions on trustworthiness beliefs (OLS)

Trustworthiness beliefs	(1)	(2)	(3)	(4)
Uncooperative narrative	-0.043	-0.050	-0.048	-0.040
	(0.031)	(0.032)	(0.032)	(0.032)
Cooperative narrative	-0.031	-0.037	-0.036	-0.032
	(0.028)	(0.029)	(0.029)	(0.029)
COVID-19 salience	-0.047	-0.055*	-0.050	-0.044
	(0.029)	(0.030)	(0.031)	(0.031)
Age		0.001	0.001	0.000
		(0.001)	(0.001)	(0.001)
Female gender		-0.006	-0.000	-0.004
		(0.022)	(0.023)	(0.023)
University education		0.004	0.006	0.006
		(0.025)	(0.026)	(0.025)
Income: £500–749		-0.006	-0.008	-0.016
		(0.036)	(0.036)	(0.037)
Income: £750–999		0.001	-0.004	-0.008
		(0.040)	(0.041)	(0.042)
Income: £1000–1249		0.026	0.025	0.025
		(0.041)	(0.043)	(0.043)
Income: £1250–1499		0.009	0.005	-0.002
		(0.044)	(0.043)	(0.043)
Income: £1500–1749		0.067**	0.064*	0.057
		(0.034)	(0.034)	(0.035)
Income: £1750–1999		0.071	0.069	0.057
		(0.048)	(0.048)	(0.050)
Income: >£2000		0.029	0.030	0.021
		(0.043)	(0.043)	(0.044)
Political party: Conservative			0.016	0.015
			(0.030)	(0.030)
Political party: Lib Dem			-0.013	-0.005
			(0.043)	(0.044)
Political party: Green			0.049	0.053
			(0.035)	(0.036)

Trustworthiness beliefs	(1)	(2)	(3)	(4)
Political party: Scottish			-0.057	-0.056
			(0.058)	(0.058)
Political party: Reform UK			0.052	0.055
			(0.072)	(0.071)
Political party: Other			-0.034	-0.040
			(0.101)	(0.102)
Political party: None			-0.028	-0.028
			(0.038)	(0.038)
Sick with COVID-19				0.039
				(0.076)
Family sick with COVID-19				-0.069**
				(0.030)
At risk of COVID-19: Yes				0.008
				(0.030)
At risk of COVID-19: Do not know				-0.011
				(0.051)
Constant	0.444***	0.409***	0.407***	0.419***
	(0.020)	(0.050)	(0.051)	(0.051)
Observations	391	391	391	391
R-squared	0.008	0.023	0.037	0.049

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable trustworthiness beliefs is constructed using the responses by the trustors to the incentivized question "How much do you expect to receive from player 2?", which are expressed as the fraction of the amount sent by the trustors to the trustees. The belief elicitation procedure includes only the trustors who sent a non-zero amount to the trustees. The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C8. Regressions on trustworthiness (OLS)

Trustworthiness	(1)	(2)	(3)	(4)
Uncooperative narrative	0.022	0.018	0.016	0.018
	(0.035)	(0.036)	(0.037)	(0.037)
Cooperative narrative	-0.023	-0.026	-0.029	-0.030
	(0.032)	(0.032)	(0.032)	(0.032)
COVID-19 salience	0.025	0.019	0.015	0.016
	(0.035)	(0.035)	(0.035)	(0.035)
Age		0.002***	0.002***	0.002**
		(0.001)	(0.001)	(0.001)
Female gender		0.007	0.004	0.005
		(0.025)	(0.026)	(0.026)

Trustworthiness	(1)	(2)	(3)	(4)
Other gender		-0.010	-0.007	-0.033
		(0.047)	(0.049)	(0.067)
University education		0.061**	0.058**	0.056*
		(0.028)	(0.029)	(0.029)
Income: £500–749		0.018	0.013	0.017
		(0.043)	(0.043)	(0.043)
Income: £750–999		0.027	0.017	0.015
		(0.047)	(0.047)	(0.048)
Income: £1000–1249		-0.042	-0.038	-0.034
		(0.042)	(0.042)	(0.042)
Income: £1250–1499		-0.036	-0.031	-0.034
		(0.047)	(0.049)	(0.049)
Income: £1500–1749		0.067*	0.061	0.063
		(0.040)	(0.041)	(0.041)
Income: £1750–1999		0.030	0.027	0.033
		(0.052)	(0.053)	(0.054)
Income: >£2000		-0.030	-0.039	-0.034
		(0.043)	(0.045)	(0.046)
Political party: Conservative			-0.019	-0.019
			(0.039)	(0.039)
Political party: Lib Dem			0.041	0.047
			(0.044)	(0.045)
Political party: Green			-0.000	0.003
			(0.039)	(0.038)
Political party: Scottish			0.101*	0.109*
			(0.057)	(0.057)
Political party: Reform UK			0.044	0.047
			(0.052)	(0.053)
Political party: Other			-0.033	-0.026
			(0.084)	(0.083)
Political party: None			-0.002	0.000
			(0.035)	(0.036)
Sick with COVID-19				0.032
				(0.045)
Family sick with COVID-19				-0.044
				(0.040)
At risk of COVID-19: Yes				0.031
				(0.034)
At risk of COVID-19: Do not know				0.047
				(0.046)
Constant	0.375***	0.241***	0.244***	0.254***
	(0.024)	(0.054)	(0.058)	(0.060)
Observations	396	396	396	396
R-squared	0.006	0.046	0.058	0.064

