Original Article

Us and Ours

 Anti-immigrant Sentiment as a Function of Common Resource Management

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**Abstract**

In this work we investigate how parochial concerns for common resources, such as tax-funded goods, relate to prejudice against immigrants. Previous experimental work showed majority groups assume minorities will exploit common resources without contributing towards their maintenance. We relate predictions about, and support for, various types of common resource to prejudice against immigrants in two correlational studies. Prejudice against immigrants was negatively associated with support for universal, but positively with security-related resources. Participants' prediction that minority groups would contribute less to the management of communally shared resources, was reflected in the degree of negative attitudes they expressed against immigrants in particular.We discuss these results in view of political narratives about immigrants and common resource management policies.

**Key Words:**

Prejudice; Immigration; Minority groups; Welfare redistribution; Common resource management

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In 2010, Thilo Sarrazin, former minister of finance in the federal city-state of Berlin, criticized Germany for allowing immigrants to form a “parallel society” which enables abuse of the country’s welfare system (Sarrazin, 2010). Similarly, politician Guy Parmelin, described his opposition to Swiss migration laws by suggesting that non-EU migrants will take advantage of them to benefit from the Swiss welfare system (Summermatter, 2014). More recently, Friedrich Merz, leader of the largest German opposition party, the Christian Democrats, accused immigrants of snatching away urgently needed dentist appointments from ethnic majority Germans (“German opposition leader faces criticism”, September 2023). Others presented immigrants coming to Europe as “social parasites” or “benefit tourists”, echoing a key talking point in right-wing populist narratives (Hogan & Haltinner, 2015; Musloff, 2022). These phrases express a fear that immigrants are an ethnic and cultural “other”, cynically using the excuse of war, persecution and poverty to take advantage of “our” commonly funded public goods, like social security and unemployment benefits. While it is easy to write such statements off as dog whistle politics, we argue that they represent a fundamental fear that ingroup-generated common resources might be exploited by ethnic and cultural minorities, particularly immigrants. This intuition, in turn, motivates greater prejudice against them.

In this work, we present a socio-psychological, game-theoretical framework for understanding the connection between concerns for national-level common resource management and prejudice against immigrants, and perform two empirical tests of the concept across two different contexts. Specifically, we examine whether participants indeed distinguish between different types of public spending (universal v. security-related), and if so, how support for more funding of each type relates to prejudice. Study 2 further zooms in on the association between prejudice and predictions about ethnic minorities’ contributions to, versus benefits from, common resources.

# Theoretical Background

For intergroup psychology, the question of migration and acceptance of migrant populations into the fabrics and structures of host societies is probably one of the most important practical questions of our day. Immigrants and their descendants routinely face discrimination in interpersonal (Garcini et al., 2018) and institutional (Uhlendorff & Zimmermann, 2014) interactions. Majority ethnic populations often view minority members with migrant backgrounds as a threat (McLaren, 2003) and hold negative attitudes against them (Kessler et al., 2010; Pettigrew, Wagner, & Christ, 2010). There is a general fear that immigrants, including refugees, asylum-seekers, and economic migrants, will endanger the hosts’ unique national (Shin & Dovidio, 2018) and religious identity (van Rijswijk et al., 2009). Thus, majority host populations regularly view immigrants with distrust, treat them unfavorably, and exclude them from host society (Marinucci et al., 2022).

One specific way in which immigrants are excluded is by denying them access to the group’s common resources (CRs). For example, Thomann and Rapp (2018) show that Swiss welfare workers perceive immigrants as less deserving of welfare benefits and are likely to allocate fewer funds to them than to Swiss nationals. Interviews with German street-level bureaucrats underlie the way national, linguistic and ethnic differences become justifications for such discrimination (Ratzmann, 2021). Those ethnic minority immigrants who *are* allowed access to common resources like welfare benefits are more likely to be punished for various infractions than are members of the host majority (Monnat, 2010; Pedersen, Stritch, & Thuesen, 2018; cf. Gschwind, Ratzmann & Beste, 2022). This trend seems to persist even though pertinent research very clearly points to the fact that immigration is an asset for contemporary industrial societies, not a drain on their resources (e.g., Boubtane & Dumont, 2013; Dustmann & Frattini, 2014; Huber & Oberdabering, 2016.) Moreover, similar findings are reported in experimental studies where minority targets are more likely to be denied access to common resources (Schram et al., 2009; Soroka et al., 2017), or disproportionately punished for taking part in managing them (Hugh-Jones & Perroni, 2017). The preference for keeping outgroup members, minorities, and particularly immigrants, from enjoying group resources, was theoretically related to a lack of interpersonal trust (Brewer, 1999), low confidence in sanctioning systems across group lines (Jeon et al., 2017), and a basic preference for the welfare of ingroup members over that of outgroup members (Cutler et al., 1993). In other words, when it comes to resources which must be communally maintained, such as the social services and benefits provided by the welfare state, humans tend towards parochialism.

