

Discrimination against mobile European Union citizens before and during the first COVID-19 lockdown: Evidence from a conjoint experiment in Germany

European Union Politics

2021, Vol. 22(4) 741–761

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DOI: 10.1177/14651165211037208

journals.sagepub.com/home/eup



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Abstract

One of the greatest achievements of the EU is the freedom of movement between member states offering citizens equal rights in EU member states. EU enlargement and the

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COVID-19 pandemic allow for a critical test of whether EU citizens are indeed treated equally in practice. We test preferential treatment of EU citizens in two hypothetical choice experiments in Germany at two different time points: in the period before and during the COVID-19 pandemic lockdown. Theories of responses to threat suggest that the COVID-19 crisis should increase discrimination against mobile EU citizens. While our findings reveal sizeable discrimination based on nationality and language proficiency of mobile EU citizens, the findings also suggest that, contrary to expectations, discrimination did not increase in the initial COVID-19 crisis period.

Keywords

COVID-19, discrimination, mobile EU citizens, conjoint experiment, pandemic

Introduction

The unconstrained free movement of citizens between the European Union (EU) member states provides rights to mobile EU citizens and has sparked political polarisation.¹ The rights are both celebrated as an extraordinary achievement and derided. Brexit, heated debates about welfare tourism, and referenda like the Swiss initiative to restrict free movement (Begrenzungsinitiative) from September 2020 stand witness to this. In formal terms, EU citizens enjoy access to welfare benefits and, if they reside in an EU member state, the right to vote in local elections. However, the extent to which mobile EU citizens can exercise their rights effectively and efficiently often depends on how they are treated by the population, in general, and frontline bureaucrats in particular.

We put the idea of the freedom of movement and equal treatment to a twofold test. In a first step, we analyse preferential treatment of EU citizens, i.e., discriminatory attitudes, by asking general population survey respondents to act as bureaucrats. In our bureaucratic work tasks that take the shape of a hypothetical choice experiment, respondents have to decide about mobile EU citizens' applications to exercise their right to vote in local elections and receive welfare benefits. In the experiments, respondents choose between several pairs of EU citizens applying for welfare benefits and information on local voter registration. Mobile EU citizens are thereby characterised by nationality, language skills, gender, age and profession.²

In a second step, we seize the opportunity of analysing the potential effect the coronavirus disease 2019 (COVID-19) pandemic had on the differential treatment of mobile EU citizens, based on an identical follow-up survey conducted during the German lockdown in April 2020. Since the outbreak of COVID-19 in Europe, right-wing populist movements in Europe have actively tried to exploit the COVID-19 pandemic to activate nationalist sentiments and push for border and migration control. In Germany and Austria, the *Alternative for Germany* (AfD) and the *Freedom Party for Austria* (FPÖ), both known for their anti-immigrant rhetoric, were the leading critiques of government action during the pandemic. These efforts were spurred by several instances in which COVID-19 outbreaks among migrant workers in agriculture and the meatpacking industry in Germany attracted

media attention and politicised working conditions and cross-border mobility. The question is whether these features of the COVID-19 crisis exacerbate differential treatment of mobile EU citizens among the general population. We address this question by analysing the short-term effects of the COVID-19 outbreak on discrimination against EU citizens who are mobile between countries, using the example of Germany.

From a psychological perspective, the crisis may have created a fertile ground for xenophobia and nationalist tendencies due to increased feelings of fear, threat and anxiety, possibly resulting in discriminating behaviour. Pandemics create fear and realistic threats towards society and individuals (Kachanoff et al., 2020). Fears of infection or overburdened healthcare systems are accompanied by existential concerns due to economic losses. Such sociotropic, i.e., society related, and egocentric threats are among the key predictors of racial and ethnic prejudice, as well as discrimination (Gorodzeisky and Semyonov, 2015; Stephan and Stephan, 2000). Perceived and realistic threats trigger intergroup bias leading to preferential treatment of one's in-group, for instance, fellow citizens or culturally similar groups (Allport, 1954; Pereira et al., 2010), which may ultimately lead to more discriminatory behaviour. In our context, we expect that preferred treatment of culturally and linguistically similar over culturally and linguistically dissimilar EU citizens increases during the COVID-19 crisis.

In line with our expectations, we find that mobile EU citizens from a more culturally distant country, namely Romania, are less likely to receive preferential treatment than EU citizens from a culturally closer country, here the Netherlands. On the same note, EU citizens with good language skills are more likely to receive preferential treatment than EU citizens with bad language skills. However, this discrimination was true both for the onset and the peak of the crisis, meaning that we did not find that the COVID-19 crisis increased existing levels of preferential treatment. Greater exposure to the crisis does not or only marginally affect discrimination patterns against mobile EU citizens, at least in the short term. We also examined individual-level variation: we expected greater economic and medical vulnerability to COVID-19 to fuel discrimination through heightened threat. However, we did not find evidence to confirm this hypothesis during the crisis.

Discrimination against mobile EU citizens: theoretical expectations

Mobile EU citizens enjoy extraordinary rights in moving between member state countries. They can move to other European countries to work and study without a visa and are granted rights to access certain welfare benefits and vote in local elections. This is true for all EU citizens, whether they are, for example, from France, Denmark, the Netherlands or Romania. However, for different EU citizens having the same rights on paper does not correspond to being treated equally in practice. Biased behaviour is mostly known as discrimination and may flow, for example, from appearance, nationality, level of integration or socio-economic status. We define discrimination as the preferential treatment of persons or groups based on their specific characteristics and group

belonging (Dovidio et al., 2010). In line with Allport (1954: 51), discrimination denies ‘individuals or groups of people equality of treatment which they may wish’, or in our case, which they have the right to receive. Discriminatory behaviour (Correll et al., 2010) often originates in attitudes, such as prejudice and anti-immigrant sentiments, and is driven by in-group favouritism.