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable trustworthiness is measured on the basis of the fraction of the received tripled amount by the trustee that he/ she returned to the trustor in the trust game. The sample includes only the trustees

who received a non-zero amount from the trustors. The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C9. Regressions on social trust (Probit)

Social trust	(1)	(2)	(3)	(4)
Uncooperative narrative	−0.018	−0.056	−0.068	−0.055
	(0.067)	(0.066)	(0.065)	(0.065)
Cooperative narrative	0.061	0.042	0.056	0.061
	(0.067)	(0.066)	(0.064)	(0.064)
COVID-19 salience	−0.000	−0.040	−0.018	−0.017
	(0.067)	(0.066)	(0.066)	(0.066)
Age		0.006***	0.007***	0.007***
		(0.002)	(0.002)	(0.002)
Female gender		−0.056	−0.066	−0.062
		(0.047)	(0.047)	(0.047)
University education		0.012	−0.015	−0.018
		(0.052)	(0.052)	(0.052)
Income: £500–749		0.089	0.081	0.053
		(0.078)	(0.078)	(0.078)
Income: £750–999		−0.015	−0.028	−0.020
		(0.091)	(0.090)	(0.090)
Income: £1000–1249		−0.061	−0.043	−0.052
		(0.085)	(0.084)	(0.084)
Income: £1250–1499		0.128	0.118	0.094
		(0.091)	(0.090)	(0.090)
Income: £1500–1749		0.020	0.012	−0.007
		(0.094)	(0.092)	(0.092)
Income: £1750–1999		0.245**	0.233**	0.209**
		(0.100)	(0.101)	(0.103)
Income: >£2000		0.136*	0.150*	0.132*
		(0.080)	(0.079)	(0.079)
Political party: Conservative			−0.089	−0.081
			(0.069)	(0.069)
Political party: Lib Dem			0.025	0.024
			(0.088)	(0.088)
Political party: Green			0.059	0.058
			(0.080)	(0.080)
Political party: Scottish			0.039	0.031
			(0.116)	(0.116)
Political party: Reform UK			−0.174	−0.137
			(0.169)	(0.171)
Political party: Other			0.098	0.111
			(0.182)	(0.182)

Social trust	(1)	(2)	(3)	(4)
Political party: None			−0.221***	−0.206***
			(0.064)	(0.064)
Sick with COVID-19				−0.157
				(0.130)
Family sick with COVID-19				−0.014
				(0.069)
At risk of COVID-19: Yes				0.005
				(0.066)
At risk of COVID-19: Do not know				−0.200**
				(0.097)
Observations	435	435	435	435
Pseudo R-squared	0.003	0.047	0.075	0.086

Note: The table reports the average marginal effect from the Probit regression with standard errors in parentheses. The binary dependent variable is social trust, measured using the responses to the following survey question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Social trust equals 1 if the answer is "most people can be trusted" and equals 0 if the answer is "one can't be too careful." The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table C10. Regressions on trust in the government (OLS)

Trust in the government	(1)	(2)	(3)	(4)
Uncooperative narrative	0.523	0.402	0.291	0.352
	(0.344)	(0.342)	(0.328)	(0.335)
Cooperative narrative	0.471	0.403	0.524	0.581*
	(0.348)	(0.351)	(0.338)	(0.341)
COVID-19 salience	0.569	0.431	0.289	0.356
	(0.348)	(0.354)	(0.325)	(0.330)
Age		0.017*	0.004	0.002
		(0.010)	(0.009)	(0.010)
Female gender		-0.186	-0.035	-0.033
		(0.244)	(0.233)	(0.234)
University education		-0.334	-0.153	-0.161
		(0.274)	(0.267)	(0.268)
Income: £500–749		0.143	-0.137	-0.140
		(0.380)	(0.333)	(0.338)
Income: £750–999		0.261	-0.010	0.003
		(0.481)	(0.430)	(0.431)
Income: £1000–1249		-0.043	-0.353	-0.325
		(0.408)	(0.371)	(0.373)

Trust in the government	(1)	(2)	(3)	(4)
Income: £1250–1499		0.658	0.461	0.468
		(0.503)	(0.472)	(0.481)
Income: £1500–1749		0.833*	0.512	0.572
		(0.490)	(0.482)	(0.482)
Income: £1750–1999		0.667	0.531	0.471
		(0.511)	(0.514)	(0.524)
Income: >£2000		0.806*	0.632	0.616
		(0.432)	(0.409)	(0.408)
Political party: Conservative			2.731***	2.702***
			(0.334)	(0.336)
Political party: Lib Dem			0.190	0.246
			(0.413)	(0.421)
Political party: Green			-0.457	-0.422
			(0.403)	(0.410)
Political party: Scottish			0.004	0.045
			(0.534)	(0.529)
Political party: Reform UK			0.192	0.164
			(0.933)	(0.923)
Political party: Other			0.091	0.169
			(0.986)	(0.990)
Political party: None			-0.269	-0.247
			(0.321)	(0.326)
Sick with COVID-19				-0.076
				(0.547)
Family sick with COVID-19				-0.443
				(0.310)
At risk of COVID-19: Yes				0.283
				(0.330)
At risk of COVID-19: Do not know				0.426
				(0.493)
Constant	2.826***	2.221***	2.343***	2.370***
	(0.249)	(0.526)	(0.514)	(0.520)
Observations	435	435	435	435
R-squared	0.008	0.039	0.211	0.217

