Trust Issues? How Being Socialised in an Autocracy Shapes Vaccine Uptake*

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Abstract

The COVID-19 pandemic increased pressure on the relationship between governments and the public, making cooperation between both actors more critical than ever. Surprisingly, there is significant variation in public compliance with health policies, especially regarding vaccine uptake across different countries. Based on this finding, we seek to understand why vaccination hesitancy varies between countries. Instead of focusing solely on government trust and satisfaction, this research examines the impact of individuals' experiences having lived in autocratic countries on vaccine hesitancy. We derive a formal model of how autocratic experience and the subsequent distrust in health policies affect the individual calculus on vaccine uptake, and test the propositions of our model in a sample of 33 European countries on the micro-level. We find that autocratic experience gravely impacts individual vaccine hesitancy. Our findings shed light on the prolonged impact of autocratic rule on societal processes and on the roots of vaccine hesitancy, which is not rooted in general distrust but rather a highly specific form of scepticism towards government action.

Keywords: Autocracy, COVID-19, Pandemic, Vaccination, Public Health

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1 Introduction

Health crises like the COVID-19 pandemic can only be contained through cooperation between the public and governments. Over the course of the pandemic, within various countries different levels of cooperation between the public and governments were observed (see, e.g., Bargain and Aminjonov, 2020; Brouard et al., 2020; Nivette et al., 2021). Significant differences between government policies and citizen behavior are particularly pronounced when it comes to vaccine uptake by the population (see Salomoni et al., 2021). Looking at this variance in vaccine uptake, we can already discern crucial differences in European countries, with Germany (70.47%) and Norway (71.88%) showing a moderate vaccine uptake, Poland (55.68%) exhibiting rather low vaccination rates, and Portugal (84.17%) having one of the highest vaccination rates.[1] This leads us to our question: *Why does vaccination hesitancy vary between countries?*

The answer we propose is that having experienced life under an authoritarian government is a crucial but previously overlooked factor in determining citizen compliance with government health policies and vaccinations in particular. Our main argument is that this individual autocratic experience makes citizens (and former citizens of such countries) distrustful of government policies that infringe civil liberties, especially when it comes to health policies, which often play a crucial role in autocracies (see, e.g., Schäfer, 2005; Xu and Jin, 2018). Having spent more time in a democratic system, however, people build trust in their democratic governments and believe health policies are only in place to avert dangers and not to deceive, or even harm, citizens.

Previous contributions have already addressed the difference in the pandemic response of autocratic and democratic regimes (e.g. Alon et al., 2020; Cepaluni et al., 2020; Stasavage, 2020) as well as populist and non-populist governments (e.g. Bayerlein et al., 2021; Bayerlein and Gyöngyösi, 2020; McKee et al., 2020; Williams et al., 2020). Related research that focused on public behavior found that citizens are affected by messaging from politicians over the course of the pandemic (e.g. Barrios and Hochberg, 2020; Bayerlein et al., 2021; Gollwitzer et al., 2020). Surprisingly, what is still missing is research on the question as to why some citizens comply with the policies of *their* government while others do not, especially when it comes to vaccinations. The few existing studies focus solely on the perception of government risk communication (e.g. Thanh et al., 2021), address single cases (e.g. Dunn and Laterzo, 2021) or analyse general levels of trust (e.g. Goldstein and Wiedemann, 2020).

Although trust is an important component in explaining public compliance with health policies and vaccine hesitancy, it is essential to first understand the determinants of trust. Arguably, the autocratic past of an individual constitutes one such crucial component (e.g. Newton et al., 2018; Tabellini, 2008; Xu and Jin, 2018). A mistrust of state policies lingers in this context, and even when there is a change in the political system, an experience of autocracy, influences individuals' perceptions and trust in government. An autocratic past might therefore be an important but previously overlooked determinant of vaccine uptake.

In addressing this research gap and answering our question, we make two important contributions. First, in focusing on a measure of individual autocratic experience, we analyze a

[1] Vaccination rates as of December 31, 2021. Rates include share of people with a complete initial protocol. The data comes from OWID (Hannah Ritchie et al., 2020).

previously overlooked determinant of public compliance with public health policies, such as vaccine roll-outs. Second, by finding a positive association between autocratic past and lack of compliance, we can draw inferences on how governments can take into account the autocratic experiences of citizens in communicating and implementing health policies. We analyze the correlation between autocratic past and citizen compliance in a sample of 33 developed and developing European countries in the summer of 2021. We proceed by first reviewing the relevant literature, followed by a presentation of our formal model and an empirical assessment of the propositions from this model. We close with a discussion of our results and the conclusion.

2 Literature Review

Since the onset of the COVID-19 pandemic, research has explored how different regime types influence the severity of the virus' outbreak. Studies focused on this question often emphasize that autocratic regimes tend to respond quickly to immediate threats (Alon et al., 2020; Cepaluni et al., 2020; Stasavage, 2020). However, when considering the effectiveness and speed of government responses, research consistently reveals that death rates are significantly lower in democracies (Karabulut et al., 2021).

The differences in pandemic performance between autocratic and democratic regimes can usually be attributed to healthcare quality and high levels of public health in democracies (Besley and Kudamatsu, 2006; Hall and Jones, 2007; Patterson and Veenstra, 2016; Wigley and Akkoyunlu-Wigley, 2017). In contrast, autocracies often disregard public goods, health spending, and access to adequate healthcare (Deacon, 2009; Justesen, 2012; V-Dem, 2022). Moreover, dictatorships tend to subordinate health and medical science to the regime's ideology, leading to unfathomably inhumane consequences (Alexander, 1949; Schäfer, 2005). Even in cases where autocratic regimes emphasize public health, such as in the German Democratic Republic and Cuba, trade barriers and a lack of collaboration with medical advances in competing systems often lead to supply shortages and the absence of high-quality medical technology and innovation (Bettin, 2016; Cooper et al., 2006; Garfield and Santana, 1997; Schochow and Steger, 2020).

The causal relationship between public health in general and pandemic performance in particular, however, is not uni-directional. Instead, the interaction between the public and the government is a crucial predictor in determining public health outcomes and pandemic severity (Bayerlein et al., 2021). Previous research focused on this interaction has highlighted that general trust in government and the specific evaluation of the government's response to the COVID-19 pandemic are important components in determining the cooperation between the public and governments (Altiparmakis et al., 2021; Borisova et al., 2022; Han et al., 2021; Kofanov et al., 2023; Pak et al., 2021; Shanka and Menebo, 2022; Zaki et al., 2022). A particularly noteworthy strand of research centers on trust as a determinant of vaccine uptake (Allington et al., 2023; Borisova et al., n.d.; Ebrahimi et al., 2021; Jennings et al., 2021; Jennings et al., 2023; Kricorian et al., 2022; Petersen et al., 2021; Toshkov, 2023; Troiano and Nardi, 2021; Willis et al., 2021).

The importance of trust in the interaction between the public and the government during the pandemic, as outlined by previous contributions, is also connected to individual experiences

with different regime types rather than limited to the existing political structure. Studies have already pointed out that individual autocratic experiences shape people's trust in their current government (Newton et al., 2018; Tabellini, 2008; Xu and Jin, 2018). With respect to health policies, this trust becomes especially important, as individuals rely heavily on the government for adequate healthcare as well as accurate and trustworthy information on diseases, pharmaceuticals, therapies, and vaccinations.

Research examining the trustworthiness of public health information in authoritarian systems tends either to downplay serious diseases or deceptions of the public about miracle cures (Bosha et al., 2019; del Arco Blanco, 2021; Lin et al., 2022; Ludwig, 2020). Such behavior is often rooted in autocracies' poor health outcomes for the public (Ross, 2006; V-Dem Institute, 2021; Wang et al., 2019). Additionally, autocracies frequently manipulate official statistics to gloss over their damaging public health performance (Morrison and Boese, 2022). These findings are also observed in research concerning countries experiencing the erosion of democratic institutions during the pandemic (Clark and Patty, 2021; McKee et al., 2020; Smith, 2020).

The literature review indicates that individuals' autocratic experiences, trust in government action, and compliance with public health policies are seemingly interconnected. Given this finding, it is all the more surprising that no research has yet provided a comprehensive approach to linking individual autocratic experiences to distrust, especially concerning health policies and the ways in which this lack of trust again relates to vaccine hesitancy. We address this research gap by providing and empirically testing a formal model of how an individual evaluates whether or not to receive the vaccine while taking into account the individual's autocratic experiences.