We expect that nationality drives discrimination (Baumgartner et al., 2018; Thomann and Rapp, 2018). There are two basic theoretical processes giving rise to this expectation. First, factors triggering discrimination relate to the perceived integration of particular groups, their conformity or assimilation with the prevailing culture (e.g. their language proficiency), as well as their general phenotypical ‘otherness’. In this sense, the (perceived) degree of similarity or difference of a particular group may be a source of discrimination or preferential treatment (Helbling and Kriesi, 2014). Second, these differences or similarities may become particularly salient in periods of competition, for instance, when individuals perceive resources, such as welfare benefits or jobs, to be scarce or threatened (Pettigrew, 2016). Competition between nationals and EU immigrants over public services and rights can trigger anti-immigrant attitudes, such as welfare chauvinism (Garand et al., 2017; Helbling and Kriesi, 2014). This can translate into discriminating behaviour. Discrimination can also be a consequence of political competition, given that franchise extensions are more likely in settings where the policy priorities of non-citizens differ the least from those of natives (Vernby, 2013). Adopting the concept of ethnic hierarchies (Hagendoorn, 1995) to the context of EU citizens and following findings from a prior study testing this relationship (Adam et al., 2021) we formulate the following hypothesis:

Hypothesis 1: Culturally more similar and linguistically better integrated EU migrants will encounter a more preferential treatment than more dissimilar EU citizens (*discrimination hypothesis*).

Discrimination in times of crisis

There are good reasons for thinking that the COVID-19 crisis should increase discrimination against mobile EU citizens. Considerable prior research shows that crises in general, and pandemics specifically, influence individual attitudes and behaviour (e.g. Green et al., 2010; Legewie, 2013). Extant research highlights a historical link between the outbreak of a pandemic and the adverse treatment of outgroups (White, 2020). Green et al. (2010) show that perceived disease threat fosters anti-immigrant sentiments. Yet, they cannot show an effect for the real-life disease threat of avian influenza. They argue that this null-finding is due to the absence of a real disease threat as infection risks were low at the time of their study and because the avian flu was transmitted by birds and not humans.

In contrast, the context of the COVID-19 pandemic provides an unprecedented extreme case of realistic disease threat as the whole world was affected by it. Infection rates were notably high at the time of our study, while the rush development of a

treatment was uncertain. Moreover, the pandemic originated in a foreign country, namely China, which may have resulted in an uneasiness towards everyone outside one's national in-group (Devakumar et al., 2020). Therefore, taking traditional explanations of prejudice and discrimination into account, such as social identity theory (Tajfel and Turner, 1979), threat and inter-ethnic competition theories (Hagendoorn, 1995; Pereira et al., 2010; Stephan and Stephan, 2000), the pandemic should trigger increased preferential treatment of individuals and groups that are similar. In the following, we discuss three theoretical contributions that support this claim.

First, a crisis, particularly a pandemic, increases perceptions of threat and real threats. Threat is one of the most important predictors of anti-immigrant attitudes and discriminatory behaviour (Hainmueller and Hopkins, 2014). The group-threat model (among others Blalock, 1967; Blumer, 1958) assumes that the mere presence of an outgroup can trigger feelings of competition over resources (for example jobs, welfare policies or political rights). The perceived threat of competition is particularly pronounced when resources are scarce, for example, during economic crisis general threat perceptions and anti-immigrant sentiments increase (Kuntz et al., 2017). The COVID-19 crisis combines several threats to resources such as health care and welfare benefits (due to the increased economic hardship). At the same time, the crisis combines perceptions of threat on the group-level (*sociotropic threat*, e.g. fear of overburdened healthcare system) and the individual level (*egocentric threat*, e.g. fear to get infected) as well as realistic and symbolic threats. Increased threat should result in a higher likelihood of discrimination against dissimilar EU citizens, such as individuals speaking another language or having different cultural backgrounds.

Second, the COVID-19 crisis is also different from prior crises. Despite its global impact, proposed solutions to the first wave of the COVID-19 pandemic were primarily within each national state's border. National mobility restriction compound inequality with vulnerable members of society, e.g., people with a precarious migration status or undocumented migrants, suffering the most (Devakumar et al., 2020; Piccoli, 2020). Closed borders, decreased international trade, and exclusionary political speeches boost national identity and, thus, trigger nationalistic chauvinism (Hartman et al., 2020). The latter itself is an important driver of anti-immigrant sentiments and discriminatory behaviour (Blank and Schmidt, 2003) and stronger in-group solidarity may increase outgroup demarcation (Rao et al., 2011) making preferential treatment of more similar groups more likely.

