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Abstract

Women die less than men of COVID-19, but have been more concerned about its health consequences and more compliant with the public health rules imposed during the pandemic. Since return to normal life depends on vaccination, but delays in acceptance or outright refusals of vaccination are already apparent, we investigate gender differences in attitudes and expected behaviors regarding COVID-19 vaccination. Using original data from a survey conducted in December 2020 in ten developed countries (N=13,326), we discover a COVID-19 Vaccine's gender paradox. Being more concerned about COVID-19 and more likely to believe to be infected and consequently to become seriously ill, women could be expected to be more supportive of vaccination than men. Instead, our findings show that women agree less than men to be vaccinated and to make vaccination compulsory. Our evidence suggests that their vaccine hesitance is partly due skepticism, since women are less likely to believe that vaccination is the only solution to COVID-19 and more likely to believe that COVID-19 was created by large corporations. Using a survey experiment performed in these ten countries, we show that information provision on the role of vaccination to become immune to COVID-19 is effective in reducing vaccine hesitance.

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Keywords: COVID-19 vaccination, gender differences, vaccine hesitance

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COVID-19 Vaccine's Gender Paradox*

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Abstract

Women die less than men of COVID-19, but have been more concerned about its health consequences and more compliant with the public health rules imposed during the pandemic. Since return to normal life depends on vaccination, but delays in acceptance or outright refusals of vaccination are already apparent, we investigate gender differences in attitudes and expected behaviors regarding COVID-19 vaccination. Using original data from a survey conducted in December 2020 in ten developed countries (N=13,326), we discover a COVID-19 Vaccine's gender paradox. Being more concerned about COVID-19 and more likely to believe to be infected and consequently to become seriously ill, women could be expected to be more supportive of vaccination than men. Instead, our findings show that women agree less than men to be vaccinated and to make vaccination compulsory. Our evidence suggests that their vaccine hesitance is partly due skepticism, since women are less likely to believe that vaccination is the only solution to COVID-19 and more likely to believe that COVID-19 was created by large corporations. Using a survey experiment performed in these ten countries, we show that information provision on the role of vaccination to become immune to COVID-19 is effective in reducing vaccine hesitance.

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Introduction

The anxious waiting for COVID-19 vaccines has finally come to an end (1). On December 2nd 2020, UK regulators granted an emergency use authorization for the COVID-19 vaccine tested in a large clinical trial (2). Other authorizations by the US FDA (Food & Drug Administration) and the EMA (European Medicines Authority) immediately followed. Starting in September 2020, the rate of transmission of COVID-19 had largely increased in many countries, with natural herd immunity being far from a reality (3,4). Hence, hopes to return to normal life, after almost a year of extraordinary large health, economic and psychological costs (5,6), were all placed on the development of a vaccine.

The main challenges to curb the pandemic seem now to be the production and storage of a sufficiently large supply of doses of effective vaccines and the launch of an unprecedented vaccination campaign able to reach a large share of the population across the world in the shortest possible time (7). Since demand will exceed supply for some time, priorities are being established on who should be vaccinated first. However, experience with previous vaccinations shows that countries often struggled with vaccine hesitancy, despite the availability of vaccination services (8). Early studies suggest that COVID-19 will be no exception (9,10,11,12). Delay in acceptance or outright refusal of vaccination may be due to several reasons, such as complacency towards the disease, a lack in confidence in the vaccine and convenience of the vaccination (13,14).

So far, the pandemic has been quite gendered. More men than women are dying of COVID-19 (15,16) and attitudes and behaviors related to COVID-19 differ also across gender. Women have been more concerned about the health consequences of COVID-19 and more compliant with the public health rules imposed during the pandemic (17). In this study, we investigate gender differences in attitudes and expected behaviors regarding COVID-19 vaccination. We use original data from a nationally representative survey conducted in ten developed countries to analyze gender differences in the belief that vaccination is the only permanent solution to the pandemic, as well as in the agreement with being vaccinated and with compulsory vaccination.

Our survey data (18) cover ten countries, Australia (N = 1,006), Austria (N = 994), France (N = 2,121), Germany (N = 2,091), Italy (N = 1,025), New Zealand (N = 1,011), Poland (N = 1,023), Sweden (N = 1,016), the United Kingdom (N = 1,031), and the United States (N = 2,008), for a total of 13,326 respondents. All these countries have high income per capita and advanced health systems, allowing

us to pool their data in a common analysis. However, the pandemic affected them very differently, which increases the external validity of our findings. By the end of 2020, Italy, the United Kingdom and the United States were among the countries with the higher mortality per 100 thousands people (19), whereas New Zealand and Australia were among the countries with the lower rates (SI Appendix, Table S1). The survey was administered between December 2nd and December 10th 2020, when most countries were experiencing the second wave of the pandemic and new lockdown measures – particularly targeted for the Holidays season, were imposed. Meanwhile, vaccination plans were underway in most countries.

The survey collects information on individuals' attitudes and behavior towards COVID-19 per se and towards COVID-19 vaccination. More specifically, respondents were asked how serious they believe the health consequences of COVID-19 to be in their country. They were asked to report their current level of compliance with several COVID-19 related health and social distancing rules, such as washing hands, coughing into one's elbow, stopping hugging or greeting, keeping physical distance from others, staying at home, avoiding crowded places, stopping meeting friends, and wearing face masks. Additional questions concerned COVID-19 vaccination. Respondents were asked whether they agree that a vaccine is the only permanent solution to the pandemic and whether they would agree to be vaccinated. Moreover, they were asked whether vaccination should be compulsory. Finally, the survey collected a wide range of sociodemographic and attitudinal factors.

Results

A previous study using data from the initial two waves of this survey, run in March and April 2020, showed large gender differences in attitudes and behavior towards COVID-19 (17). These findings are confirmed using December 2020 data on a larger sample of countries.

We observe large gender differences in the individual perceptions regarding the seriousness of COVID-19 as a health problem in the respondent's country. Data from all ten countries (N=13,321) show that 31.7% of the female respondents considered COVID-19 to be a very serious health problem, against 27.3% of the men (M = 0.317 vs. 0.273, Mdiff = 0.044, 95% CI [0.028; 0.059]). Fig. S1 in the SI Appendix displays the results by country, separately for men and women. The large

differences across countries reflect differences in the actual magnitude of the pandemic (Table S1 in the SI Appendix).

Besides being more concerned about the health consequences of COVID-19, women are also more compliant with the restraining health policy measures. Once again, evidence from previous studies (17) is confirmed using our December 2020 survey data. In our survey, individuals were asked to evaluate how strictly they were following nine recommended rules on a 0–10 scale (from "not at all" to "completely"): washing hands more often, coughing into one's elbow, ending the greeting of people by shaking hands or hugging, avoiding crowed places, keeping physical distance from others, staying at home, stopping visits to friends, wearing face masks in public places and leaving home less than once a day. We construct an overall index of respondents' compliance with public health rules by averaging out their answers to all questions after normalizing each of them on a 0–1 range. In the SI Appendix, we report the exact wording of all questions.

We observe important gender differences in the compliance with these public health rules. Pooling data from all ten countries (N=13,326), compliance to the rules was markedly larger among women than among men (M = 0.759 vs. 0. 710, Mdiff = 0.049, 95% CI [0.041; 0.056]). Figure 1 displays our compliance index separately for men and women by country using December 2020 data. Gender differences are apparent (and statistically significant) in almost all countries. Interestingly, when compared to previous studies (17), the compliance index is rather stable over time, from 0.747 in April 2020 to 0.735 in December 2020.

Gender Differences in Vaccination

Throughout the pandemic, women have consistently shown greater concern for the health consequences of COVID-19 and a more careful behavior in adopting the suggested public health measures. Do these protective attitudes and behaviors induce women to be in stronger agreement with COVID-19 vaccination? Our survey allows us to learn about individuals' beliefs, attitudes and intentions towards COVID-19 vaccination. Respondents were asked how much they believe the following statement to be true, on a 0-10 scale (from completely unlikely to very likely): "The only permanent solution to this pandemic is developing a vaccine". For comparability with previous measures, we normalize the index between 0 and 1. Substantial gender differences emerge in

individual attitudes towards the vaccine. Pooling data from all ten countries (N=13,019), we find that women are much less likely to believe the vaccine to represent the only permanent solution to the pandemic (M = 0.690 vs. 0.7271, Mdiff =-0.036, 95% CI [-0.047; -0.026]). Fig. S2 in the SI Appendix displays these individual attitudes by country, separately for men and women.

To investigate possible gender differences in vaccination behavior, we use a question in our survey, in which respondents were asked whether they would agree to be vaccinated, if a vaccine against COVID19 was available in the next few months, on a 0-10 scale (from not at all likely to extremely likely). In each country, respondents were randomly assigned to five different groups. All respondents were asked whether they would agree to be vaccinated. In four groups, the question was preceded by the following statement "The only way to become immune to COVID-19 in the long run is by vaccination". For each of these four groups, the initial statement was followed by a further statement on what an individual would achieve by being vaccinated – namely, not getting infected, not passing the virus to others, protecting the health of people in the country or allowing the return to normal economic activities. In this section, we pool together responses from all groups on whether individuals agree to be vaccinated. We will analyze the informational effects of the different statements in the last section. For comparability with previous measures, we also normalize this vaccination agreement index between 0 and 1. Our results show a large and significant gender difference in the willingness to be vaccinated. Pooling data from all ten countries (N=11,918), we show that women are much less likely to agree to be vaccinated (M = 0.581 vs. 0.664, Mdiff = -0.083, 95% CI [-0.095; -0.071]). Figure 2 displays the vaccination agreement index by country, separately for men and women. Gender differences are large and significant in every country.

