Plattform für Umfragen,
Methoden und empirische Analysen (PUMA)

PUMA Survey VI.1

Ergebnisberichte der einzelnen PUMA-Befragungsmodule

Frühjahr 2019

Plattform für Umfragen, Methoden und empirische Analysen (PUMA)
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PUMA
Plattform für Umfragen,
Methoden und empirische Analysen

VORWORT

PUMA, die **Plattform für Umfragen, Methoden und empirische Analysen** ist ein Kooperationsprojekt, das vom Bundesministerium für Bildung, Wissenschaft und Forschung (BMBWF) im Rahmen der Hochschulraumstrukturmittel 2013 gefördert wird. Das Projekt kam mit der sechsten, hier vorliegenden Erhebungsgwelle, zu einem Ende.

PUMA schrieb in regelmäßigen Abständen die Förderung sozialwissenschaftlicher Umfragemodule aus, aus denen nach einem externen anonymen Begutachtungsverfahren die besten Einreichungen ausgewählt wurden.

Im folgenden Bericht finden Sie die zentralen Ergebnisse des PUMA Survey VI.1. Der Datensatz sowie die Metadaten können über das *Austrian Social Science Data Archive* (AUSSDA) für wissenschaftliche Zwecke heruntergeladen werden (https://data.aussda.at/).

Der vorliegende Bericht ist mit folgender Referenzierung zu nutzen:

PUMA (2019). PUMA Survey 6.1. Modulberichte. Einblicke in Österreichs gesellschaftlichen Wandel, durchgeführt von Statistik Austria, Wien.

Die PUMA-Projektleiterin

Univ.-Prof. Dr. Sylvia Kritzinger

Informationen zum Projekt PUMA:

Name: Plattform für Umfragen, Methoden und empirische Analysen (PUMA)
Laufzeit: 2014-2018
Leitung: Universität Wien, Univ.-Prof. Dr. Sylvia Kritzinger
Projektkoordination: Mag. Dr. Katharina Götsch

Partnerorganisationen:

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Informationen zur Befragung

Allgemeines

Der PUMA Survey VI.1 besteht aus insgesamt drei einzelnen Modulen, die gemeinsam in einer Umfrage eingesetzt wurden. Die Module wurden über eine öffentliche Ausschreibung von PUMA eingereicht und einem externen anonymen Begutachtungsverfahren unterzogen.

Die Befragung wurde von PUMA (unter der Leitung der Universität Wien) beauftragt und von *Statistik Austria* durchgeführt. Die Finanzierung der PUMA Surveys sowie des PUMA-Projekts erfolgt durch das BMBWF im Rahmen der Hochschulraumstrukturmittel 2013.

Die Umfrage wurde als Online-Befragung (CAWI) durchgeführt. Die RespondentInnen wurden mehrfach kontaktiert und erhielten Incentives in verschiedener Höhe und Form (experimentell variiert).

Die Umfrage fand in deutscher Sprache statt. Einige der folgenden Teilberichte sind in englischer Sprache verfasst, da die Teams teilweise multilingual zusammengesetzt sind.

Es handelte sich um eine Querschnittsbefragung.

Stichprobe

Die repräsentative Zufallsstichprobe wurde zum einen neu über das Zentrale Melderegister (ZMR) gezogen. Zum anderen wurden frühere TeilnehmerInnen des PUMA V Surveys kontaktiert. Grundlage ist die Wohnbevölkerung in Österreich zwischen 16 und 74 Jahren.

Die Nettostichprobe besteht aus 1.088 ausgefüllten Fragebogen, davon stammen 734 RespondentInnen aus der Liste früherer PUMA-TeilnehmerInnen, 354 Personen wurden neu rekrutiert. Kontaktiert wurden 1.956 Personen brutto.

Erhebungszeitraum

Start: 28.9.2018

Ende: 23.11.2018

Principal Investigators

Die Namen der jeweiligen ModulurheberInnen finden Sie in den entsprechenden Abschnitten dieses Dokuments.