The resulting discrimination has multiple negative consequences for excluded immigrant communities, and can be integral in driving them to marginalization and radicalization (Lyons-Padilla et al., 2015). However, there are indications of an even more comprehensive negative effect, threatening the ability of a society to generate any CRs whatsoever. Rising ethnic and cultural diversity is often related to lower contributions to public goods (e.g., Alesina & LaFerrara, 2000; Habyarimana et al., 2007; Jacskon, 2013; Miguel, 2004), but more exploitation of existing resources (Alesina et al., 2019; Montalvo & Reynal-Querol, 2005; Sjöstedt, 2012). In their seminal paper on the topic, Alesina and colleagues (Alesina et al., 1999) demonstrate more ethnically fragmented neighborhoods contribute less to crucial, local resources (school supplies, roads, waste management). The negative association between heterogeneity and the community’s ability to generate CRs is recorded in longitudinal (e.g., Alesina et al., 2019, Schmidt-Catran & Spies, 2016) and experimental studies (Habyarimana et al., 2007). Moreover, rising ethnic diversity has been related to decreasing support for having any CRs whatsoever (Mau & Burkhardt, 2009; Schmidt-Catran & Spies, 2016). For example, Schmidt-Catran and Spies (2016) show that general support for welfare spending among ethnic Germans decreases as ethnic diversity grows across four fieldings of the German General Social Survey (*Allbus*). Experimental evidence from small-scale society’s links lower contributions to CRs in more heterogeneous groups to their constituents’ belief cooperation would bring lower benefits upon investment than it would in homogeneous groups (Habyarimana et al., 2007). Thus, not only is access to CRs denied to minority groups like immigrants, but their presence discourages support for having any CRs whatsoever. This suggests to us that people must believe granting minority groups, like immigrants, access to common resource somehow threatens the value of the resource itself. In other words, some intuitive, biased belief about how minority groups affect CRs might exist and inform prejudice against them.

In this work, we argue that negative attitudes towards immigrants have a basis in concerns for common resource (CR) management which can be understood in game-theoretical terms. Specifically, we argue that host majority populations tend to assume ethnic minority groups will contribute less and benefit more from CRs. This intuition motivates negative bias against all minority groups including immigrants, as do different attitudes towards CRs and public spending on them. We argue they should add to the explanation alongside other, known indicators of prejudice, like Social Dominance Orientation (Sidanius & Pratto, 1999), Hierarchic Self-Interest (Hagan et al., 1999), or national pride and identity (Grigoryan & Ponizovskiy, 2018; Hjerm, 1998).

Why would this intuition exist? Šimunović (2017) investigates how the public goods game (PGG) faces obstacles if it is played between a minority and a majority. The PGG is a model of CR management where each individual participant can contribute to a common pot. The common pot is subsequently multiplied by some factor *r*>1 whereupon the benefits are redistributed to all players. This presents a dilemma: while it is collectively beneficial to contribute to the common pot, it is individually beneficial to freeride, i.e., to profit from others’ cooperation without contributing oneself. Šimunović finds that the incentives to freeride are asymmetrical when the game is played between distinct groups of unequal size, representing a minority and a majority living in a heterogeneous society. She finds that freeriding appears to be a more tempting strategy for minority members, who can reliably increase not only their own, but fellow minority members’ outcomes by freeriding. This is not the case for majority group members (Simunovic et al., 2023). Šimunović argues that majority group members intuit minorities will freeride on CR management and, as a result, discriminate against them. Indeed, preliminary experimental work supports this notion. Participants categorized into a meaningless majority group underestimate minority contributions in the PGG. This intuition drives discrimination against them in economic games. Authors characterize this as a cognitive bias which emerges from the “set up” of the game (common resource management dilemma) and spills over to target any contextually relevant, recognizable minority. However, there is no guarantee that the same connection between CR concerns, predictions of minority freeriding, and discrimination can be recorded outside of the lab, nor that it is not already accounted for by other social, economic, political, and psychological factors. Moreover, the laboratory provides little understanding of how some individual’s support for *various types* of common resources relates to their levels of prejudice against minority groups, such as immigrants. For a person supporting more public spending on border control this relationship might be fundamentally different than for a person supporting more spending on programs to address social inequality. Thus, the central question for the current research is, how do support for, and predictions about, various types of CR management relate to attitudes towards a salient minority group like immigrants in comparison to other predictors of prejudice.