With a vaccination agreement index ranging from only 0.470 in France to 0.761 in the UK, policy-makers may consider to impose compulsory vaccination. We use a question in our survey to evaluate the support for such a policy. Respondents were asked if they agree that being vaccinated should be compulsory, since public health reasons are more important than respect for individual freedom of choice, or, on the opposite, that being vaccinated should not be compulsory, as respect for individual freedom of choice is more important. Pooling data from all ten countries (N=12,126), we show that women are much less likely to agree with compulsory vaccination (M = 0.377 vs. 0.443, Mdiff = -0.066, 95% CI [-0.083; -0.048]). Fig. S3 in the SI Appendix shows these results by country and gender.

COVID-19 Vaccine's Gender Paradox: Explanatory Factors

Our results indicate the existence of a COVID-19 vaccine's gender paradox: women are more concerned about COVID-19, more compliant with the related public health rules, but less willing to get the vaccine. This paradox is visualized in Figure 3, which reports the distributions of the compliance index (Panel A) and of the vaccination agreement index (Panel B).

What are the determinants of these consistent gender differences in beliefs, attitudes, and behavioral response to COVID-19 vaccination? Vaccine hesitancy is a complex matter. The WHO–SAGE vaccine hesitancy working group suggested that complacency towards the disease, a lack in confidence in the vaccine, and vaccination convenience are important factors that may hinder vaccination (13,14). Complacency refers to the risks of vaccine preventable diseases being perceived as low, so that vaccination is not deemed necessary. Convenience relates to physical availability, affordability and appeal of the immunization service. Confidence requires trust in the effectiveness and safety of the vaccine (20), in the health services delivering it and in the motivations of the policy-makers launching the vaccination campaign (21).

Gender differences in sociodemographic characteristics or employment status may create different perceptions about these components and induce different behaviors. For instance, women may be more concerned about COVID-19, more compliant with the rules and less complacent towards COVID-19 if they are older or if they perform a type of economic activity for which the risk of contagion is higher (22,23). To account for these confounding factors, we include a set of control variables in our regression analysis. Our outcome variables of interest are: (i) the individuals' beliefs that the vaccine represents a permanent solution to the pandemic; (ii) their agreement to be vaccinated; (iii) their agreement to compulsory vaccination. We regress each of these three variables on the female dummy and on a set of control variables: dummy variables for age groups, level of education, type of occupation (blue collar, service, white collar, no occupation) and geographical locations (specifically, country-region fixed effects).

Figure 4 plots estimates of gender differences in our pooled sample for the three main outcomes of interest, with no individual controls (only country-region fixed effects) and after controlling for the sociodemographic variables too. We report the exact point estimates for the pooled sample in Table

S2 in the SI Appendix. The picture that emerges from this empirical evidence is clear. Even after controlling for a large number of sociodemographic characteristics and employment status, women remain much less likely than men to believe that vaccination is the solution to COVID-19. They agree less with being vaccinated and with making vaccination mandatory. Tables S3 to S5 in the SI Appendix report the results of our empirical analysis on the three outcome variables separately for each country.

We then move to investigate whether these differences in perceptions and behaviors on COVID-19 vaccination can be attributed to gender differences in attitudinal factors. We focus on six distinct elements, which are directly associated with two determinants of vaccine hesitation: complacency and lack in confidence. Instead, we do not analyze convenience, since respondents to our survey were not presented (nor framed) with convenience issues, such as the cost or location of the vaccination. Four factors affect the individual complacency, that is, the assessment of the health risk associated to COVID-19 (13,14). They are the perceived probability of becoming infected, the perceived probability of becoming seriously ill if infected, the assessment of the seriousness of COVID-19 as a health problem and the level of risk aversion. Individuals with high complacency toward COVID-19 may feel that vaccination is not necessary. The two other factors relate to the level of confidence that individuals need to have in order to accept being vaccinated. They are the level of trust towards scientists, who are ultimately responsible for effectiveness and safety of the vaccines (20), and the political ideology, which measures support for government intervention and affects the degree of alignment with the existing government. The latter element may capture the confidence in the motivations of the policy-makers (21).

We exploit six questions posed in our survey to measure these six factors. Respondents were asked how likely they think they are to be infected if they return to their normal life (on a 0–10 scale), how likely they think they are to be seriously ill if infected by COVID19 (on a 0–10 scale), how serious they believe the health consequences of COVID-19 to be in their country (on a 1–4 scale, from “not very serious” to “very serious”), how difficult it is for them to accept health risks (on a 0–10 scale), how much they trust scientists (on a 1–4 scale, from “not at all” to “completely”), and what their political ideology is (on a 0–10 scale, from far left to right). We convert the responses to seriousness of health consequences into a dummy variable equal to 1 for the responses “very serious” and 0 otherwise. We convert the responses to the trust in scientists to a dummy variable equal to 1 for

the responses “somewhat” and “completely” and 0 otherwise. We summarize the political ideology into three dummies for liberal (0–3), centrist (4–6), and conservative (7–10).

To confirm the existence of gender differences in these six factors, we regress each of these indicators on the female dummy, on the country-region fixed effects and on the socio-demographic controls. The results are reported in Table S6 in the SI Appendix. Women are more concerned with the health consequences of COVID-19, more likely to believe to be infected and to become seriously ill if infected. Moreover, they are more risk averse than men. These findings are consistent with the existing literature (17,24) and suggest that women are certainly less complacent than men about COVID-19 health risks. Women are also more left-leaning than men – in accordance with the political science literature (25,26) – while no gender differences emerge in the trust towards scientists.

The results of augmented regressions controlling for these six additional factors are shown in Figure 4 and in Table S2 (columns 3, 6 and 9) in the SI Appendix. These attitudinal factors are important to explain the variation in beliefs, attitudes and expected behavior towards COVID-19 vaccination. In fact, the R2 increases substantially, if compared with the regressions that do not include these six factors (see respectively columns 2, 5 and 8 in Table S2). However, the point estimates of the female dummy are not affected by the introduction of these attitudinal elements. If anything, the magnitude of the gender effect seems to increase, due to the fact that women’s individual characteristics, such as their stronger concern about the health consequences of COVID-19, should make them more favorable than men to vaccination.

Skepticism in COVID-19 vaccine

We showed that women are less likely to consider vaccination as the only permanent solution to the pandemic. This may be due to lack of confidence in the effectiveness of the vaccination or to the belief in the existence of other solutions, such as strict compliance with public health rules to avoid contagion or the development of effective medical treatment for the infected. Answers to this question thus measure individuals’ skepticism in vaccination, which may come from lack of confidence in its effectiveness or individuals’ self-reliance. Respondents to our survey were also asked how much they believe, on a 0-10 scale (from completely unlikely to very likely), the following statement to be true: “The virus has been created by large corporations because some of them can

directly profit from it." With this question, we can capture the extent to which individuals mistrust the motivation of the policy-makers about the vaccination. This may lead them to be skeptical about vaccination. Finally, we consider the individuals' role as parents. In fact, a possible motivation for vaccine hesitance may come from the fact that parents feel more responsible about vaccination, as their decision is relevant for their children too. The effect of the parental role on vaccine hesitance seems to be stronger among women (27). In our survey, we thus construct a dummy variable taking value 1 for individuals, who have children of schooling age, and 0 otherwise.

To measure the relevance of the skepticism in the COVID-19 vaccines to explain the gender difference in vaccination intentions, we thus augment the regression of the probability of being vaccinated, which previously included the female dummy, the country-region fixed effects, and sociodemographic and attitudinal factors (see results in Figure 4 and in Table S2, column 6, in the SI Appendix), with the following three variables: vaccination as the only solution to the pandemic, virus created by large corporations and school age children. The results of these augmented regressions are reported in Figure 4 and in Table S7 in the SI Appendix. These variables are important to explaining the agreement to be vaccinated and to compulsory vaccination, as suggested by the large increase in the R2, if compared with the regressions that did not include them (see respectively columns 6 and 9 in Table S2). In particular, individuals who believe vaccination to be the only permanent solution to COVID-19 are much more willing to be vaccinated and to agree with compulsory vaccination, whereas those who believe COVID-19 to be created by large corporations are less likely to agree with vaccination. Figure 4 shows that the inclusion of these variables reduces the point estimate of the female dummy, which however remains significant and large. This is because women are less likely to believe that vaccination is the only permanent solution to COVID-19 and more likely to believe that COVID-19 was created by large corporations. Hence, including these variables in the regressions partially explains why they agree less than men to be vaccinated.

Policy Implication

Despite the successful development of COVID-19 vaccines, vaccination hesitancy may delay the eradication of the COVID-19 pandemic. Large vaccine hesitancy is present in France, Poland and Austria, where the percentage of individuals who answered from 7 to 10 to the question on the agreement to be vaccinated was respectively 28.4%, 28.6% and 33.1%. But vaccine hesitance is

widespread. Around the critical threshold of 60% are only Australia (60%) and the UK (63%). Effective public persuasion campaigns in favor of vaccination are strongly needed (28), especially to convince women.