Fragebogen und **Codebook** finden Sie auf der PUMA-Website unter: https://www.puma-plattform.at/puma-umfragen/ sowie über das AUSSDA.

Inhaltsverzeichnis: Überblick über die Module

1. Politics, competence and gender

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Keywords

Gender, stereotypes, portfolios, ministers, qualification

Short abstract

Do voters discriminate against female politicians? The politics and gender literature has produced mixed findings on this question. This project argues that we need to take the gendered nature of political offices into account. Drawing on the literature of gendered appointment patterns in executives and legislatures, it conjectures that gender discrimination in voter evaluations should depend on the policy domain of the office in question. A vignette experiment was fielded in a PUMA survey to test this proposition. The results show that voters do not discriminate overall, but they prefer men in stereotypically male roles and women in stereotypically female roles.

Research interest and aims

Political scientists have long hypothesized that the continued underrepresentation of women could stem from outright discrimination. If voters, on average, prefer male politicians to female ones, female candidates will fare worse against equally qualified men. Survey evidence shows that substantial minorities in Western Europe still view men as better political leaders than women: between five percent of respondents in Iceland and 20 percent of respondents in Austria agree with this proposition (EVS 2018); numbers in Eastern Europe are higher still. Even so, many studies have failed to produce evidence of a direct electoral penalty for female politicians (Lawless 2015). Survey experiments even tend to find that voters favor female over male candidates (Schwarz, Hunty, and Coppock 2018).

The central contribution of this paper is to bring the gendered nature of political offices into the equation. While gender inequality has decreased in quantitative terms, there remains a strong qualitative imbalance. The underrepresentation of women is much less pronounced in policy areas that are viewed as stereotypically female, such as health care, family affairs, culture, and education, whereas 'male' domains remain dominated by men.

Theoretical and methodological framework

Based on the literature, I conjecture that outright discrimination and double standards may occur in a domain-specific way. Rather than perceiving women as less qualified across the board, voters may view women and men as more or less qualified depending on the nature of the position that they are trying to obtain. Women may therefore be seen as more qualified for offices that deal with stereotypically female issues, whereas men may be favored to occupy positions in traditionally 'male' domains.

To produce an empirical test of this proposition, I rely on data from a PUMA survey. A vignette experiment was conducted in late 2018 by Statistics Austria on an online sample of 1,089 individuals randomly drawn from the Austrian population register.

The vignettes asked respondents to evaluate the qualification of a fictitious person being considered for one of four ministerial portfolios, two 'male' ones (defense and finance), and two 'female' ones (health and family affairs). Each respondent evaluated one candidate for each office (i.e. four vignettes), with the sequence of portfolios randomized per respondent to avoid order effects. The vignettes contained a table outlining personal and professional attributes of the fictitious candidates: gender, age, marital status, education, management experience, political experience, volunteer activities, and three self-ascribed character traits. The values of these attributes were randomly drawn from a set of two or three categories (see below), thus allowing for causal effects to be estimated:

It is important to have qualified people in politics. Yet people have different opinions on which individuals are qualified for political office.

Please take a look at the description of this person who is being considered as the Minister of Defense/Finance/Health/Family affairs:

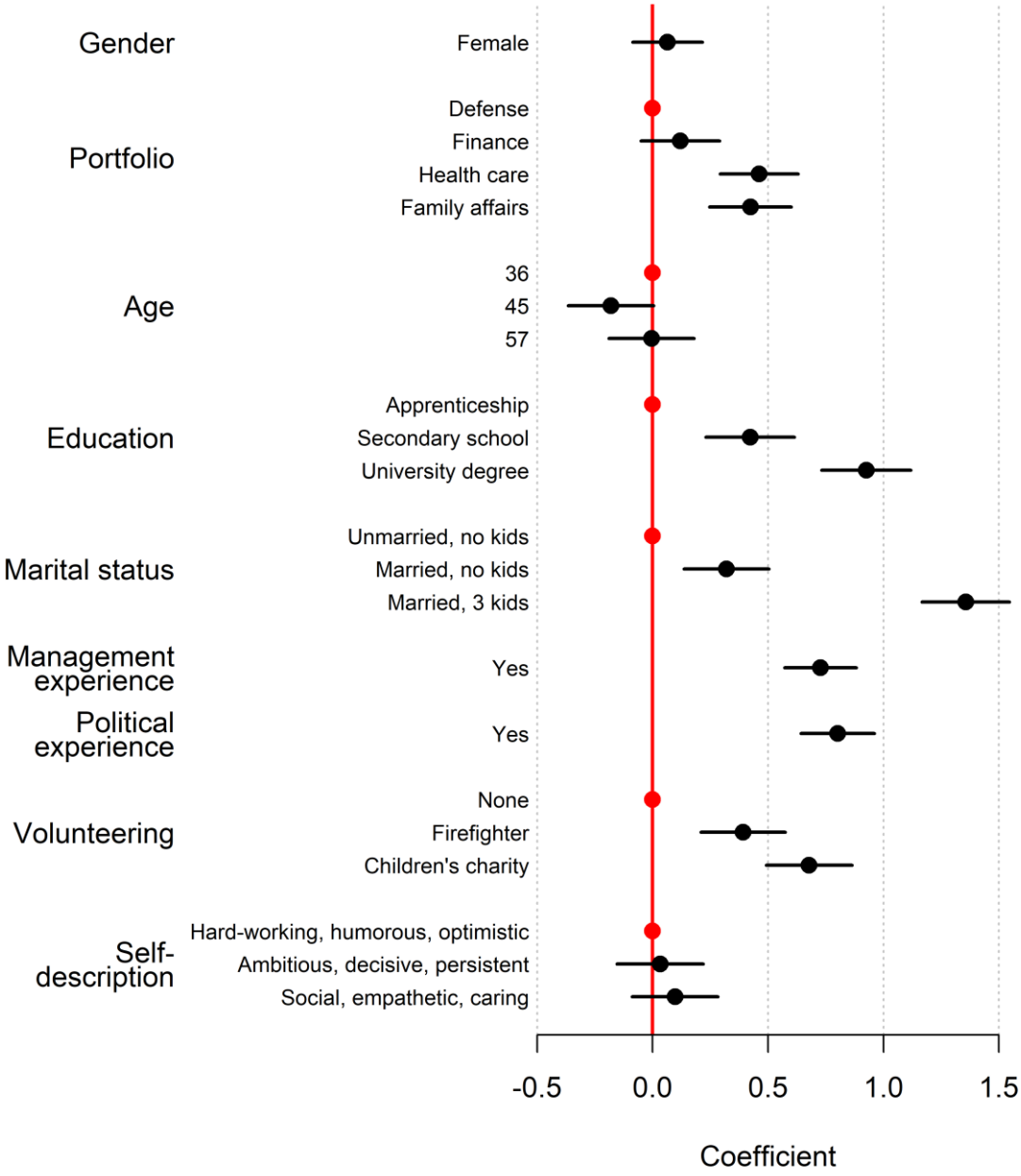
Gender	- Male - Female
Age	- 36 - 45 - 57
Marital status	- Unmarried - Married, no children - Married, 3 children
Education	- Apprenticeship - Secondary school - University degree
Management experience in the private sector	- No - Yes
Political experience	- None - 12 years in parliament
Volunteering	- None - Firefighter - SOS Children's Villages
How the person would describe themselves in three words …	- Ambitious, decisive, persistent - Social, empathetic, caring - Hard-working, humorous, optimistic

In your opinion, how qualified is this person to be the Minister of Defense/Finance/Health/Family Affairs?