Note: The table reports the OLS estimates with robust standard errors in parentheses. The dependent variable is trust in the government, constructed using the responses to the following question: "On a scale from 0 to 10, how much do you personally trust your country's government?," wherein 0 indicates "no trust at all," and 10 indicates "complete trust." The neutral treatment is the reference group. All independent variables are binary, except for age, which is a continuous variable. University education includes those who answered that they have a university bachelor's degree, a graduate or professional degree, or some university but no degree. For the variable income, the omitted category is £500–749. For the variable political party, the omitted category is labor. For the variables sick with COVID-19, family sick with COVID-19, and at risk of COVID-19, the omitted category is no. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

SUMMARY (SANTRAUKA)

Temos aktualumas. Pastaraisiais metais pasaulyje stebimi reikšmingi įvykiai, tokie kaip COVID-19 pandemija ir sparčiai vykstanti klimato kaita, pabrėžė poreikį geriau suprasti ir efektyviau spręsti kolektyvinio veiksmo problemas. Kolektyvinio veiksmo problema arba socialinė dilema yra situacija, kai visiems situacijos dalyviams būtų naudinga bendradarbiauti siekiant bendro tikslo, tačiau nesuderinami asmeniniai interesai trukdo bendradarbiauti ir pasiekti tikslą efektyviu būdu (Olson, 1965). Tai gali sukelti situacijas, kai viešosios gėrybės, pavyzdžiui, švari ir (arba) sveika aplinka, nesuteikiamos, arba kai išeikvojami bendri ištekliai, pavyzdžiui, žuvų telkiniai ar miškai. Pasak tradicinės kolektyvinio veiksmo teorijos (Olson, 1965), asmenys negali patys išspręsti kolektyvinio veiksmo problemų – jiems būtinos taisyklės, kurių laikymasis būtų užtikrinamas išorės institucijų. Tačiau empirinės literatūros duomenys rodo, kad pasitikėjimas ar socialinės normos gali padėti žmonių grupėms pačioms išspręsti kolektyvinio veiksmo problemas, ypač kai situacijos apima gana nedidelį asmenų skaičių (Fukuyama, 1996; Ostrom, 2000; Putnam, 2000). Apibendrintai šie bendradarbiavimą skatinantys ištekliai paprastai vadinami socialiniu kapitalu.

Pasitikėjimas kitais žmonėmis, kurie nepriklauso artimiausiam socialiniam ratui – vadinamasis apibendrintas arba socialinis pasitikėjimas – mažina išnaudojimo baimę ir suvokiamą su bendradarbiavimu susijusią riziką ir tokiu būdu skatina bendradarbiavimą (Yamagishi ir Sato, 1986). Pasitikėjimas institucijomis, kurios užtikrina taisyklių laikymąsi visuomenėje, taip pat gali mažinti susirūpinimą dėl išnaudojimo ir sustiprinti narių bendradarbiavimą. Be pasitikėjimo svarbų vaidmenį vaidina ir socialinės normos. Norėdami prisitaikyti, išvengti bausmės, pasinaudoti koordinuotų veiksmų nauda arba atsižvelgti į informacinius signalus, visuomenės nariai yra linkę laikytis socialinių normų ir tai taip pat daro įtaką veiksmams ir įsitikinimams, susijusiems su kolektyvinio veiksmo problemomis (Constantino ir kt., 2022). Nepaisant to, situacijos, reikalaujančios kolektyvinių veiksmų, tokios kaip karas (Guriev ir Melnikov, 2016), stichinės nelaimės (Skidmore ir Toya, 2014; Veszteg ir kt., 2015; Cassar ir kt., 2017) arba sveikatos krizės (Aassve ir kt., 2021; Eichengreen ir kt., 2021, 2023), gali paveikti paties socialinio kapitalo raidą taip padidindamos arba sumažindamos visuomenės potencialą ateityje spręsti kolektyvinio veiksmo problemas.

Mokslinė problema. Nors socialinio kapitalo reikšmė mažos apimties kolektyvinio veiksmo problemose yra neblogai suprantama, nėra iki galo

aišku, kiek pasitikėjimas ir socialinių normų intervencijos gali būti veiksmingos keičiant žmonių elgseną sprendžiant didelės apimties kolektyvinio veiksmo problemas. Be to, trūksta žinių apie tai, kaip informacija, susijusi su kolektyvinio veiksmo problemomis, gali paveikti paties socialinio kapitalo raidą.