To assess the effectiveness of different information campaigns, we use a survey experiment embedded in our survey, in which respondents in each country were randomly assigned to five different groups. Respondents in all groups were asked "If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?" with answers on a 0-10 scale (from not at all likely to extremely likely). Individuals in the control group were asked this question only. For the respondents in all other treatment groups, the question came after the following statement "The only way to become immune to COVID-19 in the long run is by vaccination". Before the common question, individuals in the each of the four treatment groups were shown an additional statement: (i) In this case, if you were vaccinated, you could avoid getting infected with the virus; (ii) In this case, if you were vaccinated, you might be able to avoid passing the virus on to others; (iii) In this case, if a person was vaccinated, they could avoid getting infected with the virus. This would protect the health of people in your country; (iv) In this case, if a person was vaccinated, they could avoid getting infected with the virus. It would allow a return to normal economic activity and reduce unemployment.

Hence, with respect to respondents in the control group, individuals in every treatment group were provided (the same) information about the relevance of vaccination to be immune to COVID-19. Moreover, they were primed with different statements on the positive consequences of being vaccinated respectively for not getting infected (group i), not infecting others (group ii), protecting health in the country (group iii) and protecting the economy (group iv). Notice that individuals in the first group were primed with information on the role of vaccination for themselves, whereas individuals in other treatment groups were primed with information on the role of vaccination for the others. The former type of treatments thus focuses on the idea that vaccination is not a selfish activity, but rather part of a social contract (29). These may be important nuances in a communication strategy on vaccination, since women tend to reciprocate more in experimental studies (24).

Table 1 shows the results of our empirical analysis, in which we regress our main outcome variable – the agreement to be vaccinated – on the female dummy, on socio-demographic characteristics,

on country-region fixed effects and on the treatments. The informational treatment has a positive and statistically significant effect on the agreement to vaccination (see column 1, which compares all treatment groups to the control group). Receiving the information that "The only way to become immune to COVID-19 in the long run is by vaccination" increases the agreement of 0.031 point over a sample mean of 0.627. This informational effect seems stronger for men (0.042) than for women (0.024), as shown in Table 1 (columns 2 and 3), although this difference is not statistically significant. When considering the effect of the different statements on the positive consequences of vaccination, results in Table 1 (column 4) suggests that they are all equally effective, regardless of whether the priming is selfish (not getting infected) or more altruistic . Again, they seem to be more effective for men than for women (see columns 5 and 6), although the difference is not statistically significant.

Hence, our findings show that public persuasion campaigns informing people about the unique role of vaccines to immunize against COVID-19 are effective in reducing vaccine hesitancy. However, these campaigns do not reduce the gender gap. If anything, they seem to be more effective on men. Women-targeted persuasion campaigns may be needed.

Materials and Methods

To measure the existence of a gender gap in our outcomes of interest (belief that vaccination is a solution to COVID-19; agreement to be vaccinated; agreement to compulsory vaccination), we use OLS estimates of the following linear equation:

$$y_i = \alpha + \beta F_i + \gamma X_i + \delta Z_i + \rho C_i + \varepsilon_i$$

where yi is one of the outcomes of interest, Fi is a dummy for female, Xi is the vector of control variables that capture the individual sociodemographic factors (age groups, education, occupation status, country-region fixed effects), Zi is the vector of attitudinal characteristics (risk aversion, trust in science, probability of being infected, probability of being seriously ill if infected, political ideology), Ci is the vector of variables capturing confidence in COVID-19 vaccines (belief that vaccination is a solution to COVID-19, COVID-19 multinationals' fault, parents of children in schooling age) and ε is a random error. We use survey weights that ensure the survey to be representative of the population.

These specifications (with or without the controls, Xi, Zi and Ci) are used in Tables S1 to S7. Table S2 provides the estimates of the above linear equation on the pooled sample for the three main outcomes (belief that vaccination is a solution to COVID-19; agreement to be vaccinated; agreement to compulsory vaccination). For each outcome, the first column presents the estimate of the equation only with the female dummy and country-region fixed effects, in the second column we add the sociodemographic controls and in the third column also the attitudinal controls. Tables S3 to S5 provide, one for each of the three main outcomes, the estimates of the above linear equation, with the female dummy, region fixed effects and sociodemographic controls, separately for the pooled sample and for each country. Table S6 provides the estimates of the above linear equation, in which the outcome variables are the different attitudinal factors that are regressed on the female dummy, the country-region fixed effects and the sociodemographic controls. Table S7 provides the estimates of the above linear equation, in which the outcome variables are the agreement to be vaccinated and the agreement to compulsory vaccination, which are regressed on the female dummy, on the country-region fixed effects, on the sociodemographic controls, on the attitudinal controls and also on the variables capturing confidence in COVID-19 vaccines.

To study the informational effect regarding COVID-19 vaccination, we run the following linear equation:

$$y_i = \alpha + \beta F_i + \mu E_i + \varepsilon_i$$

where yi is the variable agreement to be vaccinated, Ei is the vector that captures the four different informational treatments, Fi is a dummy for female, Xi is the vector of control variables that capture the individual sociodemographic factors (age groups, education, occupation status, country-region fixed effects), and ε the error term. Results of this specification are reported in Table 1.

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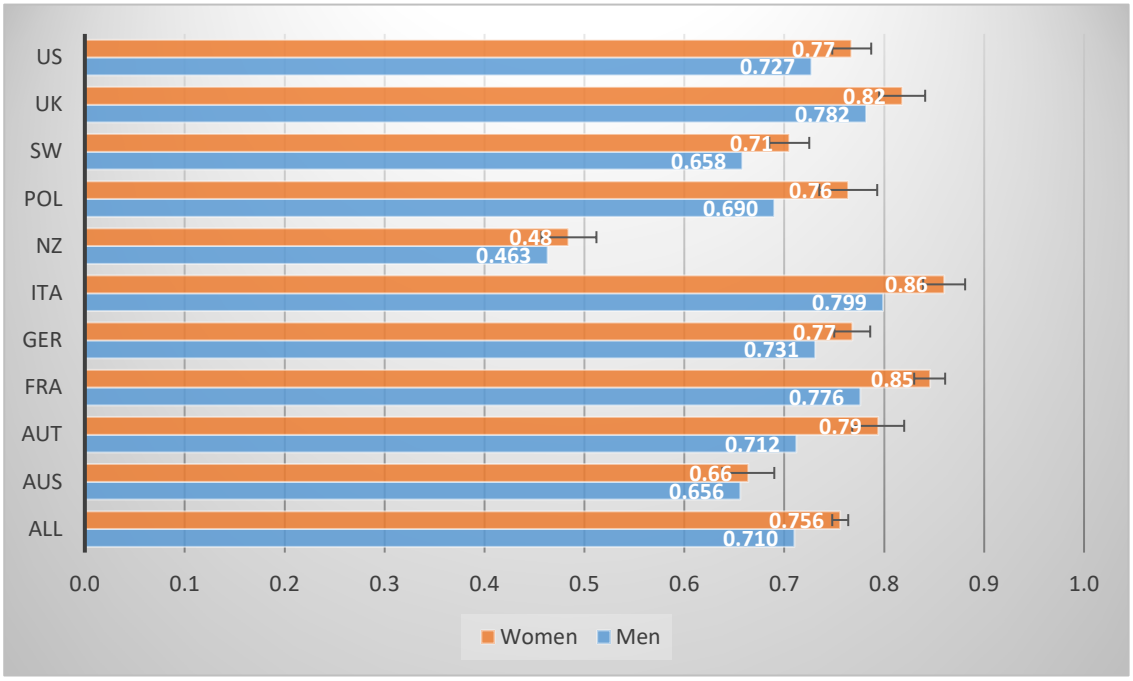
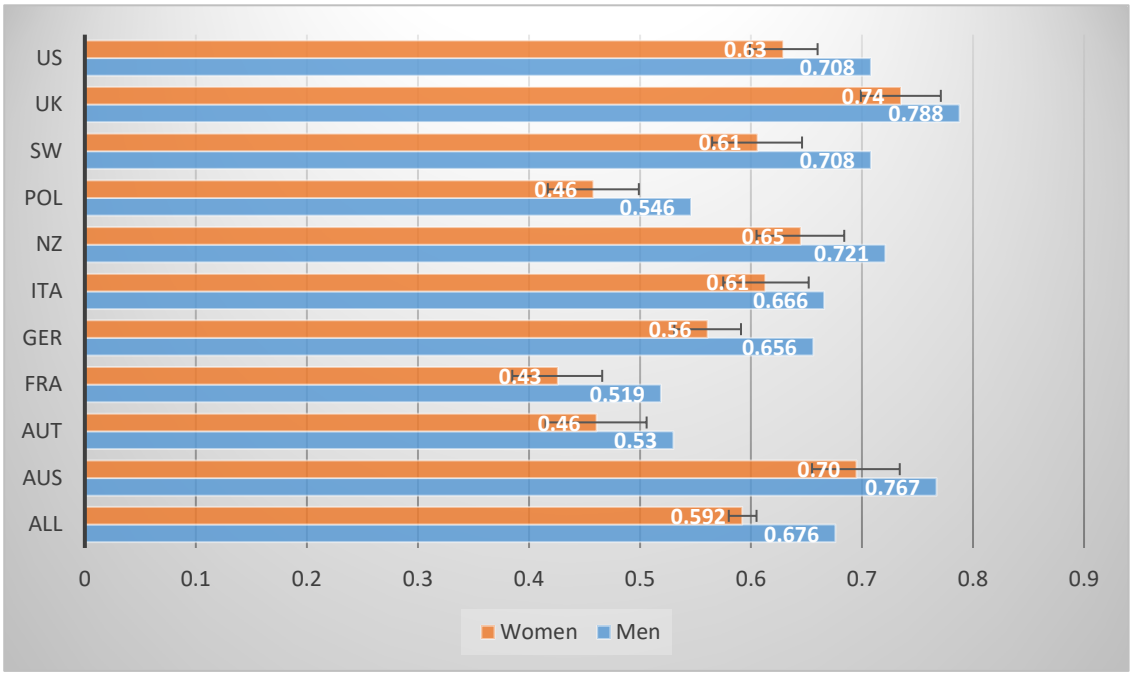
Figures and Tables

Figure 1.