Third, research in evolutionary psychology underlines the influence of the behavioural immune system on negative sentiments towards outgroups and biased behaviour towards them in times of pathogenic threat (Aarøe et al., 2017; Faulkner et al., 2004; Huang et al., 2011). According to Aarøe et al. (2017: 279) 'pathogen threats are distinct from other evolutionary recurrent threats [...] in that one cannot see pathogens nor confront them effectively through brute force'. The outbreak of COVID-19 signifies a 'high disease-salience condition' (Faulkner et al., 2004: 346) associated with increased realistic threats for both individual and societal health. The behavioural immune system tries to protect individuals from the threat of infectious diseases by triggering emotions of disgust. Affective Intelligence Theory (Marcus et al., 2000) shows that emotions activate

certain behaviours and actions by stimulating the disposition or the surveillance system. Disgust is associated with a general avoidance of out-groups and biased behaviour towards them (Aarøe et al., 2017; Huang et al., 2011) due to the association of ‘otherness’ with infectious diseases. Superficial cues of otherness, such as nationality or language proficiency, thereby trigger behavioural avoidance (Faulkner et al., 2004). The behavioural reaction to pathogenic threat, such as the outbreak of COVID-19, thereby occurs mostly unconsciously.

From these three theoretical arguments, we expect an increase in discrimination due to the crisis:

Hypothesis 2: Discrimination – meaning preferential treatment based on cultural similarity as captured via nationality and language skills – should be more pronounced in times of COVID-19 (*crisis hypothesis*).

This should result from increased economic threats, more in-group solidarity and unconscious reactions to the sanitary threat emanating from an infectious disease.³ Thus, the expected increase in differential treatment should be restricted to identity-based characteristics expressing group similarity, as measured via nationality and language skills. Conversely, we do not expect discrimination based on mere individual characteristics, such as profession, gender or age, to change because of the COVID-19 health crisis.

Exposure to COVID-19

Individuals vary in exposure to the threat of COVID-19 infection based on their location and degree of vulnerability. COVID-19 incidences vary geographically, including COVID-19 hotspots making the threat to one’s health a variable. Geographical exposure is particularly important in the German case with profound differences between the 16 subnational regions (*Länder*). The first case of COVID-19 occurred on 27 January 2020 in Bavaria when the German government assessed the risk of a severe outbreak as very low risk (Wieler et al., 2020). Individual federal states most affected started closing schools and prohibiting large gatherings around 10 March 2020. At the beginning of the crisis, and largely throughout the crisis, the most affected areas were Bavaria, Baden-Württemberg and Nordrhein-Westfalia, which are all highly populated. Following the subnational governance structure, the *Länder* implemented contact bans and closing of businesses at different time points depending on the reported number of COVID-19 cases in the respective area. A federal contact ban was implemented on 22 March 2020. While this was not an official lockdown, it limited gatherings to not more than two persons and closing many businesses, among others, restaurants, shopping centres and all non-food stores, as well as hotels (Wieler et al., 2020). The results of this quasi-lockdown became visible when the cases started declining a month later. Overall, we expect that individuals in the more affected areas should have a higher likelihood to prioritise more similar individuals than those who lived in less affected areas:

Hypothesis 3: Respondents will show higher prioritisation of individuals that are more similar to them in terms of nationality and language the more they were exposed to the outbreak of COVID-19 (*exposure hypothesis*).

Individual vulnerability

Individuals vary in their risk of severe COVID-19 infection. Those with cardiovascular diseases, other chronic illnesses (Jordan et al., 2020) or obesity (Kassir, 2020) are most likely to be severely affected or die from a COVID-19 infection. However, older people, especially those aged above 60 years, are particularly more likely to suffer severe outcomes from COVID-19 (Bonanad et al., 2020; Jordan et al., 2020). We thus expect that the above-proposed threat mechanism is even stronger for individuals over 60 as they are more vulnerable than the younger population.

As argued earlier, the economic consequences of COVID-19 are substantial and, despite government assistance, lower income groups fear the most about their economic survival. In situations where survival is more prevalent than self-expression, individuals tend to focus on the needs of themselves and their in-groups (Inglehart and Baker, 2000). For these reasons we formulate the following hypothesis:

Hypothesis 4: Individuals most likely to be affected by the COVID-19 crisis, that is, individuals above 60 and those in low-income groups, will show more discriminatory behaviour as the crisis gains in salience (*vulnerability hypothesis*).

Data and methods

The data collection of our original study coincided with the outbreak of COVID-19 in Germany. It took place between 27 February and 16 March 2020, whereby most responses (more than 80%) were collected before 5 March 2020 (Adam et al., 2021). While during this time the COVID-19 awareness increased, it was before the official nationwide contact-ban (22 March 2020).⁴ The pre-COVID-19 ‘lockdown’ sample includes 2999 respondents. The second survey was fielded between 9 April and 15 April and included 1063 respondents. YouGov Germany conducted both surveys. The recruitment was based on their web-panel and included a stratification based on gender, age and geographical location (*Länder*).

The core of both surveys was a conjoint experiment that allowed us to assess the multi-dimensional nature of preferential treatment using a hypothetical bureaucratic work task. In doing so, we capture implicit discrimination (Correll et al., 2010). In detail, respondents received six pairs of profiles of hypothetical applicants for a welfare benefit (*Hartz IV*) and another six pairs of profiles of hypothetical requests concerning voting documents (see Figure 1). Thus, respondents had to make 12 forced choices. We selected these two policy areas as mobile EU citizens are eligible for both of them. The order of the two tasks was randomised to avoid order effects.