Pasaulinis COVID-19 pandemijos mastas ir reikšmė visuomenės sveikatai ir ekonomikai suteikė unikalią galimybę tirti pasitikėjimo vaidmenį sprendžiant didelės apimties kolektyvinio veiksmo problemas. Vakcinacija nuo infekcinių ligų yra vienas tokių problemų pavyzdžių. Vakcinacija ne tik suteikia imunitetą nuo užkrečiamos ligos pasiskiepijusiems, bet ir netiesioginę apsaugą kitiems visuomenės nariams. Tačiau kartais asmenys, norėdami išvengti su skiepijimusi susijusių finansinių ir nefinansinių kaštų, nusprendžia nesiskiepyti, pasinaudodami kitų teikiamu imunitetu. Dėl nepakankamo visuomenės narių bendradarbiavimo imunizuojant visuomenę sveikatos krizės metu, sveikatos krizės valdymas gali būti mažiau veiksmingas ir turėti neigiamą poveikį visuomenės sveikatai bei ekonomikai. Nors yra atlikta daug empirinių tyrimų apie pasitikėjimo reikšmę norui skiepytis COVID-19 pandemijos metu (pvz., Kreps ir kt., 2020; Grüner ir Krüger, 2021; Lazarus ir kt., 2021; Romano ir kt., 2021; Sturgis ir kt., 2021; Thunström ir kt., 2021; Bass ir kt., 2022), daugelyje jų nagrinėjamas tik vienas ar keli pasitikėjimo tipai ir tai kelia abejonių dėl gautų įverčių tikslumo. Be to, trūksta įrodymų, kaip konkrečios pasitikėjimo formos, pavyzdžiui, pasitikėjimas nepažįstamais asmenimis ar farmacijos įmonėmis, sąveikauja su noru skiepytis pandemijos metu. Svarbu ir tai, kad į daugumą tokio pobūdžio tyrimų nėra įtraukiama Lietuva – viena labiausiai COVID-19 pandemijos paveiktų Europos šalių (The Economist, 2020). Todėl pirmajame šios disertacijos skyriuje nagrinėju, koks yra skirtingų pasitikėjimo formų ryšys su Lietuvos gyventojų noru skiepytis COVID-19 pandemijos metu.

Klimato kaita yra viena didžiausių kolektyvinio veiksmo problemų (IPCC, 2022). Vakarų visuomenės iš esmės sutaria dėl poreikio skubiai spręsti šią problemą (Europos Komisija, 2023; Leiserowitz ir kt., 2023), tačiau atlikti tyrimai atskleidė, kad visuomenės nariai yra linkę klaidingai interpretuoti su klimato kaita susijusias visuomenėje vyraujančias socialines normas. Kadangi kovos su klimato kaita nepalaikančios iniciatyvos ir nuomonės neretai yra stipriai išreikštos ir susilaukia daug dėmesio, visuomenės nariai ima nuvertinti klimatui „draugiškų“ veiksmų ir įsitikinimų populiarumą (Leviston ir kt., 2013; Geiger ir Swim, 2016; Sokoloski ir kt., 2018; Mildenberger ir Tingley, 2019; Sparkman ir kt., 2022; Andre ir kt., 2024). Dėl tokio klaidingo socialinių normų suvokimo, kitaip vadinamo „pliuralistiniu nežinojimu“ (angl.

pluralistic ignorance), žmonės gali būti mažiau motyvuoti patys imtis veiksmų, prisidedančių prie klimato kaitos mažinimo, įskaitant sumažėjusį norą viešai kelti klimato kaitos problemą ir reikalauti jos sprendimo – reiškinį, dar vadinamą „savęs nutildymu“ (Geiger ir Swim, 2016). Ši problema ypač aktuali siekiant politinių priemonių, kurios padėtų kovoti su klimato kaita, tokių kaip anglies dioksido apmokestinimas, įgyvendinimo. Tačiau trūksta tyrimų, kurie vertintų „pliuralistinį nežinojimą“ ir jo koregavimo poveikį klimato veiksmams politikos priemonių kontekste, ypač tokiems, kurie galėtų būti viešai matomi. Todėl antrajame disertacijos skyriuje tiriu, kaip informacinės intervencijos, kuriomis siekiama koreguoti klaidingą supratimą apie visuomenėje vyraujantį klimato politikos priemonių palaikymą, veikia visuomenės narių privačius ir viešai matomus veiksmus, orientuotus į klimato kaitą mažinančias politikos priemones.

Atsižvelgiant į socialinio kapitalo vaidmenį sprendžiant kolektyvinio veiksmo problemas, ekonominėje literatūroje didelis dėmesys skiriamas veiksniams, turintiems įtakos socialinio kapitalo, o ypač pasitikėjimo, raidai (pvz., Putnam ir kt., 1993; Alessina ir La Ferrara, 2002; Nunn ir Wantchekon, 2011). Nors kai kurie autoriai teigia, kad pasitikėjimas yra inertiškas kultūrinis konstruktas (Bisin ir Verdier, 2001; Guiso ir kt., 2008; Tabellini, 2008), kiti tyrimai rodo, kad reikšmingi įvykiai gali turėti didelės įtakos pasitikėjimo raidai (Skidmore ir Toya, 2014; Veszteg ir kt., 2015; Algan ir kt., 2017). Įrodyta, kad pasitikėjimui įtaką gali daryti ir sveikatos krizės (pvz., Aassve ir kt., 2021; Li ir kt., 2021; Aassve ir kt., 2022, Gambetta ir Morisi, 2022; Casoria ir kt., 2023). Tačiau tyrimai, analizuojantys COVID-19 pandemijos ir pasitikėjimo ryšį, nedavė aiškių rezultatų. Be to, pandemijos poveikis pasitikėjimui gali priklausyti nuo to, kaip informacija apie sveikatos krizę pateikiama visuomenei (Aassve ir kt., 2021). COVID-19 pandemijos metu didžioji dalis viešosios komunikacijos rėmėsi normomis pagrįstų naratyvų, tai yra žinučių ar istorijų, vertinančių visuomenės elgseną pandemijos normų laikymosi požiūriu, sklaida. Nepaisant to, tokių naratyvų poveikis pasitikėjimui iki šiol nebuvo tirtas. Todėl, siekdama užpildyti šias spragas, trečiajame disertacijos skyriuje analizuoju, kaip normomis paremta komunikacija apie pandemiją veikia žmonių tarpusavio pasitikėjimą.