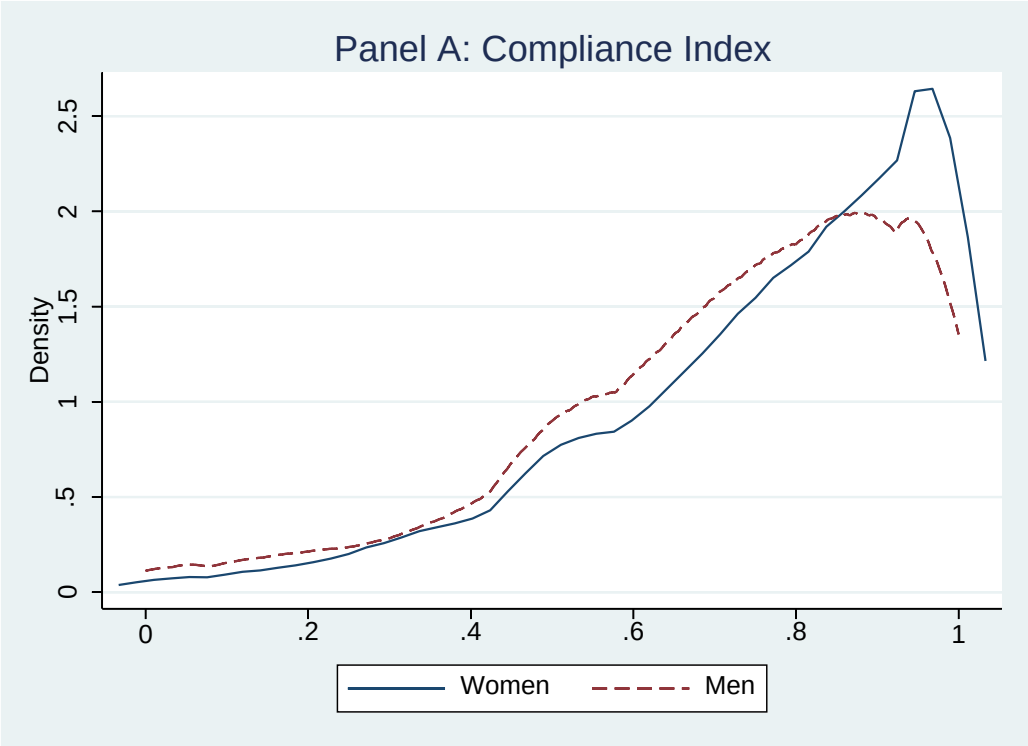
Note: Compliance Index for men and women, in the pooled sample and by country. 95% confidence intervals from regressions of the Compliance Index on female are reported.

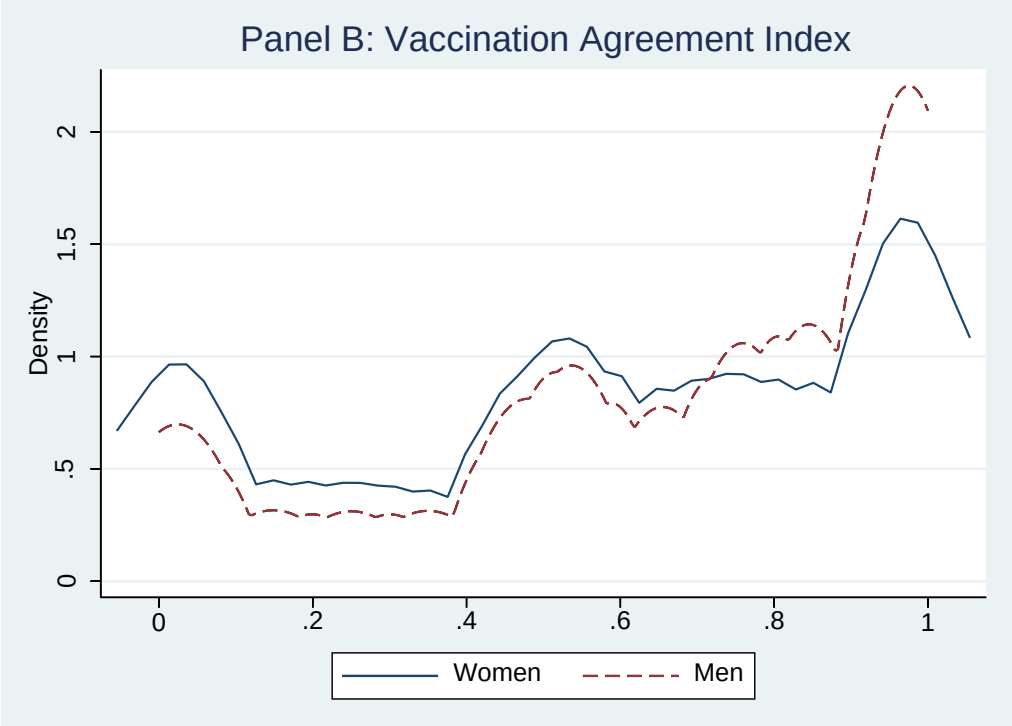
Figure 2.



Note: Vaccination Agreement Index for men and women, in the pooled sample and by country. 95% confidence intervals from regressions of the Vaccination Agreement Index on female are reported.

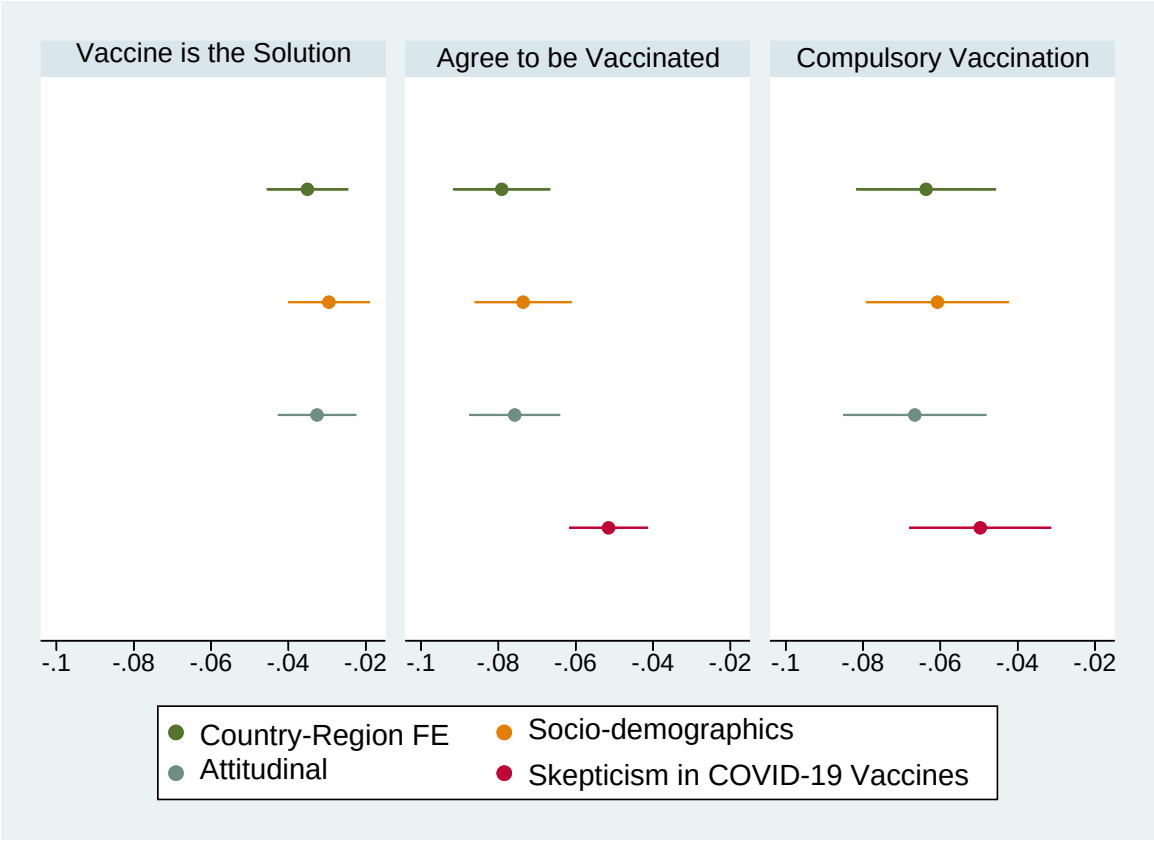
Figure 3.