0	1	2	3	4	5	6	7	8	9	10
Not at all qualified										Highly qualified

Selected results

The figure below shows the direct effects of the randomized attributes on the 11-point evaluation score (0 to 10). The female gender coefficient is not statistically distinguishable from zero. The data thus provide no indication of an outright voter bias against female candidates for political office.

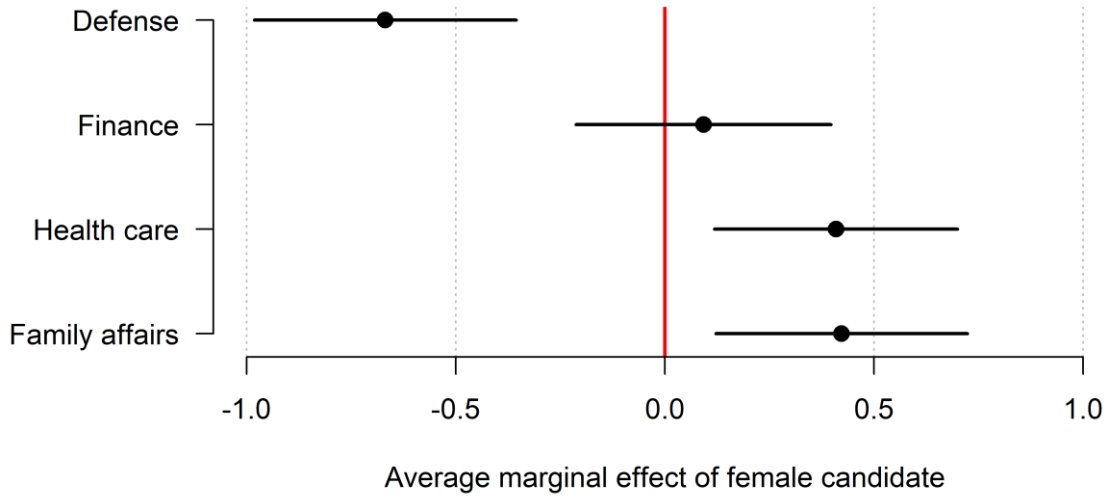


The other coefficients are mostly in line with conventional wisdom. Respondents prefer individuals with higher education levels and those who are married and have children. They also price political and management experience. In addition, they see volunteering as an asset.

Interestingly, the portfolio variable show some effects, too – but only the 'female' ones (health care and family affairs). Thus, the overall evaluations for these two positions were higher than for the 'male' ones (defense and finance). One possible interpretation of this result is that respondents apply a lower standard in the evaluation of candidates (of either gender) for stereotypically female offices,

thus suggesting some indirect form of discrimination. In other words, positions that are viewed as stereotypically female do not require the same level of qualification as others.

Another result is that the effects of candidate gender vary systematically across portfolios. The figure below depicts average marginal effects (AMEs) for female gender by portfolio.



The effects are negative for defense, zero for finance, and positive for health care and family affairs. Thus, women got lower evaluations for the defense portfolio than otherwise equal men, and better scores for the stereotypically female positions. In other words, respondents preferred stereotype-congruent configurations of portfolios and candidate gender.

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2. Income, tax perceptions, and fairness norms. A survey experiment

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Keywords

Taxation, income distribution, biased perceptions, limited information, distributive justice, system justification theory

Short abstract

Since the 1970s, prominent macro-economic models suggest that higher levels of inequality will lead to more redistribution. However, empirical studies only find mixed support for this mechanism. Besides considering further determinants as explanatory factors, the mediating factor of information becomes more prominent. Recent studies show that individuals are only partially informed and change their preferences if they receive information. Using data from an experimental survey with information treatments, the study asks how information on (i) the relative position of one's personal income and (ii) the present structure of the tax burden influences subjectively perceived levels of fair tax progressivity.