Šios disertacijos **tikslas** - ištirti socialinio kapitalo, ypač pasitikėjimo ir socialinių normų, ir žmonių elgsenos ar jų ketinimų sąveikas kolektyvinio veiksmo problemų kontekste.

Darbo tikslui pasiekti buvo keliami šie **uždaviniai**:

1. Išanalizuoti skirtingų pasitikėjimo formų reikšmę paaiškinant ketinimus skiepytis COVID-19 pandemijos metu.
2. Įvertinti, kokį poveikį privatiems ir viešai matomiems veiksmams, orientuotiems į klimato kaitą mažinančias politikos priemones, turi informacija, kuria koreguojamas klaidingas supratimas apie klimato politikos priemonių palaikymą visuomenėje.
3. Išmatuoti COVID-19 pandemijos and susijusių normomis paremtų naratyvų poveikį žmonių tarpusavio pasitikėjimui.

Siekiant numatyto tikslo ir įgyvendinant uždavinius, skirtingose pasaulio šalyse buvo atlikti trys elgsenos ekonomikos mokslo krypties tyrimai, aprašyti atskiruose šios disertacijos skyriuose**.**

Tyrimo metodai. Šioje disertacijoje vykdytiems tyrimams duomenys buvo renkami naudojant apklausos ir eksperimentinius metodus. Vykdant pirmajame skyriuje aprašytą tyrimą, per COVID-19 pandemijos piką buvo atlikta reprezentatyvi Lietuvos gyventojų apklausa. Šia apklausa, kurioje dalyvavo apie 1000 dalyvių, buvo renkama informacija apie respondentų ketinimus skiepytis, COVID-19 vakcinai tapus prieinamai, pasitikėjimą įvairiomis šalies institucijomis, nepažįstamais žmonėmis, socialines bei demografines respondentų charakteristikas, sveikatos būklę, įvairius nuogąstavimus bei konspiracinius įsitikinimus. Siekiant nustatyti ryšį tarp vakcinacijos ketinimų ir skirtingų pasitikėjimo formų, buvo vertinamas ranginės logistinės regresijos modelis.

Antrajame skyriuje aprašytas tyrimas rėmėsi Jungtinėse Amerijos Valstijose (JAV) įgyvendintu skatinamuoju internetiniu eksperimentu, tai yra toks eksperimentas, kuriame, siekiant gauti tikslius įverčius, dalyviams pagal jų įgyvendintus sprendimus buvo mokami pinigai. Šiame eksperimente dalyvavo 1587 amerikiečiai. Eksperimentas apėmė dvi eksperimentines sąlygas. Vienoje sąlygoje eksperimento dalyviams buvo suteikta informacija apie faktinį anglies dioksido mokesčio palaikymą JAV visuomenėje, o kontrolinėje sąlygoje tokia informacija nebuvo pateikta. Privatūs klimato veiksmai buvo matuojami finansiškai paskatintu sprendimu paaukoti organizacijai, kuri užsiima klimato politikos lobizmu, o viešieji klimato veiksmai buvo vertinami naudojant dalyvių deklaruotą minimalų priimtiną atlygį už dalyvavimą klimato politikos diskusijoje su kitais dalyviais, kurie palaiko tą pačią politinę partiją. Informacijos poveikis klimato veiksmams (privatiems ir viešiesiems) buvo vertinamas tiesinės regresijos modelis naudojant mažiausių kvadratų (OLS) metodą ir probit regresijos modelis.

Trečiajame skyriuje atliktas tyrimas rėmėsi pandemijos pabaigoje (2022 m. gegužės–birželio mėn.) Jungtinėje Karalystėje (JK) įgyvendintu skatinamuoju internetiniu eksperimentu. Eksperimentą sudarė keturios eksperimentinės sąlygos: „bendradarbiaujantis naratyvas“, „nebendradarbiaujantis naratyvas“, „COVID-19“ ir „neutrali“. Bendradarbiaujančio naratyvo ir nebendradarbiaujančio naratyvinio sąlygose dalyviai skaitė straipsnį, kuriame buvo atitinkamai akcentuojama, kaip britai laikėsi arba nesilaikė socialinių normų COVID-19 pandemijos metu. COVID-19 sąlygoje dalyviai perskaitė straipsnį, kuris jiems tik priminė apie vykusią COVID-19 pandemiją, o neutralioje sąlygoje – neutralaus tono straipsnį, nesusijusį su COVID-19 pandemija. Kiekvienoje eksperimentinėje sąlygoje dalyvavo po 217–220 dalyvių. Vėliau, naudojant ekonominį pasitikėjimo žaidimą (Berg ir kt., 1995), buvo matuojamas dalyvių tarpusavio pasitikėjimas. Dalyvių taip pat buvo prašoma išreikšti savo požiūrį į pandemiją ir vakcinaciją. Pandemijos ir normomis pagrįstos komunikacijos poveikis pasitikėjimui buvo įvertintas naudojant t-testus ir vertinant tiesinės regresijos modelį mažiausių kvadratų (OLS) metodu.