3 Theory

Getting vaccinated involves making choices under uncertainty, as no vaccine is completely devoid of possible side effects. Therefore, an individual must weigh the risk of potential side effects against the risk of infection with the virus. The earlier COVID-19 variants were particularly serious, carrying a high risk of severe illness and even death. As a result, we would expect a risk-neutral, or perhaps even a risk-averse, individual to opt into getting vaccinated. The individual decision-making process would involve a cost-benefit analysis associated with risk (for further insights into the topics, see Wagstaff, Layard and Glaister (1994)). Essentially, we can formulate an expected utility function for a representative individual, which would take the following form:

$$U = \pi(V)U^H + (1 - \pi(V))U^L - C(V) \tag{1}$$

where U reflects expected utility, and U^H and U^L represent utilities when healthy and ill (with COVID-19). The probability (π) of remaining well increases with the uptake of the vaccine, V, but there may be some costs (perceived or real side effects) associated with vaccine uptake, C. Maximising (1) with respect to V we obtain (subscripts denote partial derivatives):

$$\pi_V(U^H - U^L) = C_V \tag{2}$$

The left-hand side of (2) represents the marginal benefit of taking the vaccine, which is positive as long as the utility of a COVID-free healthy state is preferred to contracting the disease. Furthermore, for the 'homo economicus,' or rational person, the marginal benefit of avoiding COVID-19 as compared to the side effects of the vaccine is strictly positive. However, some individuals may still reject the vaccine if the overall costs of vaccination, including psychological costs, are high:

$$\pi_V(U^H - U^L) < C_V \tag{3}$$

Nevertheless, there are other factors attributed to vaccine rejection, even when the rational calculus for its uptake is compelling, as described above, and the inequality sign in (2) is reversed. For vaccine uptake to occur, the message from the authorities (μ) regarding its efficacy must be credible. This decision may also depend upon the type of individual and his or her ability to process the message. Individuals are also exposed to other messages, many of which deny vaccine efficacy, and some of which even promote conspiracy theories about the vaccine. Ascertaining the true informational content of the government's message compared to other potentially misleading messages could be costly.

Following Murshed (2011), we postulate that society (i) is composed of two types of individuals: one type has a high cost of message verification (h), and another type of individual who has a low (l) cost of checking the truthfulness and credibility of messages. The general form of the individual vaccination decision may be described as:

$$U_i = y_i - \phi\mu_i(z) - z(i) \quad ...i = h, l \tag{4}$$

Here, y_i represents the expected utility calculation of (1). The second term, $\phi\mu_i(z)$, refers to the value of the message informing the public about vaccine efficacy. It consists of the parameter ϕ representing the belief or probability that the message, μ, is reliable, which is also a function of a search cost, z. If $\phi = 1$, the message is entirely reliable, and a complete lie if it is 0, with several intermediate possibilities between 0 and 1. The last term on the right-hand side of (3) represents search costs depending on the inherent type of the individual. The evolution of ϕ will follow a Bayesian pattern of updating priors, where history matters, particularly the heritage of the state as to the reliability of its announcements. The formula for Bayesian updating is:

$$\frac{\phi}{\phi + (1 - \phi)\mu} \tag{5}$$

Thus, the current belief or estimation will also depend upon the history of prior subjective probabilities. In general, the maximization of (3) with respect to the search (z) of message veracity permits us to derive two conditions:

$$\phi\mu_{hz} < z_h \quad \text{and} \quad \phi\mu_{lz} > z_l \tag{6}$$

The first inequality in (5) is due to higher marginal search costs ($\phi\mu_{hz} < z_h$) relative to utility derived from the message for the low-cost individual. The low-cost individual may also assign a lower probability that state messaging is veracious. As a result, they are likely to opt out of the vaccine. In contrast, the second inequality in (5) indicates that search costs are lower, and the credibility of the message on vaccine efficacy is greater for the low-cost individual ($\phi\mu_{lz} > z_l$). However, even this type of individual may reject the vaccine for sufficiently low values of the parameter ϕ, and if the inequality in (2) applies to them. In summary, vaccine hesitancy is more likely if:

1. $\pi_V(U^H - U^L) < C_V$. The marginal physical and psychological costs of the vaccine are greater than the marginal benefits.

2. $\frac{1}{2} \geq \phi \geq 0$. The probability of the government's message being true lies along the interval between 0 and a $\frac{1}{2}$, implying that the individual treats the vaccine efficacy message as a lie or randomizes with an equal chance of vaccine rejection.

3. $\phi\mu_{hz} < z_h$. The individual in question experiences high costs of message verification and separating noise from signals.

The last component of our theoretical model is the autocratic experience, which factors into the credibility of the government's message and thereby greatly impacts the above-derived calculus. Trust in government is strongly influenced by an individual's autocratic experiences, which not only shape political trust and thereby trust in the government but also extend to social trust and other societal institutions (Newton et al., 2018; Tabellini, 2008; Xu and Jin, 2018). In the context of health policies, this is especially concerning due to two factors: First, citizens are strongly dependent on the government to receive adequate health care. Second, autocracies tend to present themselves as good providers for the people through a legitimating narrative, which causes them to downplay serious diseases or promote false cures (Bosha et al., 2019; del Arco Blanco, 2021; Lin et al., 2022; Ludwig, 2020). Further, autocracies lead to worse health outcomes for the public (Ross, 2006; V-Dem Institute, 2021; Wang et al., 2019), leading to frequent manipulation or misclassification of official statistics (Morrison and Boese, 2022). Based on this, we argue that vaccine hesitancy should be impacted by an individual's autocratic experience via persisting distrust in government messages, particularly regarding healthcare issues.

To summarize from the theoretical model presented above, we derive three empirical expectations, which are outlined in the following hypotheses:

H1: *Autocratic experience increases the probability of distrust in the current government of an individual.*

H2: *Distrust in the current government increases the probability of vaccine hesitancy of an individual.*

Based on these two hypotheses, we derive a third and final expectation:

H3: *Autocratic experience increases the probability of vaccine hesitancy of an individual.*

4 Data

We test these propositions with a cross-sectional analysis in a sample of 33 developed and developing democratic European countries in July 2021. Due to the historical German division, we treated the former territories of the German Democratic Republic (GDR) and the Federal Republic of Germany (FRG) as separate countries in our analysis. We restrict the data to democratic countries due to the low quality of data associated with non-democratic countries (Hollyer et al., 2011; Morrison and Boese, 2022). Our sample is further limited by the availability of survey data. Our primary variables of interest are vaccine hesitancy, an individual's autocratic experience, and distrust in government. In the following sections, we introduce our sample, data, operationalization, and provide descriptive insights into the relationship formulated in our model.

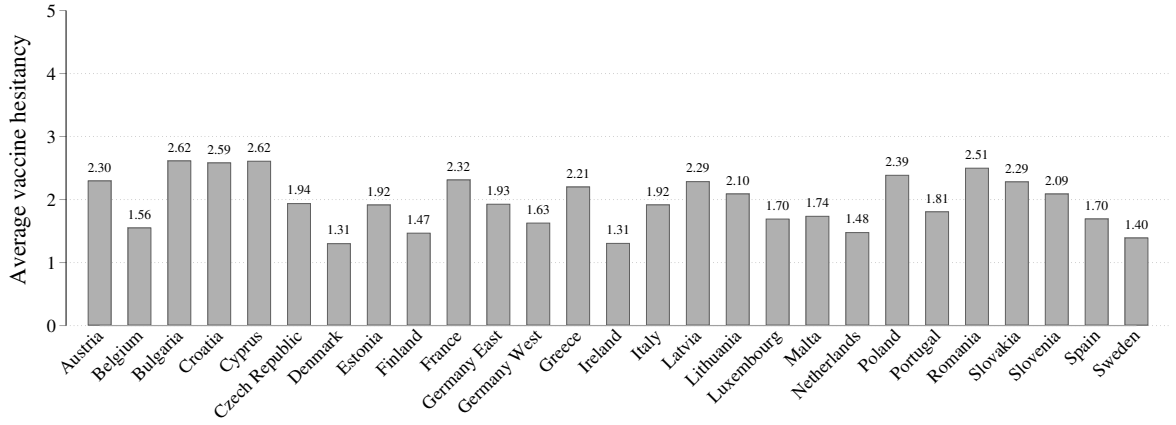
4.1 Vaccine Hesitancy

Our main variable of interest is the vaccine hesitancy of individuals. Barring delays in the rollout of vaccines, the vaccine uptake of individuals is mostly hindered by individual vaccine hesitancy. The World Health Organization's Strategic Advisory Group of Experts (SAGE) on immunization describes vaccine hesitancy as the "delay in acceptance or refusal of vaccination despite the availability of vaccination services" (MacDonald et al., 2015, p. 4161).

To measure vaccine hesitancy at the individual level in our sample of 33 countries, we draw on data from the Eurobarometer 94.3 . The survey was conducted in February and March 2021 and posed the question: "When would you like to get vaccinated against COVID-19 (coronavirus)?" with the possible answers "I have already been vaccinated", "As soon as possible", "Some time in 2021", "Later", and "Never". The responses are coded from 1 (indicating that a person is already vaccinated) to 5 (indicating that a person never wants to be vaccinated). Based on this coding, we treat the variable as continuous with higher values indicating higher vaccine hesitancy. However, while the steps from 2 (as soon as possible) to 5 (never) follow a logical order, the step from 1 (already vaccinated) to 2 (as soon as possible) is rather an expression of vaccination policy and availability than personal hesitancy. In order to avoid any distortions from this, we exclude respondents that have already been vaccinated. Since the field work was conducted at an early stage of the vaccine role out, this only leads to the removal of 564 respondents with 19,662 remaining in the sample. Additionally, we recode to variable to range from 1 (as soon as possible) to 4 (never). The sample average is 1.96 with a standard deviation of 1.07. To provide further details, Figure 1 plots the average vaccine hesitancy in our sample countries.