We simultaneously randomised five characteristics of the applicant to investigate their causal effect on the response. These characteristics could plausibly be part of an application procedure in the two policy contexts for the situation of a resident newly arriving in a

Social benefits example ‘Please consider a scenario in which you have a job working for the local government in your municipality. You receive two applications for a social benefit, the so-called Hartz IV. As EU-citizens, both applicants are eligible to apply for this social benefit. Due to personal time constraints, you are required to make a choice of which applicant you process first, which will lead to a delay in the payment to the other applicant.’		
Voting rights example ‘Please consider a scenario in which you have a job working for the local government in your municipality. You receive two requests concerning missing vote documents for the upcoming local election. As EU-citizens, both persons are eligible to vote in this election. However, without the necessary documents, they will not be able to cast their vote. Due to personal time constraints, you are required to make a choice of which request you process first, which will lead to the other person cannot vote in the upcoming election.’		
	Applicant (Request) 1	Applicant (Request) 2
Nationality	Dutch	Romanian
Gender	female	male
Language proficiency	broken German	fluent German
Profession	nurse	medical doctor
Age	25 years old	40 years old
Which of the two applications (requests) will you process first?		
<1> Applicant (Request) 1		
<2> Applicant (Request) 2		

Figure 1. Exemplary conjoint design.

Source: Adam et al., 2021.

local area in Germany. As discussed above, identity-based characteristics expressing group similarity are measured via two factors: (a) nationality – Dutch or Romanian, with the latter being more culturally distant and potentially subject to more discrimination compared to the former, and (b) language proficiency – broken or fluent German. Besides, we included the following individual characteristics of the applicants which may trigger discriminatory behaviour: (c) gender – male or female (d) profession – nurse or medical doctor (to capture the difference in the professional status of the applicant) and (e) age – 25, 40 or 55 years. Overall, this renders 48 possible combinations. Figure 1 displays the five characteristics of an exemplary design. Following the recommendation by Abramson et al. (2019: 22), we restrict the number of attributes and levels to receive an adequate measure of the majority preference.⁵

Exposure to COVID-19. We measure exposure to COVID-19 as the infection rate at the regional level when the respondent administered the survey. We employ the log scale and standardise it for each sample (pre-lockdown vs post-lockdown). Therefore, the variable measures the relative exposure of each region/day compared to the rest of the regions/days of the same sample (pre- and post-lockdown). We use contextual exposure

(comparing regions *within* sample) instead of absolute exposure (comparing regions *between* samples) because infection rates are, in absolute numbers, very different between the two samples. For example, we see that the region with the highest infection rate among the most exposed ones during the main sample still has a lower infection rate than the lowest exposed region in the crisis sample. Without contextualising the exposure (i.e. acknowledging differences between the two samples), we would assume that the exposure is always higher in each region in the crisis sample. However, our measure aims to capture *relative exposure* in a specific moment in the development of the crisis and not infection rates *per se*. We provide a robustness check with the exposure levels in absolute terms in the Online appendix, which shows no substantial differences. Figure 2 depicts the exposure in different German regions over time, with the fieldwork periods highlighted in grey.

Method. Our research design involves comparing the answers given to six pairs of hypothetical profiles (binary response; see Figure 1) in two different scenarios, namely sample (pre- and post-lockdown) and outcomes (welfare and electoral rights). We have a total of 4816 individuals that have prioritised 12 pairs of profiles (six for each outcome), resulting in 115,584 binary responses (4816 individuals * 12 decisions * 2 profiles). We employ a hierarchical Bayes (HB) logit model approach (Allenby et al., 2017; Allenby and Ginter, 1995; Lenk et al., 1996; Rossy et al., 2015).⁶ HB models in conjoint analyses are composed of two parts: The first estimates the utilities (also called part ‘worths’) of each individual for each of the characteristics of the profiles (‘features’). The utilities can be understood as the relative probabilities of picking a specific profile feature compared to the baseline profile; for instance, the probability of prioritising a Dutch citizen over a Romanian citizen. They are, indeed, analogous to the predicted probabilities in a

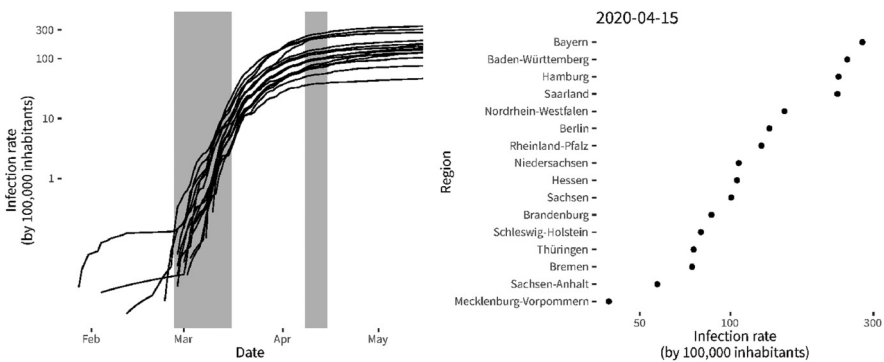


Figure 2. Exposure to coronavirus disease 2019 (COVID-19) crisis in Germany. Notes: The grey bands indicate the periods where the survey was fielded. (a) Temporal evolution of infection rate in the different regions in Germany and (b) infection rate in each region for the last day of the administration of the survey.

binary logistic regression setting. With this first level, we can estimate the degree of prioritisation of each respondent in the survey for each profile characteristic.