Ginamieji teiginiai:

1. Didesnis pasitikėjimas vyriausybe, mokslu ir farmacijos įmonėmis siejamas su didesniu noru pasiskiepyti nuo COVID-19. Vidutiniškai 1 punktu didesnis pasitikėjimas vyriausybe, mokslu ir farmacijos įmonėmis yra susijęs su atitinkamai 3,7%, 3,9 ir 4,7% didesne tikimybe išreikšti tvirtą ketinimą pasiskiepyti. Pasitikėjimas nepažįstamais žmonėmis, sveikatos apsauga ar žiniasklaida neparodė reikšmingo ryšio su ketinimais pasiskiepyti nuo COVID-19 Lietuvoje.
2. Neteisingo supratimo apie visuomenės paramą anglies dioksido apmokestinimui ištaisymas turi nedidelį neigiamą poveikį privatiems klimato veiksmams, kurie vertinami naudojant aukojimo klimato organizacijai sprendimą. Šis neigiamas poveikis atsiranda dėl asmenų, kurie pervertina visuomenės paramą anglies dioksido apmokestinimui; gavę informaciją apie faktinę visuomenės paramą tokiam mokesčiui, šie dalyviai savo aukas vidutiniškai sumažina iki 22 proc. – tai rodo, kad informacijos suteikimas turi „bumerango efektą“.
3. Klaidingą supratimą koreguojanti informacija turi teigiamos įtakos viešai matomiems klimato veiksmams, nes dėl jos sumažėja vidutinis minimalus priimtinas atlygis už dalyvavimą klimato politikos

diskusijose. Šis teigiamas poveikis višiesiems klimato veiksmams ypač ryškus tarp respublikonų – suteikus informaciją, respublikonų deklaruotas vidutinis minimalus priimtinas atlygis sumažėja daugiau nei 20%. Nėra įrodymų, kad informacija turėtų įtakos pačių dalyvių deklaruotam norui dalyvauti klimato politikos diskusijose.

4. Normomis paremti naratyvai, pabrėžiantys bendradarbiaujantį ar nebendradarbiaujantį elgesį, reikšmingai nepakeičia vidutinio pasitikėjimo lygio. Priminimas apie COVID-19 pandemiją taip pat neturi įtakos pasitikėjimui.
5. Nebendradarbiaujantys naratyvai, tai yra, žinutės, kurios pabrėžia, kad visuomenės narių nebendradarbiavimą laikantis pandeminių normų, skatina žmones suvokti pandemiją kaip rimtesnę sveikatos krizę ir išreikšti didesnį palaikymą skiepams apskritai.

Mokslinis naujumas. Šioje disertacijoje atlikti tyrimai reikšmingai papildo egzistuojančią mokslinę literatūrą. Pirma, gauti rezultatai praplečia supratimą apie pasitikėjimo ir bendradarbiavimo sąveiką didelio masto kolektyvinio veiksmo problemų kontekste, konkrečiai – vakcinacijos srityje. Šioje disertacijoje buvo atlikta išsami analizė, siekiant ištirti net šešių skirtingų pasitikėjimo tipų sąsajas su ketinimais skiepytis COVID-19 pandemijos metu, tuo tarpu ankstesni tyrimai daugiausia dėmesio skyrė vienam pasitikėjimo tipui arba keliems pasirinktiems tipams (Grüner ir Krüger, 2021; Lazarus et al., 2021; Sturgis et al., 2021; Thunström et al., 2021). Mano analizė apima specifinius pasitikėjimo tipus, tokius kaip pasitikėjimas nepažįstamaisiais ir pasitikėjimas farmacijos įmonėmis, kurių poveikis skiepijimuisi pandemijos metu iki šiol nebuvo tyrinėtas. Be to, ši disertacija pirmą kartą pateikia rezultatus apie pasitikėjimo ir vakcinacijos sąveiką Lietuvoje. Pandeminėje literatūroje ši šalis iki šiol nebuvo plačiai tyrinėta, nors pandemijos metu ji pasižymėjo vangiu visuomenės skiepijimu (Ritchie, Mathieu, Rodés-Guirao ir kt., 2020) ir dideliu skepticizmu vakcinoms (Bergmann ir kt., 2021). Lietuva yra įdomus atvejis ir dėl to, kad ji pasižymi santykinai žemu socialinio (Haerpfer ir kt., 2022) ir institucinio pasitikėjimo lygiu (Europos Komisija, 2021). Rezultatai apie pasitikėjimo ir individualaus elgesio sąveiką kolektyvinio veiksmo problemų kontekste, ypač aplinkose, esančiose už dažniausiai tyrinėjamų Vakarų valstybių ribų, yra ypač svarbūs siekiant veiksmingai spręsti globalius iššūkius.