The figure illustrates considerable variance between the 33 countries. Several countries, in Eastern Europe in particular, stand out with high levels of population-wide vaccine hesitancy.

Figure 1: Average vaccine hesitancy by countries



Notes: The figure shows the average vaccine hesitancy in our 33 sample countries. The data on vaccine hesitancy comes from the Eurobarometer 94.3 . The variable ranges from 1 (a respondent wanting to be vaccinated as soon as possible) to 4 (a respondent never wanting to be vaccinated). We calculate the simple mean by country.

Similarly, certain Southern European countries, such as Greece and Cyprus, show comparatively high levels of vaccine hesitancy. In contrast, Northern European countries, including Iceland, Denmark, and Sweden, display very low levels of vaccine hesitancy. The case of Sweden is particularly interesting as the Swedish government mostly relied on citizens simply adhering to public health recommendations (see Ohrling et al., 2020; Sjödin et al., 2020). Additionally, we also identify an interesting split within Germany. While we find an average vaccine hesitancy of 2.55 in Eastern Germany, vaccine hesitancy is significantly lower in Western Germany at an average of 1.69. Building on these findings, the following sections introduce explanatory variables and provide descriptive insights into their correlation with vaccine hesitancy.

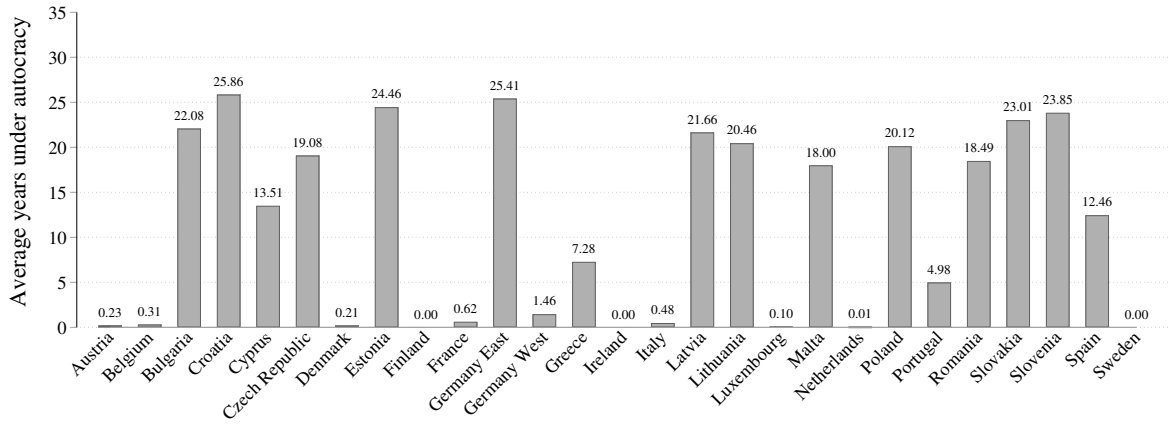
4.2 Autocratic Experience

Our primary explanatory variable is the autocratic experience of an individual, which we determine in three steps: First, we rely on the regime type coding from Lührmann et al., 2018 to code the most recent change from a closed autocracy or electoral autocracy to at least an electoral democracy, without a reversion to a closed autocracy or electoral autocracy. Second, we exclude all individuals who were not born in the country in which they currently reside, and calculate the number of years they lived under autocratic rule based on their date of birth. Third, we account for any intermediate democratic spells in the respective countries.

Using this approach, we can estimate the years an individual has lived under autocratic rule. This approach assumes that an individual has not lived abroad and that the impact of living under autocratic rule is consistent across different age groups. We also address the effect across age groups in the robustness checks. Given the historical context of the German division and autocratic rule in Eastern Germany, we split the German sample and code the autocratic experience for people born and residing in Eastern Germany accordingly.

Based on our coding, we estimate an average autocratic experience of 11.01 years in our sample, with a standard deviation of 14.32 and a median of 2 with an interquartile range of 20. From this distribution, we can already conclude that our sample is marked by a large variance in autocratic experiences, with more than half of the respondents in our sample having experienced autocratic rule. Figure 2 underscores this first impression by displaying the average years of autocratic experience by country. Naturally, we can identify clusters of autocratic experience on the country-level, as citizens from some countries have experienced longer and more recent autocratic spells than others, based solely on their countries of origin.

Figure 2: Average years of autocratic experience by countries

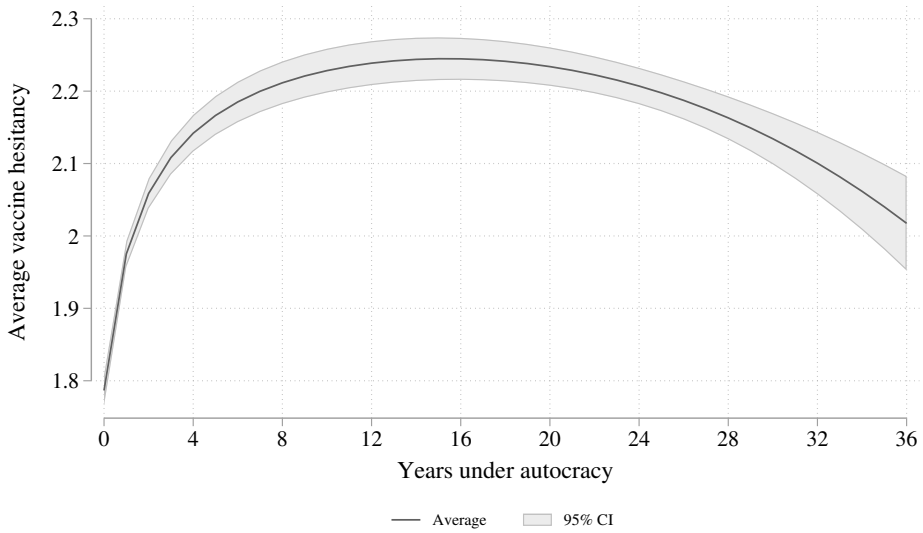


Notes: The figure shows the average years of autocratic experience in our 33 sample countries. The data on regimes types comes from Lührmann et al., 2018. The individual autocratic experience is coded by estimating the years an individual has lived under autocratic rule in a given country by excluding migrants and intermediate democratic spells.

Having provided some descriptive insights on the distribution of autocratic experiences within our sample and between countries, we now analyze the correlation between autocratic experiences and vaccine hesitancy. In order to do so, we plot the average vaccine hesitancy (from 1 to 4) against the autocratic experience of individuals measured in years lived under autocratic rule between the 10th and 90th percentile of the distribution. We introduce a polynominal function to uncover a possible non-linear relationship. The results are displayed in Figure 3. The figure shows a clear and statistically significant correlation between both variables across different years of autocratic experience. The figure also reveals a particularly stark increase in the correlation within the first 4 years of autocratic experience, with the steepest correlation between 0 and 1 year. This indicates that it is rather a question of having lived under autocratic rule or not than a question of the duration of the autocratic experience.

The descriptive insights provided in this section already shed some first light on the mechanism worked out in our formal model. Most importantly, we find descriptive support for our main proposition on the correlation between autocratic experience and vaccine hesitancy. Further, we also find strong evidence that the relationship is guided by an individual having lived under autocratic rule or not and not by the duration of living under autocratic rule. Moving forward, the next section dives deeper into the mechanism and provides insights as to how the relationship

Figure 3: Correlation between autocratic experience and vaccine hesitancy



Notes: The figure shows the correlation between vaccine hesitancy and average years of autocratic experience in our 33 sample countries. The data on regimes types comes from Lührmann et al., 2018/the V-Dem dataset v11. The individual autocratic experience is coded by estimating the years an individual has lived under autocratic rule in a given country by excluding migrants and intermediate democratic spells. The data on vaccine hesitancy comes from the Eurobarometer 94.3 . The variable ranges from 1 (a respondent wanting to be vaccinated as soon as possible) to 4 (a respondent never wanting to be vaccinated).

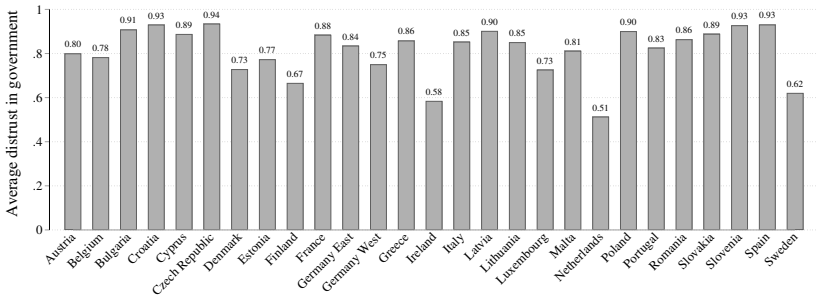
between autocratic experiences and vaccine hesitancy runs via trust in government and specific evaluations of a country's health system.