CRs are shared in a variety of ways, take different forms, and have various goals and beneficiaries which may change the way individuals think about and relate to them. In this work, we limit ourselves to testing the impact of CRs which are non-excludable, renewable, generated through large-scale cooperation, often funded from taxes, and usually managed by governmental institutions. In other words, we targeted those resources the maintenance of which resembles a public goods game most closely. We included two theoretical dimensions in our selection of CRs. The first dimension represents those resources which benefit the whole community (e.g., roads) or vulnerable groups (e.g., retirement homes). Previous research has recorded a negative relationship between support for these types of resources (hereafter called universal resources, UCR) and prejudice against immigrants (e.g., Schmidt-Catran & Spies, 2016). Furthermore, values associated with the willingness to support UCRs predict overall less parochial attitudes (Grigoryan & Schwartz, 2021), while more negative, “othering” perceptions of immigrants or other minorities relates to reluctance to allow them access to the group’s resources (Wenzel et al., 2008). In line with these findings, we expect higher levels of support for UCRs will predict less prejudice against immigrants (H1). The second dimension represents those resources which address the security of the community and guard its various resources from exploitation. For example, police and law enforcement agencies prevent and prosecute property crimes, including abuses of common resources (e.g., tax evasion, welfare fraud, environmental pollution), while military and border control prevent internal or external enemies from exploiting the ultimate common resource of the nation, its territorial integrity. We predicted that support for those agencies, institutions and infrastructure (hereafter called security resources, SCR) would contribute towards a more negative attitude towards immigrants (H2), as they would align with a more parochial approach to CR management (Kustov, 2021) where outgroup members like immigrants are excluded. Indeed, perceived need for security often relates to more prejudice, including institutional discrimination of minority groups which are identified as particular threats (Gilks, 2019), while a sense of threat from immigrants enhances preferences for greater spending on law enforcement (Fink & Brady, 2020). Not only can threat-perception increase prejudice, but prejudice can also increase threat-perception (Bahns, 2017), meaning that the connection between support for SCRs and negative attitudes to immigrants may represent part of a feedback loop. Moreover, while UCRs provide productive benefits and services for a variety of needs which can be enjoyed by group members regardless of ethnic majority/host status, SCRs are there to (among other things) protect UCRs from exploitation. Rather than providing resources which might be abused by freeriders, as UCRs do, the goal of SCRs is to, among other things, monitor and sanction freeriders. If immigrants and other minority groups are seen as freeriders *a priori*, then we would expect support for those resources which disincentivize freeriding (e.g., legal ramifications for welfare fraud) to relate positively to prejudice against such groups. Finally, in line Šimunović (2017; Simunovic et al., 2023), we predict that those people who assume minority group members will benefit more from CRs while contributing less, would exhibit more negative attitudes towards immigrants (H3).

To test our hypotheses, we conducted two survey-based studies. The first was exploratory in nature, addressing hypotheses H1, H2, but not H3. The second study refined the measures of attitudes and expectations about CR management, included more alternative predictors of prejudice, and tested all of our hypotheses more directly, on a more homogeneous sample.

# Study 1

The purpose of Study 1 was to test how support for different types of CRs associated to negative attitudes towards immigrants. We included support for UCRs and SCRs alongside other variables which may account for variance in prejudice against immigrants, including national pride and left-right political orientation, as well as a number of demographic factors. We argue that support for various CR would add to the explanation of prejudice above and beyond these factors.

# Method

## Participants

Participants were recruited via Prolific Academic, an online recruitment agency. They were compensated with £7.5 for their time (see Supplementary Materials for details). We attained 180 complete responses with a relatively even distribution between the sexes (88 female, 92 male). The majority of the sample was European (82.2%), but participants reported ethnic identifications from every inhabited continent. Mean age was 29.9 years (*SD* = 10.2). The majority of the participants placed themselves around the political centre (60.0%), identified themselves as “not religious” (62.2%), and placed themselves in the middle class (51.7%).

## Measures

### Support for public goods

Support for contributions to CRs was our core predictor variable and was measured first. Participants were presented with a definition of common resources as “social benefits and services (e.g., schools, roads, the police, public libraries, public parks…) which are paid for by taxes”. They were then presented with a list of typical CRs which are maintained on the national level through tax-based funding (e.g., kindergartens, military personnel, etc.; for the full list, see Supplementary Materials). For each of the items, the participants indicated a response on a scale of 1 to 5, where 1 indicated preference for “A lot less” spending, 5 for “A lot more”, and 3 a preference for no change to government spending.

### National pride

National pride was measured using three items from the ISSP-2013 survey on national identity (National Identity III; ISSP Research group, 2013). All three items recorded preference for one’s national belonging (e.g., “I would rather be a citizen of my country than any other country on the planet”). They loaded onto a single factor with a satisfactory level of scale reliability (*α* = .78).

### Attitudes towards immigrants and immigration

Attitudes towards immigrants and immigration represent our main outcome variable. Seven items were selected from the ISSP National Identity survey (e.g., “Immigration is dangerous because immigrants increase crime rates”). Items which indicate more positive attitudes were reverse scored, giving us a measure of prejudice against immigrants. All seven items loaded onto a single factor and achieved a high level of scale reliability (*α* = .91).