Antra, šio tyrimo rezultatai reikšmingai prisideda prie elgsenos ekonomikos literatūros apie socialinių normų suvokimą koreguojančių informacinių intervencijų veiksmingumą skatinant individualius klimato veiksmus. Skirtingai nuo ankstesnių tyrimų (Mildenberger ir Tingley, 2019;

Pompeo ir Serdarevic, 2021; Fang ir Innocenti, 2023; Andre ir kt., 2024), šis tyrimas yra orientuotas į klimato politikos priemones, analizuojant tiek klaidingą konkrečios klimato politikos priemonės (t.y. anglies dioksido apmokestinimo) palaikymą visuomenėje, tiek ir į politikos priemones orientuotus individualius klimato veiksmus (t. y. norą paaukoti klimato organizacijai, kuri siekia paveikti politikos formuotojus klimato politikos klausimais, ir norą dalyvauti diskusijose apie klimato politikos priemones). Atsižvelgiant į tai, kad JAV vyrauja klaidingi įsitikimai dėl visuomenės palaikymo klimato politikos priemonėms (Sparkman ir kt., 2022) ir vangus klimato politikos įgyvendinimas daugelyje Vakarų šalių, šis į politiką orientuotas požiūris yra ypač aktualus. Be to, šiame tyrime analizuojamas klaidingus įsitikinimus ištaisančios informacijos apie faktinę paramą anglies dioksido apmokestinimui poveikis viešai matomiems klimato veiksmams, jų vertinimui naudojant asmenų deklaruotą mažiausią atlygį, kurį jie sutiktų priimti už dalyvavimą klimato politikos diskusijose, o tai, mano žiniomis, anksčiau nebuvo padaryta. Siekiant įvertinti viešuosius individualius klimato veiksmus, ankstesni „pliuralistinio nežinojimo“ tyrimai daugiausia rėmėsi pačių tyrimo dalyvių pateiktais atsakymais apie norą dalintis informacija socialinėje žiniasklaidoje (Pompeo ir Serdarevic, 2021) arba ketinimais dalyvauti klimato aktyvizmo veiklose (Andre ir kt., 2024) bei klimato diskusijose (Geiger ir Swim, 2016). Tačiau tokie vertinimai, kurie remiasi atsakymais į hipotetinius klausimus, gali netiksliai atspindėti tikrąją dalyvių elgseną ar įsitikinimus, dėl noro būti kitų, pavyzdžiui, tyrimą vykdančių asmenų, teigiamai vertinamiems (Vesely ir Klöckner, 2020).

Trečia, šio tyrimo rezultatai pagerina supratimą apie normomis pagrįstos komunikacijos poveikį socialinio kapitalo raidai. Mano žiniomis, tai yra pirmasis tyrimas, kuriame analizuojamas priežastinis ryšys tarp normomis pagrįstų naratyvų, įskaitant bendradarbiaujančius ir nebendradarbiaujančius tipus, ir tarpasmeninio pasitikėjimo. Šis tyrimas prisideda ir prie ankstesnių tyrimų, kuriais analizuojamas COVID-19 pandemijos ir pasitikėjimo ryšys (Esaiasson ir kt., 2020; Aksoy ir kt., 2021; Iacono ir kt., 2021; Li ir kt., 2021; Aassve ir kt., 2022; Casoria ir kt., 2023). Pažymėtina, kad mano tyrimas buvo atliktas vėlesniame COVID-19 pandemijos etape, kai JK beveik nebebuvo taikomi pandeminiai apribojimai (Hale ir kt., 2021), o nemaža dalis gyventojų buvo visiškai paskiepyti (Mathieu ir kt., 2021). Šis tyrimui pasirinktas laikas suteikė mažiau triukšmingą eksperimentinę aplinką, palyginti su ankstesniame pandemijos etape atliktais tyrimais, ir taip užtikrino aukštą rezultatų vidinį validumą.

Praktinė reikšmė. Šios disertacijos rezultatai turi svarbių įžvalgų politikos formavimui, siekiant paskatinti atsakingą visuomenės narių elgseną, sprendžiant kolektyvinių veiksmų problemas. Teigiama pasitikėjimo institucijomis ir noro skiepytis sąsaja iliustruoja tai, kad įgyvendinant politikos priemones, susijusias su visuomenės sveikata, pirmenybė turėtų būti teikiama pasitikėjimo pagrindinėmis institucijomis kūrimui ir stiprinimui. Skaidri komunikacija ir nuoseklūs pranešimai iš patikimų šaltinių galėtų apriboti visuomenės narių norą „zuikiauti“ ir padidinti visuomenės sveikatos apsaugos priemonių laikymąsi sveikatos krizių metu. „Pliuralistinio nežinojimo“ tyrimo rezultatai atskleidžia, kad klaidingo visuomenėje vyraujančios paramos klimato politikos priemonėms vertinimo ištaisymas gali sutelkti viešai matomus veiksmus klimato kaitos srityje, tokius kaip noras diskutuoti klimato politikos tema, tačiau tai taip gali sumenkinti privačius klimato veiksmus. Todėl politikos formuotojai ir klimato kaitos aktyvistai turėtų būti atsargūs planuodami informacines kampanijas ir apsvarstyti tikslinę komunikaciją, kad būtų išvengta bumerango poveikio tam tikrų visuomenės grupių klimato veiksmams. Rezultatas, kad normomis paremtų naratyvų naudojimas neturi tiesioginio neigiamo poveikio pasitikėjimui, pateisina tokio tipo komunikacijos naudojimą formuojant visuomenės narių požiūrį į su visuomenės sveikata susijusius klausimus bei elgseną. Ši įžvalga gali padėti politikos formuotojams ir komunikacijos specialistams parengti veiksmingesnes žinutes, kurios galėtų paveikti visuomenės požiūrį, ištikus sveikatos krizei, tuo pačiu nesibaiminant neigiamo tokių žinučių poveikio visuomenės narių tarpusavio pasitikėjimui.