The second part estimates the effects of individual-level covariates on the values of these estimated utilities, partially pooling the effects by sample and outcome. This part explains how some individual characteristics of the respondent (exposure, vulnerability etc.) affect the individual's degree of prioritisation of each profile.⁷ While we could have used pre-canned packages (e.g. the R package *choicemodelR*) by Ryan et al. (2012), our main research aim is to estimate whether there are differences between the two samples (main and crisis) without having to assume that either of these are samples of the same population (e.g. by using interactions) or that they are two unrelated populations (e.g. by running two separate models). We, therefore, tailor the model to the specific experiment that we have designed. By partially pooling the effects, we acknowledge that the data generation process that governs why some individuals prefer some profile features over others is the same; no matter whether one prioritises rights or welfare, and no matter whether we look at a respondent in the 'regular' period or the 'under crisis' (after lockdown started) period. Technically, this also implies that any difference between the pre- and post-lockdown effects or the specific policy context (voting rights or welfare benefits) should respond to systematic differences and not probabilistic chance. It is, indeed, a very conservative approach to find differences in the pre- and post-lockdown scenario. However, it also prevents us from overestimating the potential lockdown effect.

We employ Bayesian inference to get the posterior distributions of the parameters of interest.⁸ Our strategy allows us to estimate effects without relying on a specific decision-making process and functional form assumptions. In other words, we do not have to assume that the individuals use a particular behavioural model (for example, the commonly used models of maximising utility or a form of bounded rationality). We make the assumption of stability and no carryover effects, as the profiles are randomised. We do not assume, however, the lack of profile-order effects. Instead, we control for them, and we find that, on average, by outcome and sample, profiles presented first in the pair are 36% more likely to be prioritised. After an adaptation period of 500 iterations and a burnin of 1000, we sample three chains for 10,000 iterations thinning by five, to base our results on a total of 6000 iterations for 64,953 parameters. Convergence analysis using *ggmcmc* does not show any traces of non-convergence (Fernández-i-Marín, 2016). We employ weakly informative priors for all parameters, including the pooling factors, to allow all groups to borrow strength from the main effects. More detailed information about the model specification, software implementation and convergence can be found in the Online appendix. We standardise to half a standard deviation for the continuous variables at the individual level (age, exposure and income) to compare their relative importance directly to binary variables (Gelman, 2008). Moreover, by employing Bayesian inference, we can integrate our missing data strategy into the analysis comprehensively. We use a conservative approach that allows us to move the uncertainty of the unknown characteristics of the respondents to the parameters of the model by simulating missing data cases from the observed distribution of cases.⁹

Results

Can we detect preferential treatment in hypothetical bureaucratic tasks based on cultural and linguistic similarity? Has the acceleration of the COVID-19 crisis affected the extent and patterns of discrimination against different kinds of mobile EU citizens? To answer these questions, we compare the treatment of EU citizens within multiple different characteristics across our two samples (pre- or post-lockdown) and two policy fields (voting rights or welfare benefits). To show our findings intuitively despite the complexity of the design, we present the main results graphically.¹⁰

In the first step, our focus is on whether we can detect preferential treatment of mobile EU citizens and whether it differs between the pre-lockdown and the post-lockdown samples. This addresses Hypothesis 1 and Hypothesis 2 about the preferential treatment of more similar EU citizens and that this preferential treatment is even more pronounced during the ongoing COVID-19 pandemic, primarily for nationality and language skills. While we find evidence for preferential treatment supporting Hypothesis 1, we have to reject Hypothesis 2 based on our results. At the aggregate level, the same proportion of individuals that was more likely to prefer profiles with full language before the COVID-19 crisis (first row, with utilities above 50% for the preference for such a characteristic) stays constant later on. The same applies to the other five characteristics.

Figure 3 shows the estimated utilities of every individual regarding each profile preference. Utilities are interpreted as the probability that the surveyed individual prefers one feature over the other(s) (e.g. preferring full German language proficiency over no German language proficiency). In Figure 3, the left column shows the estimated utilities for the policy field of electoral rights, whereas the right column presents the estimates for the field of welfare benefits. The histograms represent the distribution of our original pre-lockdown sample. The lines represent the smoothed densities of the sample surveyed after the national lockdown (second sample). Rows are sorted by features most likely to be prioritised to less likely (see also the exemplary design set-up in Figure 1). Individual utilities shown here are summarised as the median of the parameter estimating them.

First, we assess whether there is preferential treatment based on specific characteristics of mobile EU citizens. The displayed utilities in Figure 3 show the proportion of respondents that would, for example, prefer a person with full language skills over a person without these language skills. A clear preference would mean that the distribution of the utility peaks on the right towards a preference. Looking at the results in Figure 3 we can see that, on average, the most substantial part of the respondents (more than 50%) tend to prioritise applicants/request with high language proficiency – in particular, when we look at the electoral rights policy field. We notice the same pattern for the preference of Dutch citizens over Romanian citizens, whereby we see a less right-peaked distribution. From these results, we may also conclude that the most preferred profiles are characterised by full language proficiency, Dutch nationality, and being female. Preferences over age and profession are overall relatively equally.