### Political orientation, socio-economic status and demographics

We recorded the participants’ gender, age and ethnic identification, as well as degree of religiosity and level of education, as control variables. Religiosity was measured using a single item, where participants identified themselves as religious, somewhat religious, or not religious. We measured political orientation on a 9-point scale where 1 designated “far left”, 5 designated “center”, and 9 designated “far right”. We used the participants’ self-reported sense of belonging to a social class (upper, upper middle, middle, lower middle and lower), as well as their sense of difficulty at “making ends meet” (measured on a 7-point Likert scale) to capture their socio-economic status. Finally, we asked the participants’ perceived degree of social separation between the classes on a 7-point Likert scale where 1 indicated “no differences”, and 7 indicated “extreme differences”.

## Procedure

Participants were invited to complete a “general attitude questionnaire”. Their rights as participants were explained in a consent form which preceded the questionnaire. The order in which the questions were presented corresponds to the order in which we have just described the materials used in the study.

## Results

### Support for Public Goods

We begin our analysis by looking into the factor structure for our list of CRs. We conducted an exploratory factor analysis with a forced two-factor solution, expecting to find a split between Security and Universal CRs. The size and composition of our sample exceeded the minimum recommended for a 2-factor solution for items whose intercorrelations fit a “wide” model of commonality (Mundform et al., 2005). We used maximum likelihood as an extraction method and direct oblimin rotation with a default delta of 0. We achieved a satisfying *KMO* = .77 and significance on Bartlett’s test of sphericity (*χ* = 1808.22, *df* = 496, *p*< .001). The two-factor solution explained 29.26% of the variance and reflected the expected split (see Supplementary Materials). Participants clearly distinguished between SCRs (e.g., military personnel) and UCRs (e.g., kindergartens), as we anticipated. Support for the two types of resources was not significantly correlated (see Table 1).

Insert Table 1 here.

### Support for Common Resources and Prejudice against Migrants

Next, we conducted an OLS linear regression to test whether the support for UCR and SCR explains negative attitudes towards immigrants above and beyond other demographic, socio-economic, and psychological variables. We tested four nested models. Model 1 includes demographic variables; Model 2 adds information about the participants’ socio-economic status, political orientation, and perception of social separation between the classes. Model 3 introduces national pride. Finally, Model 4 adds support for universal and security CRs. Table 2 presents the results.

Insert Table 2 here.

All models significantly added to the explanation of the variance. Most of the variance was explained by political orientation, experienced financial difficulty, and support for UCR. In other words, the more politically right-wing the participant, the more difficult their financial situation feels, and the less support for universally beneficial CRs they show, the more prejudiced they are against immigrants. Additionally, we found that male participants reporting significantly more prejudice. National pride had a marginally significant positive association with prejudice, but support for SCRs did not.

# Discussion

This study provided a look at how support for different types of CRs help explain attitudes towards immigrants. Indeed, support for more spending on universal resources contributed to an explanation of anti-immigrant prejudice above and beyond other relevant indicators including socioeconomic status, political orientation, and national pride. Unlike previous research (e.g., Fink & Brady, 2020), we did not find that greater support for spending on the military or police predicted more prejudice towards immigrants. Thus, our hypothesis H1 has been upheld, and hypothesis H2 has been rejected. Participants who supported more investment into common resources, particularly those which directly benefit all members of society or its vulnerable members specifically, also hold less prejudice against immigrants. In addition, we found that a more right-wing political orientation, greater sense of national pride, and more perceived financial difficulty were positively associated with higher anti-immigrant prejudice.

The study has several limitations, chiefly those stemming from the nature of its sample, which was relatively young, international, and multicultural. Recruiting participants internationally presented a problem for the interpretation of political orientation and support for common resources since there is diversity in what the political left or right might mean, and which types of CRs receive more or less attention across societies. Moreover, it was not clear which participants in the study were, themselves, immigrants. Finally, the current study did not address whether attitudes towards minority groups like immigrants can indeed be connected to an a priori assumption that minority groups will not contribute to the CRs while benefiting from them. We will address this, our H3, in Study 2 which will involve a larger and more homogenous sample.

# Study 2

The purpose of Study 2 was to replicate our central findings that support for CRs adds to the explanation of anti-immigrant attitudes above and beyond other established predictors. To address the limitations of Study 1, we included a greater range of such predictors: national identity, civic identity, social dominance orientation, and trust in institutions. We retested all of our hypotheses on a sample of ethnic Croats living in Croatia. This allowed us to account for the diversity in the interpretations of many of our key items, including national pride, CR management, and left-right political orientation. We also included an explicit test of how predictions about minority contributions to, and benefits from, CRs impact prejudice against immigrants (H3).