4.3 Distrust in Government

The main component of our mechanism that links autocratic experiences to vaccine hesitancy is individual trust. Trust, as described by Uslaner (2018, p. 4), refers to "confidence in institutions such as the executive, the legislature, the judiciary, the bureaucracy, and the police." While previous research has shown that various forms of trust are impacted by autocratic experiences (see, e.g., Newton et al., 2018; Tabellini, 2008; Xu and Jin, 2018), our model places a particular emphasis on trust in governments. While other forms of distrust might also be relevant, our approach focuses exclusively on trust in government.

In order to determine the trust of an individual we again use the Eurobarometer 94.3 survey. The survey asked the respondents the following question: "How much trust do you have in certain institutions? For each of the following institutions, do you tend to trust it or tend not to trust it?" Focus on "The (NATIONALITY) Government". The answer is binary and re-coded by us to 0 indicating no distrust and 1 indicating distrust. The average distrust in our sample is 0.67 with a standard deviation of 0.47 and a median of 1. The average distrust in government by country is plotted in Figure 4. We again find considerable variance between countries with particularly high numbers in the Eastern European sub-sample, in addition to France and the United Kingdom.

Figure 4: Average distrust in government by countries



Notes: The figure shows the average distrust in government in our 33 sample countries. The data on trust in government comes from the Eurobarometer 94.3 . The variable ranges from 0 (tend not to distrust government) to 1 (tend to distrust government). We calculate the simple mean by country.

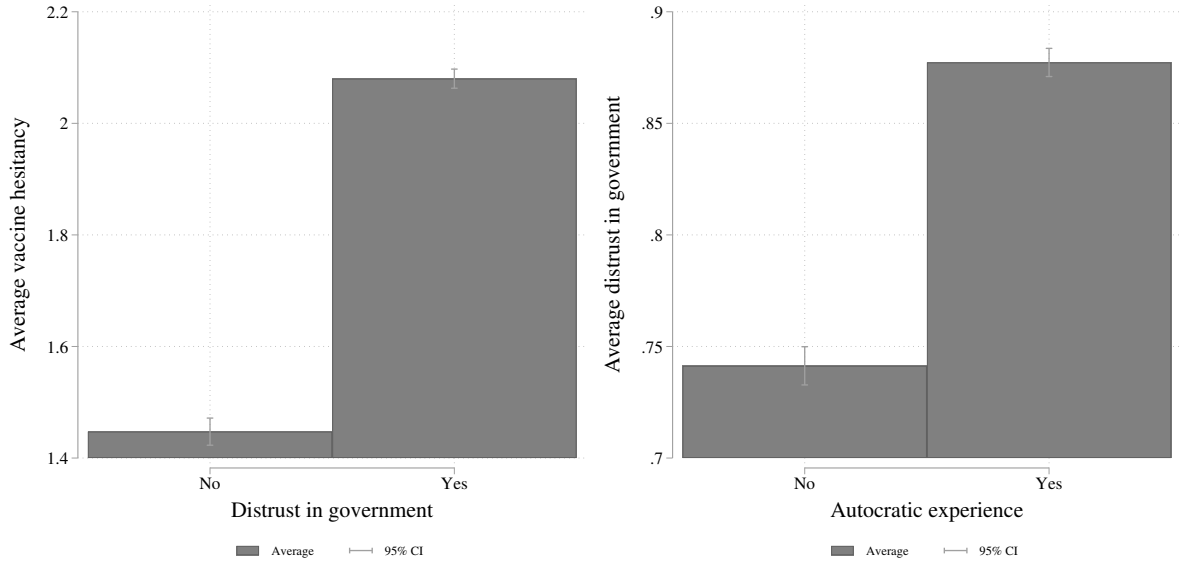
Using the previously introduced data on vaccine hesitancy and autocratic experience, we plot the relationship between these two variables and distrust in government. The results are displayed in Figure 5. The left panel shows the average vaccine hesitancy by groups of people who indicated that they have no distrust (left) and distrust in the government (right). The figure clearly shows that people who distrust the government are also significantly more hesitant to vaccine uptake. Moving to the right panel and the correlation between autocratic experience and distrust in government, we find a similar correlation. In this figure we grouped all respondents with autocratic experience in one category (yes), and all respondents without any experience of autocratic rule in the other category (no). The figure demonstrates that distrust in government is significantly higher in people with autocratic experiences.

In conclusion, we find a strong correlation between autocratic experience and distrust in government, as well as a robust correlation between distrust in government and vaccine hesitancy. These findings support our propositions and align with the assumed micro-foundation of the previously established correlation between autocratic experience and vaccine hesitancy. As a last step, we now aim to investigate whether autocratic experience does not only impact distrust in government in general but also has a specific impact on the trust in the health care system.

4.4 Trust in Health Care

In this final data section, we provide insights into a specific form of trust: trust in health care. In the preceding sections, we presented descriptive evidence on the correlation between autocratic experience and vaccine hesitancy, which is rooted in a lack of trust in government. However, in line with previous research, we argue that it is not only trust in government in general but also distrust in healthcare services provided by the state. Unfortunately, the Eurobarometer 94.3 does not include a question specifically related to trust in healthcare. Therefore, we draw on the data from the Gallup World Poll (GWP) , which contains the following question: “In (this country), do you have confidence in each of the following, or not? How about health care?” with the possible answers “yes” and “no” as well as the possibilities to refuse or answer “don’t know”. We use this

Figure 5: Average vaccine hesitancy and distrust with autocratic experience



Notes: The figure shows the correlation between the average vaccine hesitancy, distrust in government as well as autocratic experience in our 33 sample countries. The data on trust in government comes from the Eurobarometer 94.3 . The variable ranges from 0 (tend not to distrust government) to 1 (tend to distrust government). The data on regimes types comes from Lührmann et al., 2018/the V-Dem dataset v11. The data on vaccine hesitancy comes from the Eurobarometer 94.3 . The variable ranges from 1 (a respondent wanting to be vaccinated as soon as possible) to 4 (a respondent never wanting to be vaccinated).

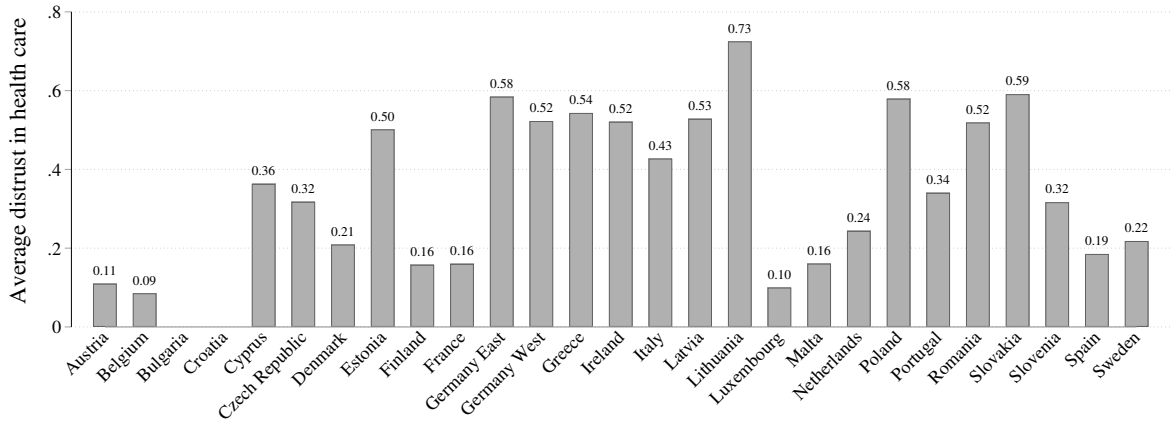
question on confidence in the health care system as a proxy for trust and recode the answers to 1 indicating distrust and 0 indicating no distrust.[2]

Using the question from the GWP, we find an average distrust in the health care system of 0.33 with a standard deviation of 0.47 and a median of 0. The average distrust ranges from 0.09 in Belgium to a staggering 0.73 in Lithuania. Figure 6 plots the average distrust in the health care system in our 33 sample countries, although data is missing for Bulgaria and Croatia. The figure further underscores considerable variance in our sample, with some countries displaying considerable levels of distrust, while other countries exhibit virtually no distrust.

After identifying the variance in distrust in the health care system, we again seek to explore whether autocratic experiences are correlated with this specific form of distrust. In order to analyze this correlation, we group the respondents according to those who have lived under autocratic rule and those who have never lived in an autocracy. Unfortunately, the GWP does not contain a question on the place of birth. Therefore, we cannot exclude respondents who moved to the country they are residing in at the time of the survey. While we estimate that this should not substantially bias our data, we acknowledge this imprecision in our analysis. Using the same coding approach for autocratic experiences as previously described based on the regime type changes from the V-Dem dataset , the results are presented in Figure 7.