While we find evidence of preferential treatment, Figure 3 also reveals an almost perfect correspondence between the sample of individuals surveyed before the lockdown

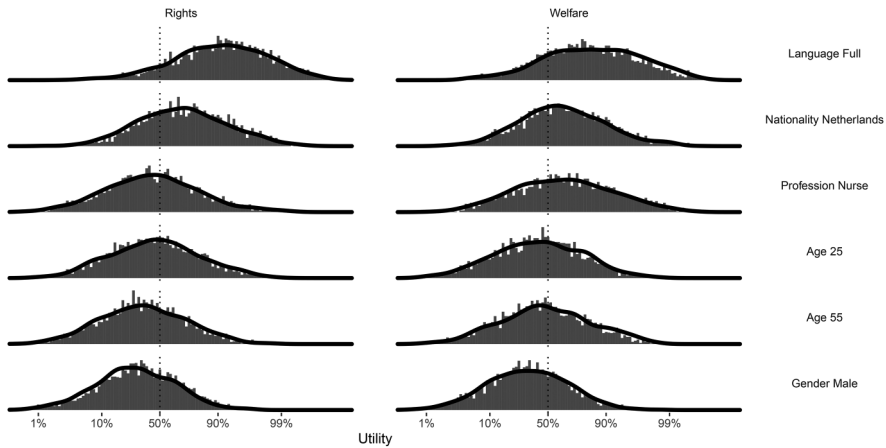


Figure 3. Distribution of the median estimated utilities for each of the individuals analysed and each feature.

Notes: The histogram and the density curve show the same information, but the histogram refers to the pre-crisis sample and the smoothed density to the coronavirus disease 2019 (COVID-19) crisis sample. The figure shows the distribution of the median estimated utilities: The results of the first part of the hierarchical model where we estimate up to which point each individual prioritises each of the profiles. Most individuals are to the right of the 50% utility for Language. The distribution of utilities can also be read as the *societal* distribution of preferences on discrimination for several characteristics: some individuals have very strong preferences – as the ones in the tails – and some have average preferences. The average – societal – preferences sometimes are equally split at 50%, implying that overall there is not much discrimination, and sometimes they are close to 1% or 99%, implying a great deal of average – societal – discrimination. The second stage of the model is to assess what explains the distribution of such *societal* preferences.

(the histogram bars) and individuals surveyed after the lockdown (the density line). Based on these aggregate results, we may conclude that the salience of the COVID-19 and the consequences due to the lockdown in Germany did not change the way individuals make preferential decisions. The COVID-19 crisis has not implied a general move in preferences in the short run, even though the theoretical expectations suggested this direction. The degree of the preferential of Dutch over Romanian nationals does not vary (see the Online appendix).

However, it may be that individuals react differently to the crisis due to their degree of exposure and vulnerability. Thus, the following results show how individual-level characteristics of the respondent explain individual utilities and prioritisation choices. We analyse how far individual vulnerability – in terms of having low income and/or being above 60 – affects the likelihood of preferring a profile based on our six different characteristics. Given that we estimate these effects in the pre- and post-lockdown period, we can compare which individual-level characteristics are more or less affecting the likelihood of prioritising individual features.

We compare the parameters pre- and post-lockdown to test our hypotheses (Hypothesis 3 and Hypothesis 4). Tables 1 and 2 show the estimated parameters pre- and post-lockdown sample (see also the Online appendix). Our model is conservative following our decision to derive the pre/post effects from the same underlying distribution. This makes the two samples not entirely independent from each other, meaning that evidence of a difference is very unlikely to be due to randomness in the sampling process.

As an additional test of Hypothesis 2, Table 1 shows the probability that profiles with full German language proficiency or Dutch nationality are more prioritised under the COVID-19 crisis. Compared to the estimates in Figure 3, these results take respondents' characteristics into account, allowing for more distinct variations between them. Here, larger values indicate a higher probability of support for our assumption. Concerning the characteristics of full German language proficiency in the case of welfare policy, the estimates reveal that there is a 97.56 probability that the effect of this characteristic increased in the post-lockdown sample; thus, supporting our assumption that prioritisation should increase as the crisis becomes more salient and bears severe consequences for the population (due to the lockdown). However, this is the only clear difference we find in the pre- and post-lockdown samples. When looking at the policy field of electoral rights and the prioritisation based on language proficiency, there is only a 57.08 probability that this is higher in the post-lockdown sample. The probabilities even decrease further when nationality is the base of prioritisation: the probabilities that the two samples differ drop to 19.22 and 14.68. All in all, we find little support for a different prioritisation of applicants based on language proficiency and nationality, meaning that the prevalence of the COVID-19 crisis did not relevantly increase (or decrease) potential acts of discrimination.

Table 2 reports the evidence for Hypothesis 3 which claimed that exposure to the crisis may increase one's likelihood to prioritise applicants based on their language proficiency and more similar nationality, namely Dutch. As previously explained, Table 2 presents the probability that we find higher effects of exposure to COVID-19 after the lockdown than before. Overall, we can conclude that there is no support for this exposure hypothesis: the probabilities of prioritisation are all relatively low (less than 57%), and, thus, do not support that the magnitude of the effect of exposure to the crisis increased significantly between the main period and the crisis period. The evidence points towards a null effect, which means that the influence of individual exposure does not differ in

Table 1. Probability of higher prioritisation after lockdown (crisis sample).

Outcome	Feature	Prob Hypothesis 1 (%)
Welfare	Language full	96.9
Rights	Language full	57.2
Welfare	Nationality Netherlands	19.0
Rights	Nationality Netherlands	15.2

Notes: The numbers report the amount of evidence for the effect of language and nationality discrimination being higher during the COVID-19 crisis than before. Further information about how the results were calculated and notes on the replication are given in the Online appendix.

Table 2. Probability of the effect of higher exposure to coronavirus disease 2019 (COVID-19) (due to living in a different region) being higher after the lockdown than before for the two features regarding identity.

Outcome	Feature	Prob Hypothesis 2 (%)
Welfare	Language full	56.0
Rights	Language full	53.0
Rights	Nationality Netherlands	38.7
Welfare	Nationality Netherlands	38.5

Table 3. Probability of higher effect of age and income (vulnerability) on prioritisation (identity) during the coronavirus disease 2019 (COVID-19) crisis than during regular time.