To determine the necessary sample size, we performed two a priori power analyses using G\*Power 3.1.9.2 (Faul et al., 2007). Both analyses assumed a model with 17 predictors, of which the 4 test predictors (UCR, SCR, Minority Contributions, Minority Benefits) should add between *ΔRPartial2* = .02 (small effects assumed), and *ΔRPartial2* = .09 (medium effects assumed). At *α* = .05 and *1 – β* = .95, this gave us a necessary sample size of between 191 (assuming medium effects) and 934 participants (assuming small effects).

## Sociocultural context

It is worth noting what makes Croatia an interesting socio-cultural and political context in which to study the connection between support for CRs and prejudice against immigrants. It is a post-communist society, having declared independence from Yugoslavia in 1991. This decision was followed by war which split the country and the region along ethnic, national, and religious lines. Croatia’s communist past means that all of the CRs on our list are either fully or partially funded by the government through taxation. Thus, there should be general acceptance that these resources can be funded through taxation, and a common, broad anchoring point when deciding whether less or more funding is needed.

Croatia is ethnically homogeneous, with only around 10% of the population declaring themselves as members of ethnic minorities (Croatian Bureau of Statistics, 2021). Most represented are Serbs, Bosniaks, Italians, Albanians, and Roma, whose presence in Croatia can be measured in centuries. Under 1% of the population has a recent immigration background (Gregurović et al., 2016). However, since its entry into the European Union in 2013, Croatia’s place in the scheme of international migration has slowly been changing, with low but gradually increasing rates of immigrants arriving in the country (Tatalović & Jakšević, 2016). For the first time in modern history, this includes a noticeable number of immigrants from cultures and ethnic groups other than those of the already established ethnic minorities in Croatia (e.g., Afghan, Filipino, Syrian).

This is not to say that there is no prejudice against ethnic minorities and immigrants. Authors find socialist heritage translates easily into parochial attitudes (Dušanić et al., 2019; Majstorović & Turjačanin, 2013). Tensions inherited from the Yugoslav wars still plague Croatia, as do new anxieties about refugees from the Middle East and Afghanistan. Immigrants and asylum-seekers, despite their low number, are perceived as a salient socio-cultural and economic threat (Čačić-Kumpes et al., 2012; Gregurović et al., 2016). Nevertheless, the discourse is currently developing and does not yet contain elaborate anti-immigrant narratives, like the ones described by Hogan and Haltinner (2015), which explicitly associate migrants with freeriding on CRs.

In short, Croatia presents a hard test of our hypotheses. It is a developing target of immigration with a socialist heritage. It does not yet have well-established narratives about immigrants as “social parasites”. Additionally, it is characterized by high and mostly uncontroversial support for public resources.

## Method

### Participants

We recruited 347 participants for this study. In an effort to attract non-student populations, we initiated snowball sampling via Facebook. A link was provided, inviting participants to a study of “attitudes and behaviors related to current social issues”. All participants were asked to forward the invitation to friends and family. Since our hypotheses related to ethnic majority populations living in the nation-state, we excluded members of ethnic minorities (*N* = 35) and Croatian citizens living outside of Croatia (*N* = 13). In addition, we excluded one participant for being underage (13 years old). This left 298 participants (159 female, 136 male, 2 non-binary). Average age of participants was 46.6 years (*SD* = 12.9). The majority of the participants placed themselves around the centre of the political scale (57.4%) and identified as members of the middle class (68.1%). Participant’s religious orientation was more evenly distributed than in Study 1 with 35.2% religious, 27.2% somewhat religious, and 37.6% identifying as not religious.

### Measures

The instruments used closely resembled those used in Study 1. Where possible, we relied on existing translations. The measure of prejudice against immigrants, national and civic identities, and national pride was taken from the Croatian version of the ISSP survey on National Identity (2013). Likewise, we used the validated Croatian version of the Social Dominance Orientation scale (Maričić et al., 2008). The other items, including the original items (support for common resources and prediction about minority contributions to / benefits from common resources) were translated by the first and fourth authors, and back-translated by a volunteer student assistant. The student assistant was a native Croatian speaker, studied English, and was unaware of our hypotheses. To conserve space, we will only discuss those materials which were added or changed in comparison to Study 1. For more details, see Supplementary Materials.

### Minority Contribution and Benefits

To test whether prejudice against immigrants truly has to do with the assumption that minority groups will freeride on common resource management (H3), we included two new, original items. Minority Contributions was a measure of the amount of money ethnic minorities hypothetically contributed to CR management through taxation in comparison to the average citizen. The participants were invited to imagine that an average Croatian citizen paid 100 HRK (appr. 13.5 EUR) per month to finance various types of CRs. They were asked to estimate how much an ethnic minority group member paid for the same purposes. Similarly, Minority Benefits was a measure of how much an ethnic minority group member gains from public services each month, if the average Croat benefitted 100 HRK.