Note: Distributions for men and women in all countries of the Compliance Index (Panel A) and of the Vaccination Agreement Index (Panel B).

Figure 4.



Note: Point estimates of the female coefficient, and 95% confidence intervals, from regressions using pooled data of respectively the variables “Vaccine is the Solution”, “Agree to be Vaccinated” and “Agree to Compulsory Vaccination” on the female coefficient and on Country-Region FE and then adding Sociodemographic factors, Attitudinal factors and Confidence in COVID-19 vaccines

Table 1.

VARIABLES	(1) All	(2) Women	(3) Men	(4) All	(5) Women	(6) Men
Women	-0.073***			-0.073***		
	[0.006]			[0.006]		
Vacc: All Info	0.031***	0.024**	0.042***			
	[0.008]	[0.011]	[0.012]			
Vacc reduces infection				0.028***	0.016	0.042***
				[0.010]	[0.014]	[0.015]
Vacc reduces contagion				0.031***	0.025*	0.041***
				[0.010]	[0.014]	[0.015]
Vacc helps your country				0.030***	0.022	0.040***
				[0.010]	[0.014]	[0.015]
Vacc helps the economy				0.037***	0.033**	0.043***
				[0.010]	[0.014]	[0.015]
Constant	0.704***	0.657***	0.674***	0.704***	0.657***	0.674***
	[0.021]	[0.028]	[0.029]	[0.021]	[0.028]	[0.029]
Country -Region FE	yes	yes	yes	yes	yes	yes
Socio-demo controls	yes	yes	yes	yes	yes	yes
Observations	11,838	6,118	5,720	11,838	6,118	5,720
R-squared	0.133	0.127	0.131	0.133	0.127	0.131

Notes: Robust standard errors are in parentheses (***, **, * indicate significance at 1, 5, and 10 percent, respectively). We pool survey data from the ten countries in the sample. We control for country-region fixed effects and sociodemographic characteristics in all regressions. The sociodemographic controls include age groups (18-34, 35-49, 50-59, 60+), education (no high school, high school, college), occupation status (blue collar, service, white collar, no occupation).

Supplementary Information Text

Survey Data

We use data from the December 2020 wave of a survey launched contemporaneously in nine countries: Australia, France, Germany, Italy, New Zealand, Poland, Sweden, UK and USA by professional survey companies on representative samples of each country's citizens. This survey is part of the REPEAT project (REpresentations, PErceptions and ATtitudes on the COVID-19), which collects information on perceptions and individual behavior related to COVID-19 and to the public health measures discussed (or adopted) to limit the diffusion of the virus. Table S1 reports, for each country, the days in which the wave was fielded, the number of observations and number of deaths per 100 thousands people on December 30th 2020.

The outcome variable used in Figure S1 is obtained from the answers to the question "Would you say that the consequences of the coronavirus epidemic for health in your country are today" on a 1-5 scale from "very serious" to "not serious at all". We created a dummy variable for "very serious".

The outcome variable used in Figures 1 and 3 is an index of compliance with some public health measures suggested or applied in the different countries. For each country, respondents were asked nine questions on their level of compliance (on a 0-10 scale, from "not at all" to "completely") with the following items: (i) washing your hands more often and/or for a longer amount of time; (ii) coughing or sneezing into your elbow or a tissue; (iii) have stopped greeting others by shaking hands, hugging or kissing; (iv) keep a distance of three six feet between yourself and other people outside your home; (v) have reduced your trips outside; (vi) avoid busy places (public transportation, restaurants, sports…); (vii) have stopped seeing friends; (viii) wearing a mask or protection over your nose and mouth when you are outside your home; (ix) leave your home less than once a day on average.. We created a compliance index by averaging these answers for each respondent and normalizing the average on the 0-1 scale.

The outcome variable used in Figure S2 and Tables S2-S3 comes from answers to the question of how much respondents believe, on a 0-10 scale (from completely unlikely to very likely), the following statement to be true: "The only permanent solution to this pandemic is developing a vaccine". We normalize the index between 0 and 1.

The outcome variable used in Figures 2, 3 and 4 and Tables 1, S2, S4 and S7 is a Vaccination Agreement index constructed using answers to the question "If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?" on a 0-10 scale (from not at all likely to very likely). We normalize the index between 0 and 1. In every country, respondents to this question were divided in five groups that received the following formulation of the question:

Group 1: The only way to become immune to covid-19 in the long run is by vaccination. In this case, if you were vaccinated, you could avoid getting infected with the virus. If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?

Group 2: The only way to become immune to covid-19 in the long run is by vaccination. In this case, if you were vaccinated, you might be able to avoid passing the virus on to others. If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?

Group 3: The only way to become immune to covid-19 in the long run is by vaccination. In this case, if a person was vaccinated, they could avoid getting infected with the virus. This would protect the health of people in (your country). If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?

Group 4: The only way to become immune to covid-19 in the long run is by vaccination. In this case, if a person was vaccinated, they could avoid getting infected with the virus. It would allow a return to normal economic activity in Italy and reduce unemployment. If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?

Group 5: If a vaccine against COVID19 was available in the next few months, would you agree to be vaccinated?

The outcome variable used in Figures 4 and S3 and Tables S2, S5 and S7 is obtained from the following question: "Which of the following two statements do you agree with? (1) Being vaccinated should not be compulsory: respect for individual freedom of choice is more important than public health reasons. (2) Being vaccinated should be compulsory: public health reasons are more important than respect for individual freedom of choice. We create the dummy variable Agreement to Compulsory Vaccination, which takes value 1 for the latter answer and value 0 for the former.

The survey also collected socio-economic and demographic information, such as gender, age, education, geographical location and occupation status. Besides gender, which represents our main variable of interest, we use this information to construct the following variables, which are used as controls in our regressions: age groups (18-34, 35-49, 50-59, 60+), education (no high school, high school, college), occupation status (blue collar, service, white collar, no occupation), macro-regions (by country) and countries.

We use additional information on attitudinal factors and on vaccination related issues. More specifically, we use answers to the question on how easy or difficult is it for you to accept taking risks in health matters (on a 0-10 scale, with 0 being "very difficult" to 10 "very easy") to construct a measure of risk aversion. We use the question on whether individuals trust scientist (Yes or No) to create a dummy variable for trust in scientists. We use a question "what is the likelihood that you will be infected by COVID19 if you resume your usual way of life (work, leisure, etc.)?" (on 0-10 scale from "very unlikely" to "very likely") to construct a measure of the subjective probability of being infected. We use a question "In your opinion, what is the likelihood that you would be seriously ill if you were infected by COVID19?" (on 0-10 scale from "very unlikely" to "very likely") to construct a measure of the subjective probability of being seriously ill, if infected. We use a question on the individual political ideology (on a scale from 0 to 10, where 0 is left and 10 is right) to construct three dummy variables for liberal (0-3), centrist (4-6) and conservative (7-10). We use answers to the question "In your opinion, how likely is it that the following statement is true: The virus has been created by large corporations because some of them can directly profit from it" on a 0-10 scale (from not at all likely to very likely), to create a variable on multinationals' fault for COVID-19. Finally, we create a variable for parents having children in schooling age, by using answers to the question "If you have a child in schooling age (attending either primary or secondary education), what schooling level is he/she attending? If you have multiple children in schooling age please refer to the youngest one?" with possible answers being (1) I do not have a child in schooling age; (2) Primary school; (3) Lower Secondary; (4) Upper Secondary. We construct a dummy variable schooling age that takes value 1 for anwers (2) to (4) and value 0 otherwise.