Outcome	Feature	Covariate	Prob Hypothesis 3 (%)
Welfare	Language full	Age (≥ 60 years)	54.5
Rights	Language full	Age (≥ 60 years)	50.0
Rights	Language full	Income (low)	41.5
Welfare	Nationality Netherlands	Income (low)	38.7
Rights	Nationality Netherlands	Income (low)	32.7
Welfare	Language full	Income (low)	29.6
Rights	Nationality Netherlands	Age (≥ 60 years)	27.4
Welfare	Nationality Netherlands	Age (≥ 60 years)	21.5

the two samples. As reported in the Online appendix, the exposure also neither affects the tendencies to prioritise applicants based on their language proficiency nor on more similar nationality.

Lastly, Table 3 reveals the results for Hypothesis 4 which hypothesised that individuals most vulnerable to the crisis (low income, high age) will show more discriminatory behaviour. As in Hypothesis 3, there is no evidence of such effect being higher after the lockdown during regular times. Thus, we do not find support that more vulnerability implies more discrimination.

To sum up, the findings show that Hypothesis 2 only holds in one of the four situations. There is no evidence for Hypothesis 3 or Hypothesis 4. From our results, we conclude that the increased salience of the COVID-19 crisis in Germany due to the lockdown has not altered the differential treatment of mobile EU citizens, at least not in the short run. We observe the same degree and patterns of discrimination as before the crisis unfolded. However, we can confirm that there is a significant and sizeable amount of discrimination against mobile EU citizens based on their nationality and their degree of integration.

Discussion and conclusion

The EU has faced multiple challenges and crises in the past years, among others, the financial crisis in 2008 as well as the more recent humanitarian migration crisis starting

in 2015. Each crisis posed a considerable threat to solidarity across EU member states, often resulting in heightened Euroscepticism (Baute et al., 2019). At the same time, the enlargement and the consequential increased diversity within the EU in connection with the freedom of movement continuously puts the unity among nation-states to a test. Our results revealed a sizeable degree of discrimination against mobile EU citizens based on their nationality and language skills, challenging the highly praised equality of rights among EU citizens. The current COVID-19 crisis has a strong international component related to the movement of people, which makes it even more salient for studies addressing the movements across national borders. While COVID-19 challenges inter-European solidarity, this crisis is different from the previous ones: politicians cannot solve this pandemic crisis alone – in contrast to the financial crisis – because its solution depends on the collaboration and commitment of the whole population. Besides, this pandemic crisis puts individual health at risk and increases the pressure on both the economy and the solidarity within and among nations.

Thus, we had strong expectations about how the crisis and, in particular, the consequences of lockdown measures could influence individuals' tendency to discriminate against mobile EU citizens. The severity of this crisis for all citizens as well as the expectations from theories about different aspects of threat (health, economic and cultural threat), suggested that preferential treatment should increase as the COVID-19 crisis expanded. Nevertheless, we could not find convincing support for these expectations, not even when we test for individual degrees of exposure and vulnerability to the crisis. In sum, the crisis did not affect discriminatory behaviour towards mobile EU citizens in Germany. However, this raises the question: why could we not find support for our hypotheses?

First, our findings rely on a snapshot of data collected in the accelerating phase of the COVID-19 pandemic in Germany and in the period after the lockdown. We thus test for the short-term effects of the crisis. Despite the importance of our findings, we suggest that future research should also examine the emerging long-term effects. As aforementioned, there are reasons to believe that this pandemic posed a severe threat to solidarity within the EU which could reasonably provoke short-term effects. However, we can consider the reasons behind the lack of an increase in discrimination to inform future studies. Devakumar et al. (2020: 1194) argue that 'health protection relies not only on a well-functioning health system with universal coverage, but also on social inclusion, justice, and solidarity', indicating that solidarity is a central piece of the puzzle to overcome this health threat. Accordingly, this pandemic might have decreased and simultaneously increased solidarity within and among nations, explaining the null finding. Immediate reactions to the pandemic, such as voluntary civil society engagements in hospitals or the storms on supermarkets to stockpile food and sanitary supplies, suggest indeed that this exceptional situation triggered behaviour on both extremes, resulting in an uptick of solidarity as well as egocentric and protectionist behaviour. Moreover, our findings may be driven by how we measure discrimination as well as by our exclusive focus on mobile EU migrants. A study concentrating on a different group of immigrants might have come to a different conclusion. However, this paper aimed to assess the effect of the pandemic on existing patterns of discrimination within the EU context.

From a theoretical perspective, the idea that some individuals react differently to the crisis than others can be expanded beyond the scope of exposure and vulnerability: existing patterns may increase or decrease in times of crisis. That is, we may observe either a re-enforcement or a de-enforcement of well-known explanatory factors of anti-immigrant sentiments that drive discriminatory tendencies. For example, we know from previous research (for example, Hibbing et al., 2014) that more conservative individuals react more pronounced to threats than others. Concerning this, we might expect that those leaning more to the right on the political ideology scale may show a stronger differential treatment of outgroups than they did before the COVID-19 crisis (Dovidio et al., 2010). However, the assumption that ideologically right- and left-leaning individuals differ in their reactions to threat is also highly debated in the literature (Bakker et al., 2020). Moreover, given that the crisis affects the whole population, the differences between these two groups may be less pronounced. Nevertheless, these suggestions are explorative as previous research on the reactions to a global pandemic is very rare.