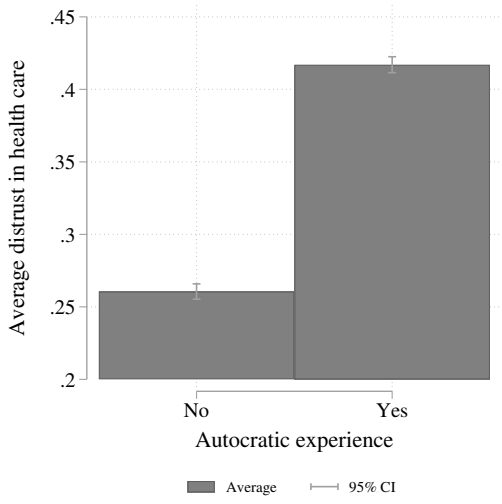
[2]The question was asked at different points in time in our sample countries. 2010: Austria, Portugal; 2009: Cyprus, Denmark, France, Germany East, Germany West, Ireland, Italy, Luxembourg, Malta, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, United Kingdom; 2008: Belgium, Estonia, Finland, Iceland, Latvia, Lithuania, Netherlands, Norway; 2007: Czech Republic, Greece; 2006: Slovakia.

Figure 6: Average distrust in health care by countries



Notes: The figure shows the average distrust in health care in our 33 sample countries. The data on trust in health care comes from the Gallup World Poll (GWP) . The variable ranges from 0 (no distrust in health care) to 1 (distrust in health care). We calculate the simple mean by country.

Figure 7: Average distrust in health care with autocratic experience



Notes: The figure shows the correlation between the average distrust in health care and autocratic experience in our 33 sample countries. The data on trust in health care comes from the Gallup World Poll (GWP) . The variable ranges from 0 (no distrust in health care) to 1 (distrust in health care). The data on regimes types comes from Lührmann et al., 2018/the V-Dem dataset v11.

The figure shows that the average distrust in the healthcare system is significantly and substantially larger in the group of respondents with autocratic experiences than in the group of respondents without any autocratic experiences. This finding is in line with the descriptive evidence provided in the previous sections and supports the specific pathway through which autocratic experiences relate to vaccine hesitancy.

In conclusion, the descriptive evidence presented in this section supports the hypotheses derived from our formal model. Specifically, using the Eurobarometer survey, we find a substantial correlation between autocratic experiences and vaccine hesitancy at the individual level. This correlation is primarily mediated by a lack of trust in government, which is rooted in the autocratic experience and is in turn correlated with vaccine hesitancy. Using the GWP survey data further allowed us to show that respondents with autocratic experiences also hold substantial distrust in their respective healthcare systems. This finding further supports our formal model and the specific argument that autocratic experiences impact not only trust in government in general but also trust in health care systems in particular.

5 Estimation

Having established initial descriptive insights into the data, we now proceed to a more robust analysis of the three hypotheses derived above. Our analysis focused on three main variables: vaccine hesitancy, autocratic experience, and distrust in government. Using these three variables, our analysis is split into two sections. In the main section, we test three hypotheses with three models that regress vaccine uptake on autocratic experience, and also regress distrust in government on autocratic experience and vaccine uptake, respectively. In the robustness check section, we take an exploratory perspective and investigate the specific types of autocratic experience, i.e., age at the time of making the autocratic experience and duration of the autocratic experience, in order to identify possible drivers of our results. The following sections describe our variables as well as estimation methods in greater detail.

5.1 Variables

The main variable of interest in our analysis is individual vaccine hesitancy. As described above, in the Eurobarometer dataset, the variable runs from 1 (indicating that a person is already vaccinated) to 5 (indicating that a person never wants to be vaccinated). In order to avoid any distortions from this, in our robustness checks, we exclude respondents who have already been vaccinated. The second variable of interest is distrust in government. It is essential to note that the Eurobarometer provides two possible answers to the question on trust in the government: ”tend to trust” and ”tend not to trust”. In this study, we label the latter response as ”distrust.” The third and final variable central to our analysis is individual autocratic experience. In our analysis, we simply divide respondents into two groups: 1) Respondents with an autocratic experience and 2) respondents without an autocratic experience. This approach does not distinguish between different age cohorts or the duration of autocratic experience. Nonetheless, in the second section

of the analysis, we also run regressions that use the actual number of years lived under autocracy and create different groups based on age cohorts.

In addition to these three main variables, we include several individual-level control variables from the Eurobarometer that may be correlated with distrust, autocratic experience, and vaccine hesitancy. These control variables can be categorized into three groups. First, we include *demographic* variables, namely age in years, a dummy variable on gender (in which 1 represents respondents who self-identify as female), and education in years. Second, we introduce variables related to the perception of an individual's *socio-economic status*. These are variables on life dissatisfaction (1 very satisfied, 2 fairly satisfied, 3 not very satisfied, 4 not at all satisfied), economic well-being measured via a respondent's difficulties paying bills (1 most of the time, 2 from time to time, 3 almost never/never), as well as social class (1 working, 2 lower middle, 3 middle, 4 upper middle, 5 higher), and individual left-right self-placement from 1 (left) to 10 (right) on a general policy dimension.

On the country-level, we control for vaccine availability with a dummy variable indicating whether the vaccine was available for a majority of the population. We do so by using the vaccination availability data from the Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2022). The OxCGRT ranks the availability of vaccinations from 0 (no population groups receive vaccinations) over 1 (vaccines are available to some) and 2 (vaccines are available to anyone over the age of 16) to 3 (vaccines are additionally available to infants). Based on this variable, we introduce a *vaccine availability* dummy, with a 0 indicating no availability for the general population (OxCGRT coding 0 and 1) and availability to the entire population (OxCGRT coding 2 and 3).

5.2 Method

Our main focus is on three correlations: distrust in government as a function of individual autocratic experience, vaccine hesitancy as a function of distrust in government, and vaccine hesitancy as a function of individual autocratic experience. Due to the binary coding of the distrust variable, the first of our models employs a logistic regression. The vaccine hesitancy variable can take multiple values that can be put in an order; although the gaps between the values are not necessarily equally spaced, we treat the variable as continuous in order to run a linear regression in the second and third models. Due to the heterogeneous nature of the sample, all of our models include robust standard errors clustered at the country-level. The first model on distrust on government and autocratic experience is defined by:

$$Ln(\frac{Distrust_{i,c}}{1 - Distrust_{i,c}}) = \alpha + \beta_1 AutExp_{i,c} + \beta_2 \chi^j_{i,c} + \varepsilon_{i,c}, \tag{7}$$

where $Distrust$ describes the distrust in government of an individual i in a country c that is regressed the individual autocratic experience ($AutExp$). Further, χ describes a vector of the control variables (j) outlined above.

In the second model, the vaccine hesitancy variable is regressed on the distrust in government. We use an OLS regression on the assumption of linearity. The baseline model for the explanatory variable (distrust in government) is defined by:

$$Hesitancy_{i,c} = \alpha + \beta_1 Distrust_{i,c} + \beta_2 \chi^j_{i,c} + \varepsilon_{i,c}, \tag{8}$$

where $Hesitancyt$ describes the indicated vaccine hesitancy of an individual i in a country c that is regressed on the explanatory variable, i.e., the distrust in government of an individual ($Distrust$). Further, χ describes a vector of the control variables (j) outlined above.

In the third model, we employ an instrumental variable approach with a two-stage least square (2SLS) regression to isolate the correlation between the vaccine hesitancy and the individual autocratic experience. As an instrument, we employ the distance of the NUTS-2 region a survey respondent lives in to London, UK based on Kurbucz and Katona (2022). Regarding the instrumental variable assumption, we argue on the one hand that the London distance will be correlated with the individual autocratic experience since a closer distance to London will be correlated with US and UK influence post-WWII and therefore a higher probability of democracy. On the other hand, it is not plausible that vaccine hesitancy is correlated with distance to London. This also goes for a direct correlation as we all as an indirect correlation since we control for the availability of vaccines. Additionally, both a Durbin and a Wu–Hausman tests indicate endogeneity of the instrument. A visual inspection of the correlation between the error term of the main regression equation and the instrument variable indicates no substantial correlation between both terms. Based on this, we deem the application of a instrumental variable approach fitting. The first stage of our instrumental variable estimation is defined by:

$$X_{i,c} = \pi_0 + \pi_1 Distance_{i,c} + \mu_{i,c}, \tag{9}$$

where $Distance$ is the instrument, i.e. distance to London, of an individual (i) in a country (c) and μ is the error term in the first stage. The instrumental variable estimation involves substituting the predicted values of $\hat{X}$ from the first stage into the main regression equation. This second stage is defined by:

$$Hesitancy_{i,c} = \alpha + \omega \hat{X}_{i,c} + \beta \chi^j_{i,c} + \nu_{i,c}, \tag{10}$$