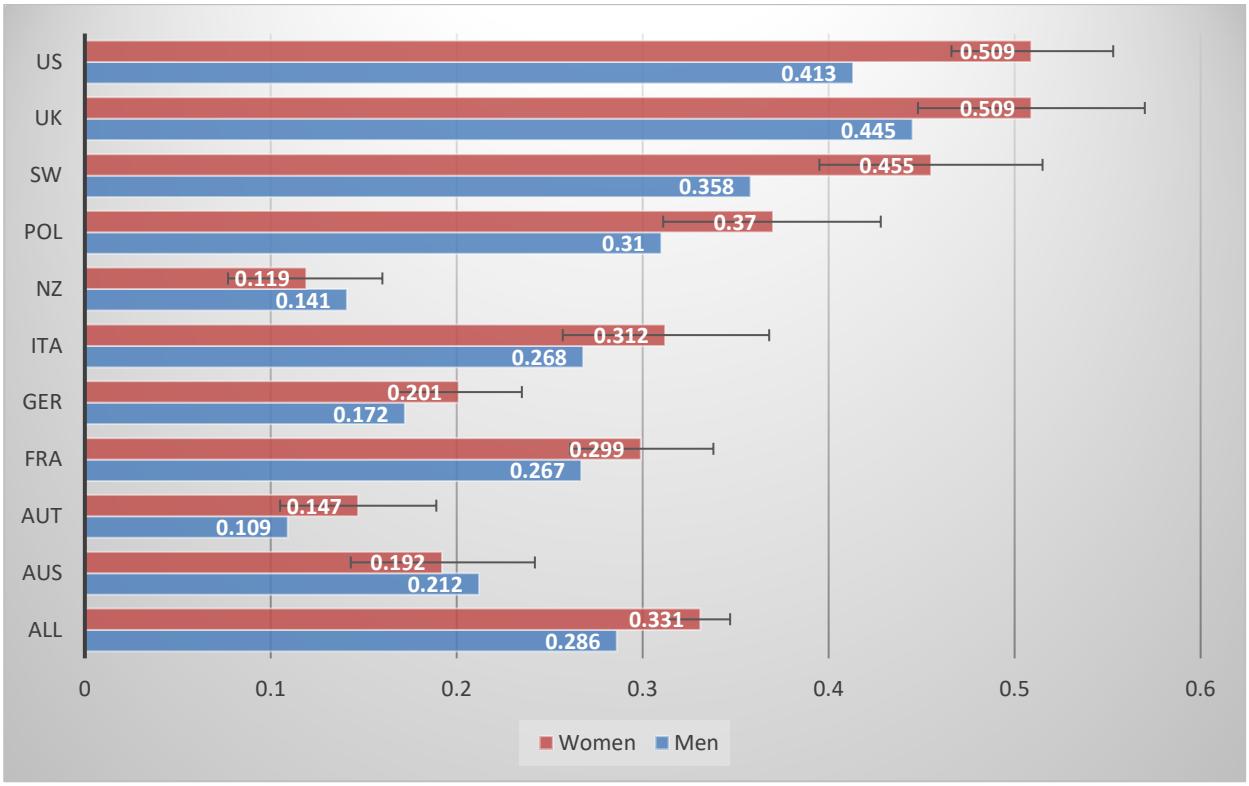


Fig. S1. COVID19 is a very serious health concern

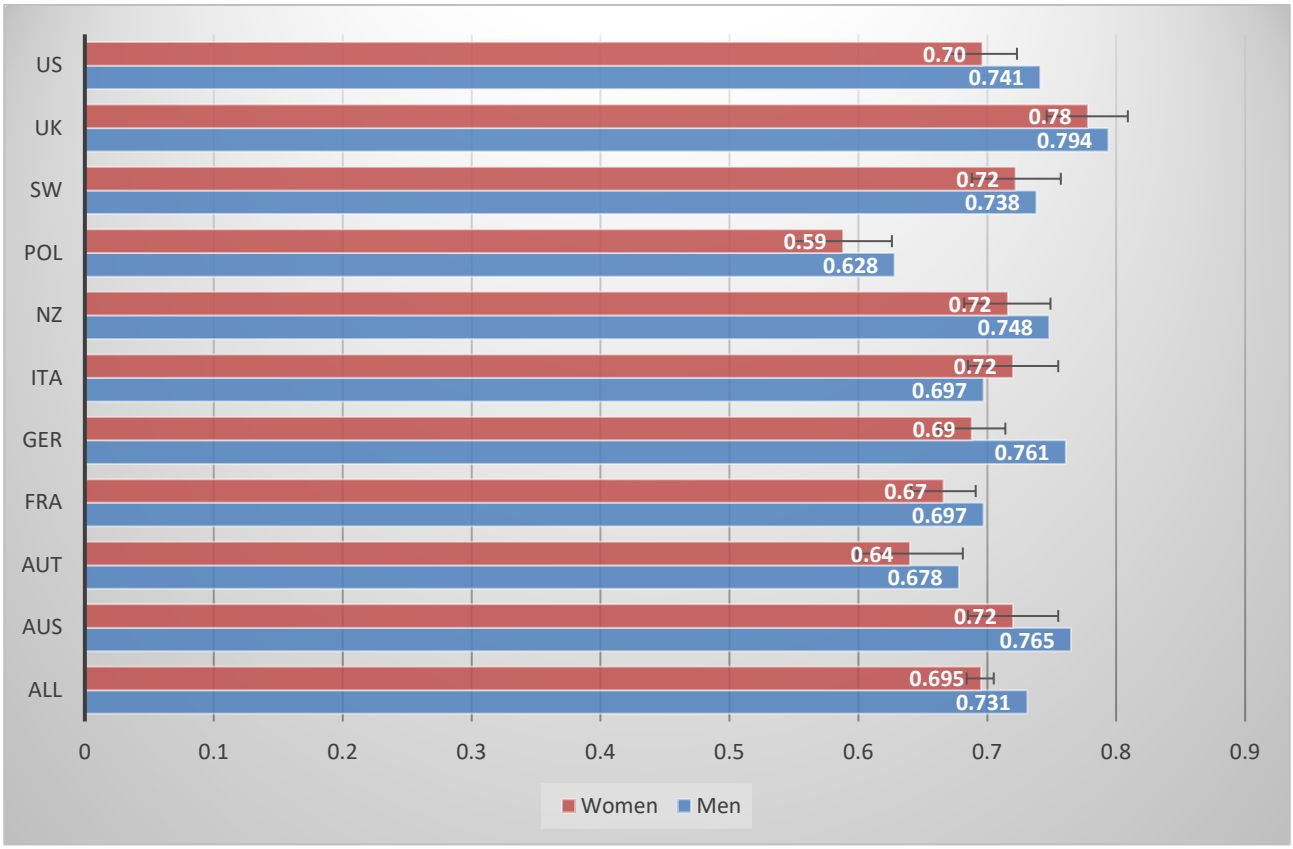


Fig. S2. Vaccination is the only Permanent Solution to COVID-19

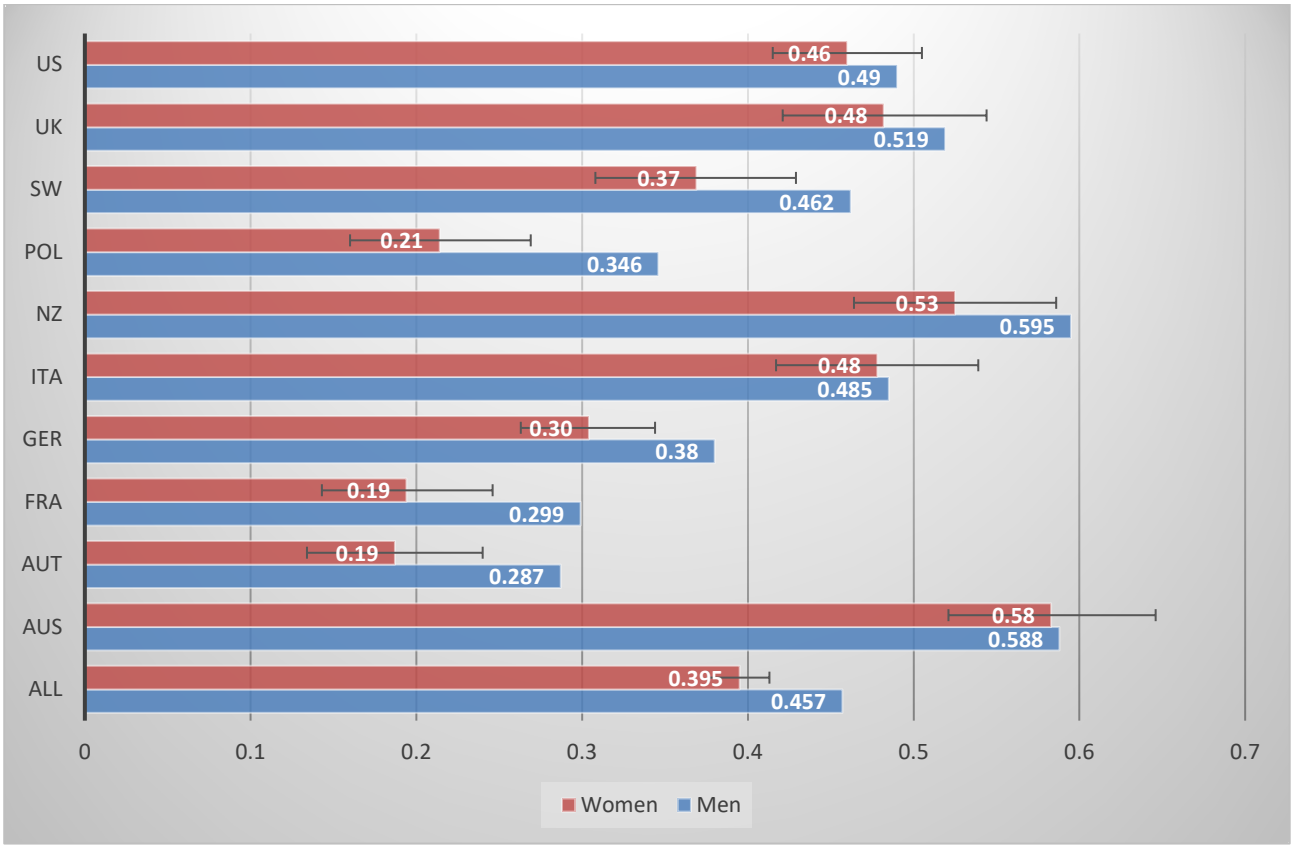


Fig. S3. Agreement with Compulsory Vaccination

	Dates of the Survey	Observations	Deaths per 100,000 population
Australia	4-10 December 2020	1,006	3.6
Austria	5-9 December 2020	994	68.5
France	2-5 December 2020	1,058	93.6
Germany	5-9 December 2020	2,091	36.1
Italy	5-7 December 2020	1,025	118.5
New Zealand	5-9 December 2020	1,011	0.5
Poland	5-8 December 2020	1,023	71.3
Sweden	5-9 December 2020	1,016	81.3
UK	5-8 December 2020	1,031	106.5
USA	4-11 December 2020	2,008	101.5