Apart from this critical assessment of our findings, our study rendered an essential test of well-established theories that may help in developing them further. While the expectation that severe realistic threats increase anti-immigrant sentiments may still be true in the longer term, our findings challenge the idea that threat perceptions, increased nationalism, as well as reactions of the behavioural immune system directly translate into increased discriminatory behaviour. Yet, at this point, we cannot tell whether our results question classical explanations, meaning whether other factors such as prior experiences with distinct outgroups as well as underlying anti-immigrant sentiments are more substantial explanatory factors of discrimination, or whether it is simply too early to fully assess the impact of this unprecedented and exceptional health and economic crisis on prejudicial attitudes, nationalism and discrimination.

Our findings that solidarity with EU citizens did not immediately collapse with the outbreak of COVID-19 aligns with emerging research about other aspects of the crisis. As an immediate reaction to the current pandemic, there is growing evidence showing that citizens tended to rally around incumbent political leaders and institutions as well as to adhere to the political status quo instead of responding to the right-populist challengers who attacked the expertise of dominant parties (De Vries and Hobolt, 2020). In the end, at least in the case of Germany, the unexpected crisis gave dominant parties a way to showcase their competence and long-term experience in governance by reacting quickly and decisively, which fostered their popularity, at least in the short-run (De Vries and Hobolt, 2020). Whether adherence to the status quo will be found in the longer-term societal and political impacts of COVID-19 remains to be seen.

While we reveal that the pandemic does not threaten solidarity – at least in the short-run – we find evidence that solidarity in distributing fundamental rights to mobile EU citizens is bounded. Compared to prior research, we contributed by demonstrating that discrimination occurs even when looking at a proxy for cultural dissimilarity, namely nationality. This finding, which jeopardises the ideal of equal EU citizenship, underlines the current tensions within the EU, especially those connected to discussions around its enlargement.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship and/or publication of this article: This work was supported by the Schweizerischer Nationalfonds zur Förderung der Wissenschaftlichen Forschung (grant number 51NF40-182897).

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Supplemental material

Supplemental material for this article is available online.

Notes

1. Mobile EU citizens are EU citizens residing in a Member State other than their home country (available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52013DC0837&from=EN>, accessed 18 January 2021).
2. The study is pre-registered under <https://osf.io/md8tw/> and is an extension of a prior study by Adam et al. (2021). The original project focused on differences between public administrators and the general population (Adam et al., 2021) and included an oversample of individuals working in the Public Administration (700 respondents). In the current study, we collected new data and re-analyse the data from our first survey *without* the oversample (only the general population). The focus now lies in exploring discriminatory behaviour within the general population over time during the COVID-19 crisis. Another key difference is the literature used in the two studies. Adam et al. (2021) mainly include literature from public administration research, whereas this article refers more to attitudinal literature and literature from (political) psychology. Accordingly, the two contributions also explore different hypotheses. Lastly, the present study uses a different estimation method, as the data structure is different from Adam et al. (2021). All replication material is available at: <https://osf.io/aycwt/>.
3. In our pre-registration, we formulated four explicit hypotheses following our pre-COVID-19 registration. We slightly deviate from this plan by formulating a more general and overarching hypothesis instead of several smaller ones. The deviation follows comments we received when presenting the study.
4. While the contact ban did not represent a real lockdown like in other countries, such as Italy or Spain, it nevertheless severely limited the freedom of movement of the individuals living and residing in Germany. In the following, we will refer to the contact ban as ‘lockdown’.
5. Abramson et al. (2019) show that making inferences from conjoint experiments to the majority are quite problematic. As a solution, they suggest to implement a more conservative design with less attributes and a small number of levels for each attribute. Our design meets these requirements. Moreover, Hainmueller et al. (2015) present evidence that conjoint experiments are a good approximation of real world behaviour in settings which are closely comparable to our study.

6. Allenby and Ginter (1995) show that HB is able to estimate individual part worths for choice data. Further, Lenk et al. (1996) underline that HB can do this effectively even when each individual provides fewer answers than the number of parameters being estimated.
7. While some may argue that there are simpler approaches, e.g., without estimating individual's utilities (like estimating AMCEs), we refrained from doing this as such an approach would have increased the chance of finding false positives, i.e., more differences between the main sample and the crisis one than what there really are. Our HB predicts around 80% (PCP, percent correctly predicted) of the decisions, whereas a simpler model without the intermediate estimation of individual part worth utilities predicts around 20 points less (60% PCP) – see the Online appendix for more detailed information.
8. Detailed specifications are provided in the Online appendix. As robustness checks, we also report Hainmueller et al.'s (2015) AMCEs for a simpler model without individual part-worths, as well as a binary logit model (McFadden 1973). Overall the robustness checks underline that our results are robust, even when implementing alternative modelling approaches.
9. The original observational data (the rates of infection in different German regions) comes from a database that is being daily updated, backwards, to account for cases that were labelled as a COVID infection much later. This implies that the replication of the concrete numbers in the tables depends on the date where the data has been gathered. In our case, we present the results with the RKI dataset as of 3 July 2021. There are more detailed notes on the replication of the presented results in the Online appendix.
10. Leeper et al. (2020) raise the concern that comparisons between groups are mostly descriptive. We address this problem of conjoint experiment research, first, by using a hierarchical approach that allows us to estimate parameters without having interactions, and second, by reporting results based on differential discriminations and probabilities of the difference in the effects.

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