Tyrimo apribojimai. Nors ši disertacija reikšmingai prisideda prie elgsenos ekonomikos literatūros, užpildydama aiškias spragas, ir atsako į svarbius politikos klausimus, yra ir keletas apribojimų. Pirmajame disertacijos skyriuje aprašytame tyrime nebuvo atsižvelgta į asmenų susirūpinimą dėl COVID-19 vakcinos saugumo, šalutinių poveikių ir veiksmingumo, taip pat naudoti duomenys, paremti respondentų atsakymais į hipotetinį klausimą, todėl jie gali būti šališki. Be to, šis tyrimas neleidžia daryti priežastinių išvadų. Siekiant nustatyti priežastinius ryšius ir sumažinti šališkumą kintamųjų vertinime, ateities tyrimai galėtų matuoti rodiklius, pavyzdžiui, pasitikėjimo lygį, per skatinamuosius eksperimentus ir stebėti faktinį asmenų skiepijimąsi laikui bėgant. Antrajame disertacijos skyriuje pristatytame tyrime nėra aišku, kodėl skiriasi suteiktos informacijos poveikis respublikonų ir demokratų viešai išreikštiems klimato veiksmams. Todėl reikia tyrimų, nagrinėjančių šių skirtumų priežastis, naudojant didesnes ir reprezentatyvesnes imtis. Trečiajame skyriuje aprašytame tyrime normų pagrindu sukurtų naratyvų

poveikis pasitikėjimui gali būti nuvertintas dėl to, kad tyrimas atliktas pandemijos pabaigoje, be to, gali būti skirtumų tarp šalių dėl taikytų skirtingų politikos priemonių ir komunikacijos kovojant su pandemija ir tai gali riboti rezultatų, gautų vienoje šalyje, platesnį interpretavimą ir taikymą. Todėl vertinant naratyvų poveikį pasitikėjimui būtų naudinga atlikti tarptautinius ilgalaikius tyrimus. Apskritai, šie apribojimai suteikia postūmį būsimiesiems tyrimams apie pasitikėjimą ir socialines normas kolektyvinių veiksmų problemose.

Trumpa biografija. Laura Galdikienė domisi aplinkos ekonomika, viešąja ekonomika, socialinių ir kultūrinių veiksnių įtaka ekonomikai ir žmogaus elgsenai bei elgsenos šališkumais. Savo tyrimuose daugiausia taiko ekonominius eksperimentinius metodus. 2008 m. ISM Vadybos ir ekonomikos universitete (Lietuva) ji įgijo ekonomikos bakalauro mokslo laipsnį, o 2012 m. Amsterdamo universitete (Nyderlandai) – magistro mokslo laipsnį pagal viešosios ekonominės politikos specializaciją. 2020 m. įstojo į Vilniaus universiteto ekonomikos doktorantūros programą. 2019-2023 m. dirbo dėstytoja, o nuo 2024 m. – jaunesniąja asistente ir jaunesniąja mokslo darbuotoja Vilniaus universitete, kur dėstė Viešojo sektoriaus ekonomikos, Aplinkos ekonomikos, Elgsenos ir eksperimentinės ekonomikos dalykus bei vykdė tyrimus, susijusius su anglies dioksido mokesčių priimtinumu. 2023 m. birželio mėn., būdama doktorante, stažavosi Milano universitete, spalio mėn. - Bolonijos universitete, o 2024 m. kovo mėn. - Kalifornijos universitete San Diege. Nuo 2012 m. dirbo ekonomiste Lietuvos finansų sektoriuje - tiek šalies centriniame banke, tiek privačiose finansų įmonėse.

1. Galdikiene, L. (main author), Jaraite, J., & Kajackaite, A. (2022). Trust and vaccination intentions: Evidence from Lithuania during the COVID-19 pandemic. PloS ONE, 17(11), e0278060. https://doi.org/10.1371/journal.pone.0278060
2. Galdikiene, L. (main author), Jaraite, J., & Kajackaite, A. (2024). Effects of cooperative and uncooperative narratives on trust during the COVID-19 pandemic: Experimental evidence. Journal of Behavioral and Experimental Economics, 102246. https://doi.org/10.1016/j.socec.2024.102246

Conference presentations

The research presented in this dissertation has been shared at various dissemination events, including conferences, seminars, and summer schools. Below is a selection of conference presentations:

1. Galdikienė, L. (presenter), Jaraite, J., & Kajackaitė, A. (2022, June). Trust and vaccination intentions: Survey evidence from Lithuania during the COVID-19 pandemic. Paper presented at the 4th Baltic Economic Conference, Kaunas, Lithuania.
2. Galdikienė, L. (presenter), Jaraite, J., & Kajackaitė, A. (2023, June). Effects of cooperative and uncooperative narratives on trust and health attitudes during the COVID-19 pandemic: Experimental evidence. Paper presented at the Economic Science Association (ESA) World Meeting, Lyon, France.
3. Galdikienė, L. (presenter), Jaraite, J., & Kajackaitė, A. (2023, June). The effect of cooperative and uncooperative narratives on trust and health attitudes during the COVID-19 pandemic: Experimental evidence. Paper presented at the 5th Baltic Economic Conference, Riga, Latvia.
4. Galdikienė, L. (presenter), Jaraite, J., & Kajackaitė, A. (2023, September). Effects of cooperative and uncooperative narratives on trust and health attitudes during the COVID-19 pandemic: Experimental evidence. Paper presented at the European Economic Association Congress, Barcelona, Spain.

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