Since recent immigrants will benefit more from public services and benefits than they contribute to them simply because they have not been in the country long enough, we have chosen to word the item in terms of ethnic minorities, not immigrants. This allowed us to avoid an over-inflated difference in anticipated contributions and benefits while still capturing the intuitive prediction of minority cheating. While the categories “immigrant” and “ethnic minority” are not the same, there is a substantial amount of overlap. People who tend to be prejudiced against one group often hold prejudices against the other in what some authors dub Group-focused Enmity (Zick et al., 2008). Moreover, discrimination against immigrants affects ethnic minority immigrants particularly negatively (e.g., Thomann & Rapp, 2018), meaning there is at least some commonality in why these two groups are targeted. Finally, our reasons for including the measures described above rely on the idea that people would form predictions about minority freeriding (benefitting from common resources without contributing to their maintenance) based on biased intuitions about minority/majority relationships, irrespective of what the actual minority might be. Thus, we assume that individuals who predict ethnic minority group members would take advantage of common resources are also likely to overestimate the likelihood immigrants will do the same. In other words, no matter what the minority group might be, the intuition would be similar.

### Social Dominance Orientation

We included a measure of Social Dominance Orientation (SDO) in our Study 2 as an important predictor of anti-immigrant prejudice. SDO measures the individual tendency to uphold social hierarchies which favor one group over another. It has been associated to more neoliberal attitudes towards welfare policies (e.g., Azevedo et al., 2019), and prejudice towards ethnic, religious, gender, and sexual minorities and immigrants (e.g., Asbrock et al., 2010), particularly among members of the advantaged group (e.g., ethnic majority). As such, SDO could on its own explain prejudice against immigrants, as well as account for any potential influence of support for common resource management.

SDO commonly takes only one dimension in Croatia (Grgurev, 2018). Indeed, all of the items loaded on the same single factor. Cronbach’s alpha for the resulting variable was .89.

### National pride and identity

For our measure of national pride, we included the three items from Study 1, as well as an additional three items dealing with positivity about life in the nation-state, sense of shame for some aspects of national character, and one item about the importance of national heritage. All the measures loaded onto a single factor and achieved Cronbach’s alpha of .82.

We supplemented the measure of national pride with two single-item measures of national and civic identity. These asked participants to indicate their level of “feeling connected” with Croatia (national identity) and with fellow citizens (civic identity) on a 7-point scale. The two items correlated at *r*(290) = .64 (*p*<.001).

### Institutional trust

We added a measure of trust in institutions, listing 12 institutions relevant to Croatian society following the list from the World Values Survey (e.g., mass media, police, universities, parliament…). Participants indicated to what degree they found each of them trustworthy on a 7-point Likert scale. The logic behind including this measure is that, if concerns about government-managed public goods are related to more negative attitudes towards immigrants, then the participants who find governmental, and other social, institutions more trustworthy should have lower concerns, and therefore less prejudice. Our participants expressed highest levels of trust towards scientists (*M* = 4.1, *SD* = 0.72), and lowest levels of trust towards politicians (*M* = 1.64, *SD* = 0.71). Trust in institutions achieved satisfactory loadings for a one-factor solution and a Cronbach’s alpha of .79. We treat it as a single average score of trust in social institutions.

## Procedure

Once the participants clicked on the link to our study, they were taken to an introductory page where they were informed about their rights, assured of their anonymity and the confidentiality of their data. No compensation was offered.

Participants were first asked for their support for CRs and predictions about minority contributions and benefits. Thereafter we recorded their political orientation, degree of trust in institutions, levels of national and civic identity, national pride, SDO, and attitudes towards immigrants, in that order. The last block of the questionnaire measured participants’ demographic and socio-economic backgrounds.

## Results

### Support for Common Resources

We once again attained our theorized two-factor structure, indicating participants differentiated between UCRs and SCRs, with only minor discrepancies in comparison to Study 1 (see Supplementary Materials). The data was well suited for the analysis (*KMO* = .90; Bartlett’s test: *χ* = 4218.17, *df* = 496, *p* < .001). The two-factor solution explained 39.71% of the variance. Both subscales showed good reliability with Cronbach’s *α* of .90 for UCR (19 items), and .79 for SCR (7 items). Unlike in Study 1, support for the two types of resources were significantly positively correlated with a small-to-moderate effect size (see Table 1).