Note: Deaths per 100,000 population on December 28th 2020 from https://coronavirus.jhu.edu/data/mortality

Table S1. Survey Dates and COVID-19 Mortality

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Vaccination is the only Solution			Agree to be Vaccinated			Agree to Compulsory Vaccination		
Women	-0.035***	-0.030***	-0.033***	-0.079***	-0.074***	-0.076***	-0.064***	-0.061***	-0.067***
	[0.005]	[0.005]	[0.005]	[0.006]	[0.006]	[0.006]	[0.009]	[0.009]	[0.009]
No High School		-0.056***	-0.026**		-0.083***	-0.048***		-0.050***	-0.024
		[0.011]	[0.011]		[0.013]	[0.012]		[0.018]	[0.018]
High School		-0.026***	-0.006		-0.057***	-0.033***		-0.028***	-0.010
		[0.006]	[0.006]		[0.007]	[0.007]		[0.011]	[0.011]
Service Workers		-0.003	-0.002		-0.024**	-0.022**		-0.027*	-0.025*
		[0.008]	[0.007]		[0.009]	[0.009]		[0.015]	[0.014]
Blue Collars		-0.025***	-0.014		-0.067***	-0.047***		-0.033*	-0.021
		[0.010]	[0.009]		[0.012]	[0.011]		[0.017]	[0.017]
Inactive		0.001	0.004		-0.019*	-0.011		-0.005	-0.002
		[0.009]	[0.008]		[0.010]	[0.009]		[0.016]	[0.015]
35-49 yo		0.028***	0.016**		0.002	-0.009		-0.028**	-0.040***
		[0.008]	[0.007]		[0.009]	[0.008]		[0.013]	[0.013]
50-59 yo		0.077***	0.053***		0.062***	0.037***		0.041***	0.019
		[0.009]	[0.008]		[0.010]	[0.009]		[0.014]	[0.014]
60+ yo		0.133***	0.088***		0.134***	0.085***		0.069***	0.024*
		[0.008]	[0.008]		[0.009]	[0.009]		[0.013]	[0.014]
Risk Aversion			0.002**			-0.003**			-0.004**
			[0.001]			[0.001]			[0.002]
COVID serious health issue			0.060***			0.038***			0.074***
			[0.006]			[0.007]			[0.011]
Probability of getting infected			0.010***			0.014***			0.010***
			[0.001]			[0.001]			[0.002]
Probability of serious ill if infected			0.016***			0.021***			0.018***
			[0.001]			[0.001]			[0.002]
Trust in Scientists			0.184***			0.208***			0.149***
			[0.008]			[0.009]			[0.012]
Liberal ideology			0.010			0.049***			0.066***
			[0.007]			[0.009]			[0.014]
Centrist ideology			-0.012*			0.011			0.027**
			[0.006]			[0.007]			[0.012]
Unknown ideology			-0.030***			-0.031**			0.001
			[0.011]			[0.012]			[0.018]
Constant	0.753***	0.699***	0.368***	0.736***	0.730***	0.238	0.490***	0.499***	0.362
	[0.017]	[0.018]	[0.117]	[0.018]	[0.019]	[0.189]	[0.030]	[0.033]	[0.237]
Country-Region FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	13,019	12,914	12,498	11,918	11,838	11,628	12,126	12,041	11,831
R-squared	0.035	0.072	0.206	0.091	0.132	0.272	0.068	0.077	0.124

Table S2. Gender Differences on COVID-19 Vaccination

VARIABLES	(1) ALL	(2) AUS	(3) AUT	(4) FRA	(5) GER	(6) ITA	(7) NZ	(8) POL	(9) SW	(10) UK	(11) US
Women	-0.030***	-0.038**	-0.052**	-0.042***	-0.060***	0.021	-0.018	-0.041**	-0.018	0.013	-0.031**
	[0.005]	[0.018]	[0.022]	[0.013]	[0.013]	[0.018]	[0.018]	[0.020]	[0.018]	[0.018]	[0.014]
No High School	-0.056***	0.020	-0.060*	-0.050	-0.051	-0.084***	-0.034	-0.101	-0.034	-0.076**	-0.082*
	[0.010]	[0.026]	[0.032]	[0.036]	[0.034]	[0.032]	[0.028]	[0.063]	[0.028]	[0.039]	[0.042]
High School	-0.026***	0.010	-0.008	-0.029**	-0.032**	-0.029	-0.044**	-0.019	-0.044**	-0.031	-0.040***
	[0.006]	[0.022]	[0.034]	[0.014]	[0.015]	[0.021]	[0.020]	[0.023]	[0.020]	[0.020]	[0.015]
Service Workers	-0.003	-0.017	-0.033	-0.004	0.027	0.035	0.007	-0.036	0.007	-0.010	0.006
	[0.008]	[0.024]	[0.036]	[0.021]	[0.023]	[0.037]	[0.026]	[0.036]	[0.026]	[0.025]	[0.018]
Blue Collars	-0.025***	-0.074***	-0.072*	-0.022	-0.036	0.021	0.043	-0.035	0.043	-0.028	-0.002
	[0.009]	[0.028]	[0.040]	[0.027]	[0.026]	[0.040]	[0.033]	[0.036]	[0.033]	[0.031]	[0.020]
Inactive	0.001	-0.068	-0.013	-0.002	0.015	0.033	0.026	0.016	0.026	0.003	0.020
	[0.009]	[0.046]	[0.039]	[0.024]	[0.022]	[0.035]	[0.029]	[0.033]	[0.029]	[0.028]	[0.029]
35-49 yo	0.028***	0.017	0.041	-0.011	0.028	0.035	0.014	0.056**	0.014	0.043*	0.030*
	[0.007]	[0.024]	[0.029]	[0.018]	[0.019]	[0.025]	[0.023]	[0.026]	[0.023]	[0.024]	[0.018]
50-59 yo	0.077***	0.007	0.106***	0.051**	0.094***	0.064**	0.049*	0.171***	0.049*	0.082***	0.034
	[0.008]	[0.026]	[0.033]	[0.021]	[0.021]	[0.029]	[0.027]	[0.029]	[0.027]	[0.028]	[0.022]
60+ yo	0.133***	0.128***	0.109***	0.122***	0.137***	0.103***	0.090***	0.146***	0.090***	0.161***	0.147***
	[0.007]	[0.026]	[0.033]	[0.020]	[0.019]	[0.025]	[0.025]	[0.027]	[0.025]	[0.026]	[0.017]
Constant	0.699***	0.738***	0.723***	0.687***	0.652***	0.662***	0.700***	0.581***	0.700***	0.715***	0.696***
	[0.017]	[0.028]	[0.063]	[0.024]	[0.027]	[0.039]	[0.028]	[0.037]	[0.028]	[0.039]	[0.023]
Country-Region FE	Yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	12,914	894	994	2,082	2,091	1,025	1,011	1,023	1,011	1,016	1,747
R-squared	0.072	0.061	0.048	0.056	0.071	0.034	0.050	0.072	0.050	0.065	0.058

Table S3. Vaccination is the only Permanent Solution to COVID-19

VARIABLES	(1) ALL	(2) AUS	(3) AUT	(4) FRA	(5) GER	(6) ITA	(7) NZ	(8) POL	(9) SW	(10) UK	(11) US
Women	-0.074***	-0.062***	-0.094***	-0.123***	-0.076***	-0.058***	-0.055***	-0.088***	-0.055***	-0.070***	-0.059***
	[0.006]	[0.020]	[0.024]	[0.021]	[0.015]	[0.020]	[0.021]	[0.021]	[0.021]	[0.021]	[0.016]
No High School	-0.083***	-0.004	-0.061*	-0.054	-0.026	-0.150***	-0.092***	-0.022	-0.092***	-0.098**	-0.198***
	[0.012]	[0.029]	[0.035]	[0.060]	[0.040]	[0.035]	[0.033]	[0.068]	[0.033]	[0.044]	[0.046]
High School	-0.057***	-0.024	-0.026	-0.081***	-0.057***	-0.062***	-0.056**	-0.013	-0.056**	-0.052**	-0.084***
	[0.007]	[0.025]	[0.038]	[0.024]	[0.018]	[0.023]	[0.024]	[0.024]	[0.024]	[0.023]	[0.017]
Service Workers	-0.024**	-0.032	-0.079*	-0.019	-0.015	0.016	-0.003	-0.032	-0.003	-0.087***	-0.000
	[0.009]	[0.026]	[0.040]	[0.034]	[0.026]	[0.041]	[0.031]	[0.039]	[0.031]	[0.029]	[0.020]
Blue Collars	-0.067***	-0.129***	-0.126***	-0.128***	-0.090***	0.015	0.030	-0.051	0.030	-0.084**	-0.047**
	[0.011]	[0.031]	[0.044]	[0.045]	[0.030]	[0.044]	[0.039]	[0.039]	[0.039]	[0.035]	[0.023]
Inactive	-0.019*	-0.054	-0.055	-0.012	-0.016	0.011	0.018	-0.021	0.018	-0.009	-0.042
	[0.010]	[0.051]	[0.043]	[0.040]	[0.026]	[0.039]	[0.034]	[0.035]	[0.034]	[0.032]	[0.034]
35-49 yo	0.002	0.024	-0.023	-0.012	0.019	-0.009	0.004	0.023	0.004	0.021	-0.012
	[0.008]	[0.026]	[0.032]	[0.030]	[0.022]	[0.027]	[0.027]	[0.028]	[0.027]	[0.028]	[0.020]
50-59 yo	0.062***	0.023	0.052	0.094***	0.101***	0.027	0.008	0.110***	0.008	0.052	0.048*
	[0.009]	[0.029]	[0.036]	[0.034]	[0.024]	[0.032]	[0.031]	[0.031]	[0.031]	[0.032]	[0.026]
60+ yo	0.134***	0.146***	0.102***	0.122***	0.164***	0.087***	0.093***	0.170***	0.093***	0.165***	0.108***
	[0.008]	[0.029]	[0.037]	[0.032]	[0.022]	[0.028]	[0.029]	[0.029]	[0.029]	[0.030]	[0.020]
Constant	0.730***	0.790***	0.705***	0.557***	0.596***	0.705***	0.702***	0.551***	0.702***	0.768***	0.738***
	[0.020]	[0.031]	[0.069]	[0.039]	[0.032]	[0.043]	[0.033]	[0.040]	[0.033]	[0.044]	[0.026]
Country-Region FE	yes	yes	yes		yes	yes	yes	yes	yes	yes	yes
Observations	11,838	864	994	1,042	2,091	1,025	1,011	1,023	1,011	1,016	1,741
R-squared	0.132	0.087	0.054	0.096	0.088	0.046	0.055	0.073	0.055	0.109	0.073