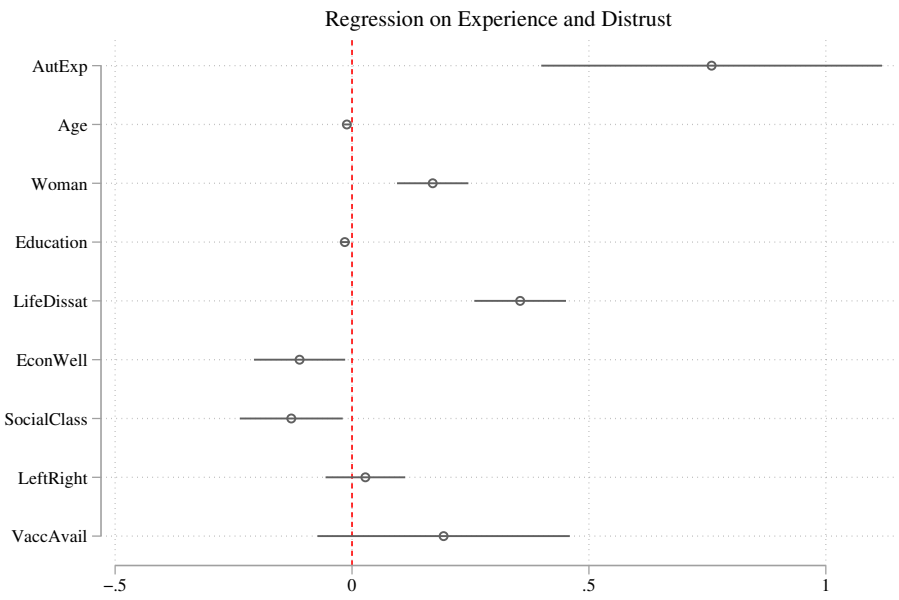
where $Hesitancy$ denotes an individual's (i) vaccine hesitancy in a country (c). The hesitancy is regressed on the instrumental variable estimates α and ω with $\hat{X}$ representing the predicted values from the first stage regression. Additionally, χ again denotes a vector of the control variables (j).

5.3 Results

The first regression analysis explores the correlation between an individual's autocratic experience and their distrust in the government. The results of the analysis with the fully specified are

displayed in the coefficient plot depicted in Figure 8 (see Table A1). The plot reports a positive and statistically significant coefficient of the autocratic experience variable. This indicates a positive correlation between autocratic experience and the probability of individual distrust in the government. Moving to the control variables, we find a negative correlation between age and economic well-being, and social-class as well as a positive correlation with life dissatisfaction. These findings are in-line with theoretical considerations on the additional determinants of government distrust. In total, the coefficient plot indicates a positive and statistically significant correlation between an individual's autocratic experience and their likelihood of distrusting their government with the additional control variables supporting the plausibility of the model.

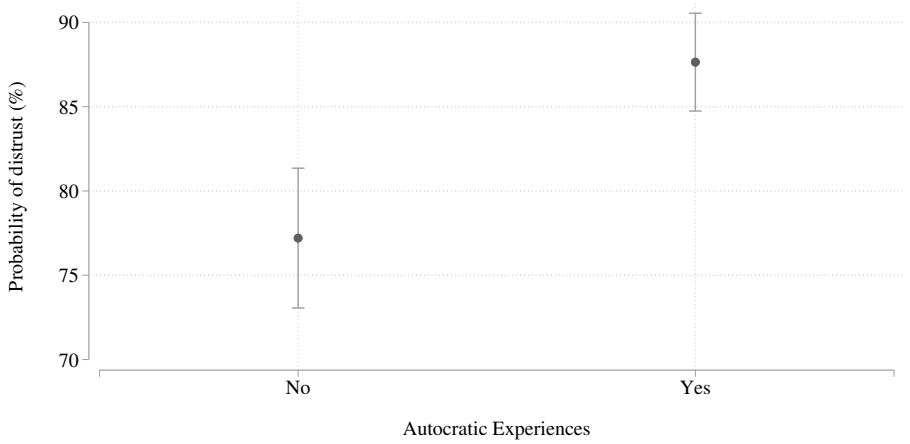
Figure 8: Coefficient plot: Autocratic experience and distrust



To move beyond mere analysis of the statistical significance of the correlation between autocratic experience and distrust in government, we calculate the marginal effects for the predicted probability of government distrust, depending on an individual's autocratic experience. As for the dummy variables, we calculate the predicted probability for men (i.e. variable Woman=0). The results of the analysis are displayed in Figure 9. The figure shows that the predicted probability of an individual with an autocratic experience distrusting the government is substantially higher than for a person without an autocratic experience. In substantial terms, the predicted probability for an individual without an autocratic experience is about 75%, while the predicted probability of government distrust for an individual with autocratic experience is around 85%, i.e. 10 percentage points higher, which corresponds with around 0.3 standard deviations. Based on this, we conclude that our empirical analysis supports the first hypothesis in that an autocratic experience increases an individual's probability of government distrust.

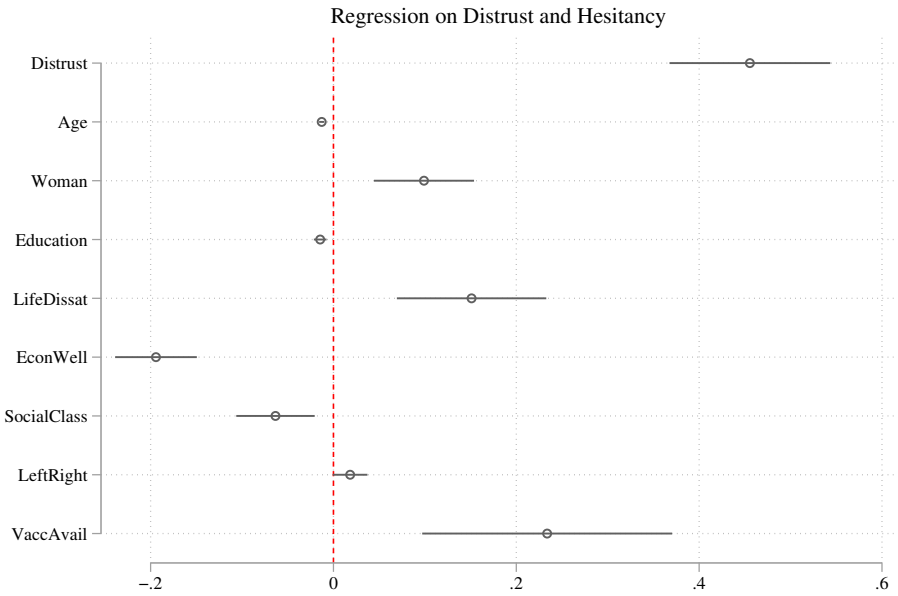
In the next step, we analyze distrust as a determinant of vaccine hesitancy, the results of which are presented in Figure 10 (see Table A2). The plot reports the analysis, in which the 4-point vaccine hesitancy scale variable is regressed on the government distrust variable. The

Figure 9: Marginal effects: Autocratic experience and distrust



coefficient is positive and statistically significant. Focusing on the control variables, decreasing age as well as decreasing education, lower social class, and economic distress increase the vaccine hesitancy of individuals. This finding is in line with previous research on vaccine hesitancy in younger people and with the impact of education (Fisher et al., 2020; Kreps et al., 2020; Reiter et al., 2020). Additionally, women in our sample display a higher vaccine hesitancy with life dissatisfaction and a right-wing ideology also being correlated with vaccine hesitancy. Lastly, we also find a correlation between hesitancy and the availability of vaccines. In total, the analysis supports our hypothesis on the correlation between distrust and vaccine hesitancy with the control variables further supporting the validity of our model.

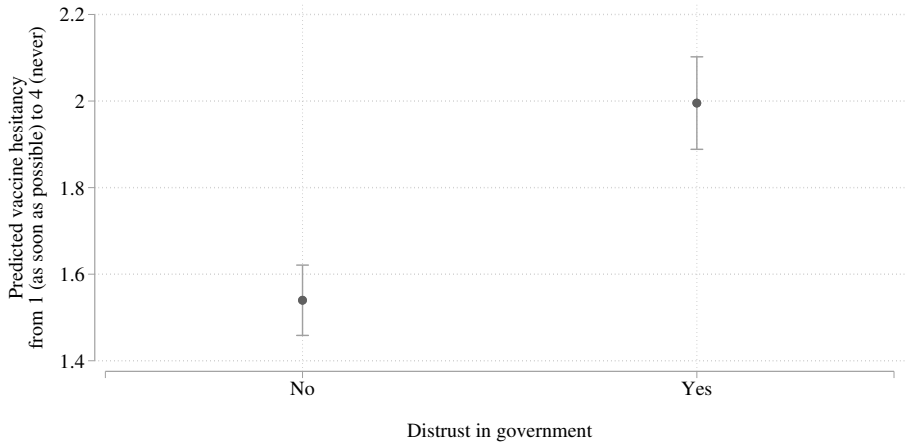
Figure 10: Coefficient plot: Distrust and vaccine hesitancy



Turning to the substantial relevance of the results, we again calculated the marginal effects of the predicted vaccine hesitancy, with the model specification of a man (i.e. variable Woman=0).