### Predictions about Minority Benefits and Contributions

We continue our analysis by looking into predictions about the contributions to, and benefits of, CRs for ethnic minorities living in Croatia. Overall, our participants estimated that a member of an ethnic minority contributes significantly less than they benefit (*MContribute*(290) = 74.32, *SD* = 39.06; *MBenefit*(290) = 92.67, *SD* = 86.05; *t*(289) = -3.19, *p* = .002, *d = 0.38,* 95%CI [-28.53, -6.78]). Compared to the given hypothetical contributions of the average citizen (100 HRK), the predicted contributions of minorities were significantly lower (*t*(289) = -10.76, *p*<.001, *d* = 1.27). This was not the case for the predicted benefits enjoyed by members of ethnic minorities, which were estimated to be equivalent to those of the average citizen (*t*(291) = -1.45, *p* = .15, *d* = 0.17). Predictions about contributions to, and benefits from, common resources were not significantly related to each other. Minority Contributions, however, were negatively correlated to support for SCRs (see Table 1).

Insert Table 3 around here.

### Support for Common Resources and Prejudice against Immigrants

To address our hypotheses, we perform a hierarchical linear regression that predicts prejudice against immigrants by comparing 4 nested models (see Table 3). Model 1 introduces demographic information; Model 2 adds political orientation and socio-economic indicators. Model 3 adds national and civic identity, national pride, and SDO. The final, Model 4, includes our main predictor variables: predicted minority contributions, predicted minority benefit, and support for universal and security CRs. Each model was statistically significant and added to the explanation of the outcome variable. The final model explained 43.5% of the variance. None of the demographic variables (age, gender, religiosity, and education level) had a significant association with prejudice in the final model. Gender did not contribute to an explanation of prejudice, but a moderate positive association between prejudice and religiosity was sustained until Model 4. The majority of the variance was explained by support for SCR, UCR, SDO, political orientation, and predictions of minority contributions. In other words, we find that prejudice against immigrants is predicted by lower support for UCR, higher support for SCR, higher SDO, a more right-wing political orientation, and predictions of lower contributions to common resources by ethnic minority members. These findings support H1 and H2, and partially support H3.

Trust in institutions did not reach significance until the final model, once UCR and SCR were included as predictors in the model. This might indicate that trust in institutions only has a “pathway” to prejudice against migrants when support for CRs is considered. In our case, the less trust in institutions our participants had the more prejudice they held against immigrants, and the more they supported the financing of those resources which would address the uncertainty (SCR) while de-prioritizing universally beneficial CRs. However, given the small effect size, this result should not be over-interpreted.

Surprisingly, our measure of national pride was not significantly associated with prejudice against immigrants. Neither did the measures of national and civic identity. Unlike in the international sample, Croatian participants’ socio-economic indicators and gender did not predict their attitudes towards immigrants either.

A sensitivity power analysis was conducted to determine whether our achieved sample size fell in the range where the achieved effect size could be reliably detected (*ΔRPartial2* = .067). Indeed, the sensitivity analysis indicated our sample size was sufficient to detect even slightly smaller effects (*ΔRPartial2* = .063).

## Discussion

We were once again able to record the negative association between support for UCRs and prejudice against immigrants, which extended above and beyond other relevant indicators, as predicted in H1. The more people supported public spending on resources which benefit the whole population or its most vulnerable members, the less prejudiced they were against immigrants. We also recorded a positive association between support for SCR and prejudice as we proposed in H2, and which accounted for most of the variance in this study.

Croatian participants predicted ethnic minorities would contribute less to the maintenance of CRs. The smaller the predicted contributions to CR management, the more prejudiced the individual was against immigrants. The same was not true for predicted benefits ethnic minority members might enjoy from common resources which was not significantly related to prejudice. Thus, our H3 was partially supported.

The positive association of prejudice with SDO and a right-wing political orientation, both of which explained a large portion of the variance, was replicated. No significant relationship between national pride or identity on prejudice against immigrants was recorded. This is not in keeping with previous results from a similar cultural context (e.g., Dušanić et al., 2019). Higher religiosity predicted more prejudice against immigrants in Croatia. This association was partially explained by a more right-wing orientation in Model 2, and then fully explained in Model 4. This supports Sekulić’s (2016) findings that religiosity in Croatia can come to uphold more right-wing, as well as more neoliberal, political preferences which seek to disassemble the welfare state and protect existing resources against immigrants and other outgroups.

## Limitations

Our recruitment method encouraged self-selection. The sample was highly educated and relatively well-off. 60.1% of our participants hold a Master’s degree or a PhD. Additionally, 68.1% identified as members of the middle class and only 7 individuals (2.4%) were unemployed, far below the national average (8%; HZZ, 2021). This likely contributed to some of the inconsistencies in the findings from Study 2 compared to those from Study 1. Thus, the fact that socio-economic indicators, level of education and perceived financial difficulty did not play a part in explaining prejudice against immigrants should not be over-interpreted. It is likely that the contribution of perceived financial difficulty to explaining prejudice would be replicated in Croatia given a more balanced representation of different socio-economic backgrounds in the sample.