Table S4: Agreement to be Vaccinated

VARIABLES	(1) ALL	(2) AUS	(3) AUT	(4) FRA	(5) GER	(6) ITA	(7) NZ	(8) POL	(9) SW	(10) UK	(11) US
Women	-0.061***	0.006	-0.114***	-0.127***	-0.054**	-0.018	-0.040	-0.137***	-0.040	-0.067**	-0.015
	[0.009]	[0.033]	[0.028]	[0.028]	[0.021]	[0.032]	[0.032]	[0.028]	[0.032]	[0.032]	[0.024]
No High School	-0.050***	-0.002	-0.073*	-0.047	0.040	-0.188***	-0.036	0.121	-0.036	0.019	-0.171**
	[0.017]	[0.047]	[0.041]	[0.078]	[0.055]	[0.056]	[0.051]	[0.089]	[0.051]	[0.069]	[0.071]
High School	-0.028***	0.001	-0.042	-0.063**	0.032	-0.102***	-0.017	0.014	-0.017	-0.000	-0.092***
	[0.010]	[0.041]	[0.044]	[0.031]	[0.024]	[0.038]	[0.037]	[0.032]	[0.037]	[0.035]	[0.026]
Service Workers	-0.027*	-0.061	-0.052	0.004	-0.065*	0.140**	-0.124***	-0.035	-0.124***	-0.038	-0.005
	[0.014]	[0.044]	[0.047]	[0.044]	[0.036]	[0.066]	[0.048]	[0.051]	[0.048]	[0.045]	[0.031]
Blue Collars	-0.033**	-0.057	-0.083	-0.048	-0.068*	0.112	-0.057	-0.086*	-0.057	-0.069	0.034
	[0.016]	[0.051]	[0.051]	[0.058]	[0.041]	[0.071]	[0.060]	[0.051]	[0.060]	[0.055]	[0.034]
Inactive	-0.005	0.098	-0.014	0.001	-0.047	0.088	-0.095*	0.011	-0.095*	0.030	-0.012
	[0.015]	[0.085]	[0.051]	[0.052]	[0.036]	[0.063]	[0.053]	[0.047]	[0.053]	[0.049]	[0.050]
35-49 yo	-0.028**	0.057	-0.003	0.027	-0.016	-0.074*	-0.067	0.020	-0.067	-0.052	-0.088***
	[0.012]	[0.043]	[0.037]	[0.039]	[0.030]	[0.044]	[0.042]	[0.037]	[0.042]	[0.043]	[0.030]
50-59 yo	0.041***	0.083*	0.029	0.068	0.079**	-0.008	0.067	0.105**	0.067	0.044	-0.023
	[0.014]	[0.048]	[0.042]	[0.044]	[0.033]	[0.052]	[0.049]	[0.041]	[0.049]	[0.050]	[0.038]
60+ yo	0.069***	0.183***	0.053	0.059	0.139***	-0.042	0.114**	0.133***	0.114**	0.101**	0.013
	[0.012]	[0.048]	[0.043]	[0.042]	[0.030]	[0.045]	[0.045]	[0.038]	[0.045]	[0.046]	[0.030]
Constant	0.499***	0.579***	0.266***	0.294***	0.302***	0.527***	0.674***	0.341***	0.674***	0.469***	0.526***
	[0.028]	[0.051]	[0.081]	[0.051]	[0.044]	[0.070]	[0.052]	[0.053]	[0.052]	[0.069]	[0.040]
Country-Region FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	12,041	932	992	1,042	2,089	1,024	1,010	1,021	1,010	1,016	1,884
R-squared	0.077	0.031	0.037	0.052	0.034	0.024	0.051	0.070	0.051	0.039	0.020

Table S5: Agreement with Compulsory Vaccination

VARIABLES	(1) Risk Aversion	(2) COVID Serious Health Concern	(3) Probability of be Infected	(4) Probability of serious ill if Infected	(5) Trust in Scientists	(6) Liberal Ideology	(7) Central Ideology	(8) Vaccination is the Solution	(9) Multinationals' Fault	(10) Parents of School Kids
Women	0.566***	0.052***	0.175***	0.089*	-0.008	0.026***	-0.005	-0.030***	0.143**	0.006
	[0.045]	[0.008]	[0.048]	[0.048]	[0.007]	[0.007]	[0.009]	[0.005]	[0.057]	[0.006]
No High School	0.009	0.013	-0.545***	-0.080	-0.105***	-0.083***	-0.005	-0.056***	1.145***	0.035***
	[0.091]	[0.016]	[0.097]	[0.096]	[0.014]	[0.014]	[0.017]	[0.010]	[0.116]	[0.012]
High School	0.115**	-0.000	-0.396***	-0.011	-0.076***	-0.040***	0.008	-0.026***	0.662***	0.031***
	[0.052]	[0.009]	[0.055]	[0.055]	[0.008]	[0.008]	[0.010]	[0.006]	[0.065]	[0.007]
Service Workers	0.217***	-0.002	-0.120	0.003	0.001	0.004	0.002	-0.003	0.150*	-0.021**
	[0.070]	[0.012]	[0.074]	[0.074]	[0.010]	[0.011]	[0.013]	[0.008]	[0.088]	[0.010]
Blue Collars	0.175**	0.007	-0.385***	-0.081	-0.048***	0.013	-0.009	-0.025***	0.491***	-0.020*
	[0.081]	[0.014]	[0.086]	[0.085]	[0.012]	[0.013]	[0.015]	[0.009]	[0.103]	[0.011]
Inactive	0.480***	0.024*	-0.345***	0.282***	-0.027**	0.010	-0.008	0.001	0.042	-0.122***
	[0.076]	[0.013]	[0.081]	[0.081]	[0.011]	[0.012]	[0.015]	[0.009]	[0.096]	[0.010]
35-49 yo	0.398***	0.057***	0.059	0.478***	-0.005	-0.031***	0.024**	0.028***	0.032	0.181***
	[0.061]	[0.010]	[0.065]	[0.064]	[0.009]	[0.010]	[0.012]	[0.007]	[0.077]	[0.008]
50-59 yo	0.617***	0.085***	0.003	0.806***	0.017	-0.006	0.035**	0.077***	-0.558***	0.006
	[0.071]	[0.012]	[0.075]	[0.075]	[0.011]	[0.011]	[0.014]	[0.008]	[0.089]	[0.010]
60+ yo	0.530***	0.113***	-0.009	1.498***	0.059***	-0.002	0.008	0.133***	-1.080***	-0.097***
	[0.063]	[0.011]	[0.067]	[0.066]	[0.009]	[0.010]	[0.012]	[0.007]	[0.080]	[0.009]
Constant	4.097***	0.411***	5.908***	5.090***	0.865***	0.193***	0.366***	0.699***	3.141***	-0.004
	[0.146]	[0.025]	[0.157]	[0.156]	[0.022]	[0.023]	[0.028]	[0.017]	[0.198]	[0.020]
Country-Region FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	12,808	13,210	13,215	13,215	13,210	13,215	13,215	12,914	12,763	13,215
R-squared	0.083	0.091	0.089	0.073	0.049	0.020	0.036	0.072	0.096	0.191

Table S6: Gender differences in Attitudinal Factors

VARIABLES	(1) Agree to be Vaccinated	(2) Agree to Compulsory Vaccination
Women	-0.052***	-0.050***
	[0.005]	[0.009]
Vaccine Solution	0.534***	0.351***
	[0.011]	[0.016]
COVID Multinat's Fault	-0.016***	-0.009***
	[0.001]	[0.001]
Schoolkids Parents	0.012*	0.008
	[0.007]	[0.012]
Constant	0.144	0.290
	[0.152]	[0.216]
Country-Region FE	yes	yes
Socio-demo controls	yes	yes
Attitudinal controls	yes	yes
Observations	11,272	11,291
R-squared	0.473	0.170

Table S7: Gender Differences in Vaccination – Skepticism in COVID-19 Vaccines