The predicted marginal effects for individuals who have trust in their governments and those who distrust their governments are displayed in Figure 11. The figure illustrates a considerable difference between these two groups. While the average vaccine hesitancy of individuals without distrust, i.e., trusting individuals, is 1.5, the average hesitancy of distrusting individuals is roughly 2.0, representing a difference of about 0.5 standard deviations.

Figure 11: Marginal effects: Distrust and vaccine hesitancy



The third regression analysis displayed in Figure 10 (see Table A3) focuses on autocratic experience as a determinant of vaccine hesitancy with an instrumental variable approach. In this analysis, we regress vaccine hesitancy on the autocratic experience dummy variable with the distance to London as the instrument of the 2SLS regression. The coefficient of the variable is positive and statistically significant. The control variables report a similar correlation and statistical significance as in the first regression model, indicating that the models are robust against the usage of different combinations of variables. Additionally, the results of the control variables again lend further plausibility to our model. From this we conclude, that we also find support for our third hypothesis according to which individual autocratic experience is positively correlated with vaccine hesitancy.

To again interpret the findings in substantial terms, we provide the marginal effects of the predicted vaccine hesitancy, assuming a scenario of men (i.e. variable Woman=0). The results are displayed in Figure 13. According to the figure, the predicted vaccine hesitancy on average increases by 0.6 from around 1.6 to 2.2, when moving from a scenario of an individual with no autocratic experience to an individual with autocratic experience in their lifetime. This change in predicted vaccine hesitancy corresponds to an increase of again a little over 0.5 standard deviations.

In conclusion, our empirical analysis provides considerable support for the three hypotheses derived above. We established positive and statistically significant correlations between autocratic experiences and distrust in government, as well as between distrust in government and vaccine hesitancy. Lastly, we also found a positive and statistically significant correlation between autocratic experience and vaccine hesitancy. With respect to the substantial relevance of our results, the predicted effects showed a considerable and meaningful size.

Figure 12: Coefficient plot: Vaccine uptake and autocratic experience

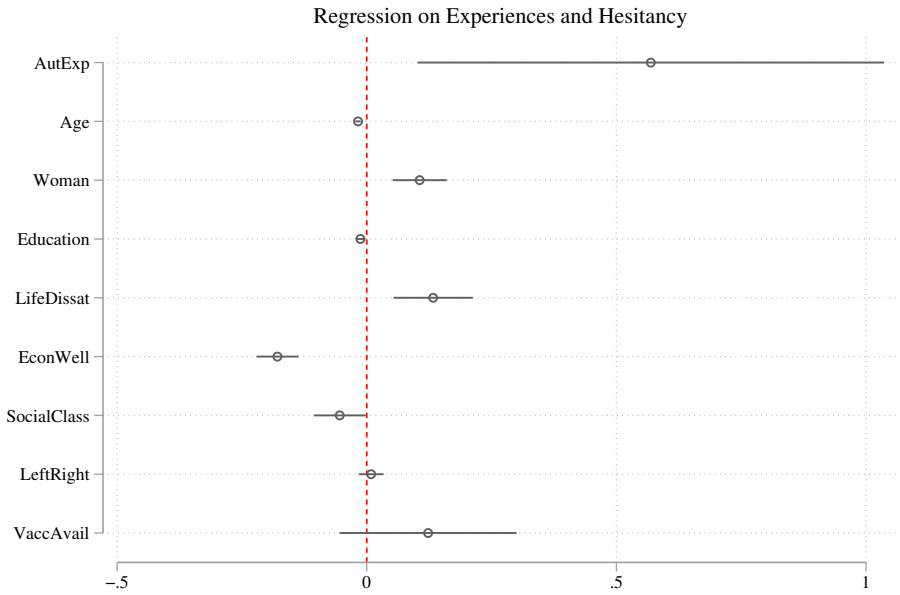
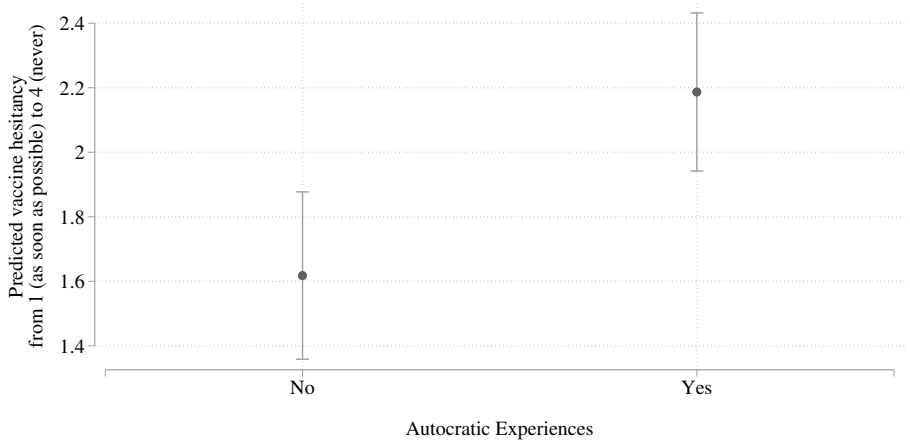


Figure 13: Marginal effects: Vaccine uptake and autocratic experience



5.4 Robustness Checks

Our findings are also robust against alternative operationalizations of the main variables. First, we re-run our instrumental variable regression with a generalized method of moments (GMM) estimator (see Table A4) with no impact on the results of our models. Second, we also ran a simple OLS regression without an instrumental variable (see Table A5), which also does not change the results of our analysis. However, the size of the coefficients are about half the size as in the IV regression. Third, we subdivided the autocratic experience variable into four different cohorts (children, youths, adults, and seniors) with the reference category being people without an autocratic experience. The results are displayed in Table A6. The fully specified model reports, as expected, a statistically significant correlation between autocratic experience and vaccine hesitancy for youths and adults. However, the coefficient for the cohort that experienced autocratic rule as children is also statistically significant and only marginally smaller than the one of the other two cohorts. This finding again underscores the previously mentioned long shadow of autocratic rule since value formation only takes place in the later stages of childhood development (Pöge, 2020).

Hence, the correlation suggests that older generations pass down their autocratic experience to younger generations in the form of intergenerational trauma (Connolly, 2011). Interestingly, the coefficient for seniors is negative and statistically significant, indicating a negative correlation with vaccine hesitancy. We can only speculate about the theoretical implications but propose that this is the case because senior citizens have a different threat perception due to their age and, therefore have a higher expected utility from the vaccine. Additionally, a large number of seniors have already been excluded due to their early eligibility to receive the vaccine.

Additionally, we operationalize the autocratic experience variable as the real number of years lived under autocratic rule. Based on the descriptive evidence, we already know that the correlation does not change much after the first 4 years. Nonetheless, we re-run the 2SLS IV regression with the real number of years under autocracy. The coefficient displayed in Table A7 is positive and statistically significant, indicating a positive relationship between the duration of the autocratic experience and the degree of vaccine hesitancy. Lastly, Table A8 reports the results for the 2SLS IV regression analysis of the alternative vaccine hesitancy variable, i.e. the variable that includes the category ”I have already been vaccinated”. Using this alternative variable has no effect on the size or statistical significance of the coefficient, as the correlation between autocratic experience and vaccine hesitancy remains positive and statistically significant.

6 Conclusion

This article explores the relationship between vaccine hesitancy and individuals' autocratic experience with a focus on individual distrust in governments. This investigation was conducted against the backdrop of understanding the vast variations in vaccination rates between countries. To address this question, we developed a theoretical model of the ways in which autocratic experience shapes individual distrust and ultimately influences vaccine hesitancy. In detail, we argued that the utility function of an individual for vaccine uptake is strongly dependent on

information search costs and the probability that the government's vaccine efficacy message is truthful. In evaluating the efficacy of governmental vaccine messaging, considerations regarding the history of a state and its reputation matter greatly for the individual utility function. Arguably, autocratic regimes are more prone to deceiving the public and, on average, to creating a long-lasting spell of distrust towards government messages. From our formal model, we derive three hypotheses: (1) Autocratic experience increases the probability of distrust in the government. (2) Distrust in the government increases the probability of vaccine hesitancy. (3) Autocratic experience increases the probability of vaccine hesitancy.

We tested the empirical implications of our formal model in a sample of 33 developed and developing democratic European countries, using individual-level data from February and March 2021. The main variables of interest are individual vaccine hesitancy, autocratic experience, and distrust in the current government. Based on descriptive evidence, we were able to show that there is considerable variance in vaccine hesitancy between countries. Within the context of autocratic experience, we find a strong relationship between vaccine hesitancy and the number of years an individual has lived under autocratic rule. This relationship is especially pronounced in the first four years of autocratic experience and only marginally increases with additional years. This relationship is in line with considerations that a shorter autocratic experience will not have a substantially lesser impact on an individual than a long one. In addition, we also established that distrust in the current government is stronger in individuals with autocratic experiences and is associated with higher vaccine hesitancy on average. Furthermore, we demonstrated that autocratic experience is associated with distrust in health care, which additionally supports our proposed mechanism. Moving beyond the descriptive evidence, we ran several regression models to test the three hypotheses. The results supported our empirical expectations, with the calculated marginal effects indicating a substantial correlation between autocratic experience and predicted vaccine hesitancy.