# General Discussion

We had set out to clarify the relationship between attitudes towards various types of CR management and prejudice against immigrants. We viewed this relationship through a game-theoretical lens, in which the incentives inherent in social dilemma situations like the PGG create specific cognitive biases and shape attitudes towards various target groups. We wondered whether this perspective had value outside of the laboratory, where CR management and its dilemmas are neither salient nor transparent, where the CRs are not a monetary pot equally redistributed to all but a set of interconnected social goals, and where real, meaningful identities and political preferences come into play.

Overall, our results show that considering attitudes towards, and predictions about, various types of CRs contributes to our understanding of prejudice against immigrants above and beyond other, established factors like a more right-wing political orientation, national pride, and SDO. Greater support for those resources which provide direct benefits to the community or its most vulnerable members is related to lower prejudice against immigrants, whereas greater support for the resources which promote security and parochialism are related to stronger prejudice. Across the studies, there was broad agreement about which type of resource fell into which of the two factors, with only minor discrepancies between the international and Croatian samples. In Study 2, we dug further into some specific beliefs which emerge from game theory and might help us understand the nature of the prejudice better. We find that people assume ethnic minority groups would contribute less to the management of CRs in comparison to average citizens while benefitting to a similar degree. This biased prediction spilled over from one target group (ethnic minorities) to another (immigrants) and contributed to prejudice against them.

It is important to consider what it means that a person is more or less willing to support UCRs and SCRs. For example, this distinction closely aligns with the left-right political orientation, which often entails more welcoming attitudes to immigrants and other minorities, greater support for UCRs, and lower support for SCR, acting as indicators of the same socio-political “profile”. Moreover, the support for either UCR or SCR also aligns with the distinction between universalism and conservation values, which in turn predict in- and outgroup attitudes (Schwartz et al., 2012; Grigoryan & Schwartz, 2021). In two studies, we showed that support for these types of CRs predicts prejudice over and above political orientation; future studies could additionally control for values. However, values are abstract ideals that can translate into attitudes in different ways (Ponizovskiy, 2021; Ponizovskiy et al., 2019), whereas support for different types of CRs is a more proximal predictor of attitudes towards immigrants. We would expect similar associations found here to replicate when values are included in the models.

The current research is, of course, correlational in nature. Thus, we cannot conclude that assumptions about different groups’ contributions to common resources, or one’s own support for public spending, causes more or less prejudice against immigrants. This would require an experimental approach where changes in prejudice against immigrants are related to different levels of common resource management concerns or preferences. Nevertheless, our studies opens new avenues for understanding and managing intergroup conflict in heterogeneous societies. It suggests that concerns about CR management are not merely a convenient excuse in anti-immigrant narratives of political elites, but rather exploit the existing intuition that those resources would be endangered by outgroup members, particularly minority group members. If these are indeed relevant motivators of prejudice against migrants and potentially other minority groups, then a reasonable course of action is to ask ourselves what we might change about CR management to alleviate concerns about their sustainability and resilience. Our preliminary findings of the role of trust in institutions on prejudice against immigrants, which only emerges when CR management is considered, bolsters the importance of this question. Considering the fact immigrants are a net benefit to societal wealth (e.g., Boubtane & Dumont, 2013), and that their use of public services and benefits is restricted and well monitored, sometimes unjustly (e.g., Thomann & Rapp, 2018), it should be clear that immigrants do not actually endanger common resources in industrialized societies. To what extent does a lack of trust in the institutions which actually manage common resources, or communicate about their management, affect people’s impressions about minority freeriding? In what ways do the reliability, availability, transparency, and stability of CR, as a macro-level variable, affect outcomes for its immigrant populations and the majority ethnic group’s feelings towards them? How could we communicate about the part minorities and immigrants play in CR management in a way which alleviates suspicions about them? Addressing fears about CR management might be a way to reducing intergroup anxiety and prejudice on a macro-level.

## Conclusion

Our work has provided two empirical tests of the association between support for, and predictions about, communally managed resources and prejudice against immigrants. Indeed, we find such a connection and test it against other socio-psychological indicators of prejudice. We assumed people would broadly recognize two different types of resources: those which create benefits for the community or some part of it, which we dubbed universal CRs, and those which protect community resources and sanction abuses of them, which we dubbed security CRs. Both types significantly contributed to an explanation of prejudice in opposite directions, although the association is less stable in the latter case. Thus, overall, valuing UCRs related to less, but valuing SCRs to more prejudice, independent of SDO, socio-economic status, political affiliation, or national pride. Potentially, a key cognitive mechanism is the prediction that minorities overall are more likely to freeride. These intuitions are not necessarily tied to any one group, but easily spill over onto other targets.

**Data Availibility**

In compliance with open data policies, data from both studies (.sav) can be accesses at: https://osf.io/cw6eh/?view\_only=974e6f45a91d492abbdf94f287669f81

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