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Appendix

Table A1: Autocratic Experience as a Determinant of Distrust

VARIABLES	(1) Distrust	(2) Distrust	(3) Distrust	(4) Distrust
AutExp	0.914***	0.980***	0.775***	0.759***
	(0.20)	(0.20)	(0.18)	(0.18)
Age		-0.014***		-0.011***
		(0.00)		(0.00)
Woman		0.171***		0.170***
		(0.04)		(0.04)
Education		-0.024***		-0.015***
		(0.01)		(0.01)
LifeDissat			0.374***	0.355***
			(0.05)	(0.05)
EconWell			-0.159***	-0.111**
			(0.05)	(0.05)
SocialClass			-0.156***	-0.128**
			(0.06)	(0.06)
LeftRight			0.026	0.028
			(0.04)	(0.04)
VaccAvail				0.193
				(0.14)
Constant	1.053***	2.223***	1.090***	1.451***
	(0.17)	(0.23)	(0.34)	(0.52)
Observations	20,393	20,393	20,393	20,393
Pseudo R-squared	0.0314	0.0441	0.0516	0.0607

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A2: Distrust as Determinants of Vaccine Hesitancy

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
Distrust	0.633***	0.569***	0.528***	0.456***
	(0.05)	(0.05)	(0.04)	(0.04)
Age		-0.014***		-0.013***
		(0.00)		(0.00)
Woman		0.106***		0.099***
		(0.03)		(0.03)
Education		-0.023***		-0.014***
		(0.00)		(0.00)
LifeDissat			0.164***	0.151***
			(0.04)	(0.04)
EconWell			-0.232***	-0.194***
			(0.03)	(0.02)
SocialClass			-0.087***	-0.063***
			(0.02)	(0.02)
LeftRight			0.019**	0.018*
			(0.01)	(0.01)
VaccAvail				0.234***
				(0.07)
Constant	1.447***	2.671***	1.938***	2.429***
	(0.06)	(0.16)	(0.13)	(0.26)
Observations	19,662	19,662	19,662	19,662
R-squared	0.053	0.111	0.109	0.170

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A3: Autocratic Experience as a Determinant of Vaccine Hesitancy (IV 2SLS)

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
AutExp	0.996***	0.842***	0.654**	0.569**
	(0.25)	(0.23)	(0.25)	(0.24)
Age		-0.021***		-0.018***
		(0.00)		(0.00)
Woman		0.110***		0.106***
		(0.03)		(0.03)
Education		-0.018***		-0.013***
		(0.01)		(0.00)
LifeDissat			0.140***	0.133***
			(0.04)	(0.04)
EconWell			-0.240***	-0.179***
			(0.03)	(0.02)
SocialClass			-0.053	-0.054**
			(0.03)	(0.03)
LeftRight			0.011	0.009
			(0.01)	(0.01)
VaccAvail			0.107	0.123
			(0.10)	(0.09)
Constant	1.457***	2.926***	1.893***	2.907***
	(0.15)	(0.21)	(0.19)	(0.25)
hline Observations	19,662	19,662	19,662	19,662
R-squared		0.071	0.056	0.139

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4: Autocratic Experience as a Determinant of Vaccine Hesitancy (IV GMM)

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
AutExp	0.996***	0.842***	0.654**	0.569**
	(0.25)	(0.23)	(0.25)	(0.24)
Age		-0.021***		-0.018***
		(0.00)		(0.00)
Woman		0.110***		0.106***
		(0.03)		(0.03)
Education		-0.018***		-0.013***
		(0.01)		(0.00)
LifeDissat			0.140***	0.133***
			(0.04)	(0.04)
EconWell			-0.240***	-0.179***
			(0.03)	(0.02)
SocialClass			-0.053	-0.054**
			(0.03)	(0.03)
LeftRight			0.011	0.009
			(0.01)	(0.01)
VaccAvail			0.107	0.123
			(0.10)	(0.09)
Constant	1.457***	2.926***	1.893***	2.907***
	(0.15)	(0.21)	(0.19)	(0.25)
Observations	19,662	19,662	19,662	19,662
R-squared		0.071	0.056	0.139

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A5: Autocratic Experience as a Determinant of Vaccine Hesitancy

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
AutExp	0.343**	0.429***	0.246**	0.263**
	(0.12)	(0.10)	(0.11)	(0.10)
Age		-0.018***		-0.015***
		(0.00)		(0.00)
Woman		0.117***		0.110***
		(0.03)		(0.03)
Education		-0.022***		-0.015***
		(0.00)		(0.00)
LifeDissat			0.177***	0.158***
			(0.03)	(0.04)
EconWell			-0.239***	-0.190***
			(0.03)	(0.02)
SocialClass			-0.088***	-0.065***
			(0.03)	(0.02)
LeftRight			0.017*	0.016
			(0.01)	(0.01)
VaccAvail				0.196**
				(0.07)
Constant	1.787***	3.077***	2.241***	2.841***
	(0.10)	(0.18)	(0.16)	(0.28)
Observations	19,662	19,662	19,662	19,662
R-squared	0.025	0.106	0.086	0.155

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A6: Autocratic Experience as a Determinant of Vaccine Hesitancy (Age Cohorts)

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
Children (0-14)	0.398***	0.329***	0.314**	0.218***
	(0.13)	(0.08)	(0.12)	(0.08)
Youths (15-24)	0.450***	0.483***	0.331**	0.314***
	(0.14)	(0.11)	(0.13)	(0.10)
Adults (25-65)	0.259*	0.557***	0.159	0.340**
	(0.14)	(0.12)	(0.11)	(0.13)
Age		-0.020***		-0.017***
		(0.00)		(0.00)
Woman		0.113***		0.108***
		(0.03)		(0.03)
Education		-0.022***		-0.015***
		(0.00)		(0.00)
LifeDissat			0.179***	0.147***
			(0.03)	(0.04)
EconWell			-0.232***	-0.191***
			(0.03)	(0.02)
SocialClass			-0.090***	-0.062**
			(0.03)	(0.02)
LeftRight			0.016	0.015
			(0.01)	(0.01)
VaccAvail				0.193**
				(0.07)
Constant	1.787***	3.189***	2.233***	2.939***
	(0.10)	(0.17)	(0.15)	(0.28)
Observations	19,461	19,461	19,461	19,461
R-squared	0.029	0.114	0.089	0.160

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A7: Autocratic Experience as a Determinant of Vaccine Hesitancy (Real Duration)

VARIABLES	(1) Hesitancy	(2) Hesitancy	(3) Hesitancy	(4) Hesitancy
AutYears	0.042***	0.034***	0.027**	0.022**
	(0.01)	(0.01)	(0.01)	(0.01)
Age		-0.029***		-0.023***
		(0.01)		(0.01)
Woman		0.064**		0.068**
		(0.03)		(0.03)
Education		-0.018***		-0.014***
		(0.01)		(0.00)
LifeDissat			0.125***	0.120**
			(0.04)	(0.05)
EconWell			-0.289***	-0.203***
			(0.04)	(0.03)
SocialClass			-0.041	-0.049*
			(0.04)	(0.03)
LeftRight			0.015	0.011
			(0.01)	(0.01)
VaccAvail			0.086	0.115
			(0.11)	(0.09)
Constant	1.436***	3.414***	2.014***	3.314***
	(0.15)	(0.23)	(0.21)	(0.38)
Observations	20,226	20,226	20,226	20,226
R-squared		0.043		0.121

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A8: Autocratic Experience as a Determinant of Vaccine Hesitancy (Alt. Hesitancy Coding)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	HesitancyAlt	HesitancyAlt	HesitancyAlt	HesitancyAlt	HesitancyAlt
AutExp	0.951***	0.802***	0.599**	0.518**	
	(0.24)	(0.22)	(0.24)	(0.23)	
Age		-0.021***		-0.018***	
		(0.00)		(0.00)	
Woman		0.086***		0.082***	
		(0.03)		(0.03)	
Education		-0.018***		-0.013***	
		(0.01)		(0.00)	
LifeDissat			0.149***	0.142***	
			(0.04)	(0.04)	
EconWell			-0.250***	-0.186***	
			(0.03)	(0.02)	
SocialClass			-0.055*	-0.056**	
			(0.03)	(0.03)	
LeftRight			0.010	0.008	
			(0.01)	(0.01)	
VaccAvail			0.115	0.131	
			(0.09)	(0.08)	
Constant	1.423***	2.945***	1.874***	2.919***	
	(0.14)	(0.21)	(0.20)	(0.25)	
Observations	20,226	20,226	20,226	20,226	
R-squared		0.071	0.057	0.137	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1