Research interest and aims/objectives

Seminal works in macroeconomic public finance suggested that more inequality should lead to more redistribution (Meltzer and Richard 1981). However, inequality indicators in democracies are rising all over the western world and redistribution measurements are declining (Atkinson 2015; Milanović 2016; Piketty 2014). The empirical evidence of rising inequality levels accelerated research in social sciences combining economic models with psychological and sociological ideas. Trust in the state (Svallfors 2013), social mobility (Piketty 1995) and effort-orientation (Alesina and Angeletos 2005) became relevant explanatory factors for the (lower) demand for redistribution. Recently, debates about media distrust and fake news highlighted another important moderator of the established determinants of tax preferences: information.

Since the influential work of Cruces et al. (2013), several studies that measure the impact of information on redistribution and tax preferences, through survey experiments, have been published. Together these studies could ascertain that information about the relative income position tends to influence certain group's voting behavior on redistribution issues. However, a second line of research casts doubts on the proposed 'information fix' of the debated inequality-redistribution link. In a series of experiments Trump (2018) showed that providing information on national-level income inequality does not have to result in adjustments in line with utility predictions. Because of status-quo bias and system justification people do not only adjust their preferences but may also alter the amount of

inequality they found to be legitimate. This finding shifts the focus from the rational constraints of self-interest to people's general perceptions of the legitimacy of inequality.

The module adds to this literature by asking how information on the relative position of one's personal income and the structure of the tax burden influences fairness perceptions of different tax levels. Do they lead to an advance of individual rational behavior, or do we have to understand people's perceptions and fairness beliefs to explain preferences for redistribution?

Theoretical framework

The scientific literature on individual fairness perceptions of tax progressivity highlighted two knowledge-based factors: the relative position of oneself in the income distribution and perceptions about the overall level of inequality. First, the relative income position is central for the median voter model as voters must accurately assess their income position in order to be able to maximize their after-tax income (Iversen and Goplerud 2018). However, people struggle to estimate their relative income position in society. Empirical results showed that most people in society have difficulties to accurately guess their relative income position and tend to change fairness assessments on taxes if they receive information about their income position (Cruces et al. 2013; Engelhardt and Wagener 2017). Thus from a net-maximizing perspective with partly informed individuals, we can expect:

> H1: Individuals who learn they are relatively poorer (richer) than they thought are more (less) supportive of progressive taxation relative to individuals who are equally misinformed, but who do not learn their true position in the income distribution.

While the idea of the importance of relative income expands the Meltzer-Richard-model into the realm of limited information, the general approach that one's own relative income is the only relevant determinant of one's preferences for redistribution remains the same. But as Trump (2018) noted recently, this focus on the factors hindering the development of preferences for redistribution might be too narrow. From a broader understanding of rationality, individuals are expected to act not only because they benefit from it, but also because they believe that it is a good or fair thing to do and they have reasons to believe so (Boudon 2003; Opp 1983). To assess the fairness of the distribution of tax burdens, certain perceptions about the current state of these burdens are necessary, but these estimates are often highly incorrect or wrong (Kalleitner and Kittel 2018; Liebig and Mau 2005; Slemrod 2006). In this line, system justification theory argues that new information is biased in favor of interpreting it without challenging our own pre-existing beliefs (Costa-Lopes et al. 2013; Jost and Banaji 1994). Thus, the second hypothesis states that providing information about an increased level of inequality will result in lower preferences for redistribution as people increase the level of inequality they found to be legitimate.

> H2: Individuals who learn that they under (over)estimated the current level of tax progressivity should be more (less) supportive of progressive taxation relative to individuals who are equally misinformed, but who do not learn the current level of tax progressivity.

Methodological approach

This module uses a two-level factorial design with information treatments to assess the causal impact the treatments and their interaction. After stating their own income, respondents with an income greater than zero were asked to estimate their own perceived relative income position in Austria. Half of the respondents were then informed about their objective relative income position which was calculated using the endpoints of the corresponding gross personal income category they provided

earlier in the survey and the official government estimates of the overall distribution of incomes in Austria (Statistik Austria 2018).

Present research on tax perception strongly relies on income tax questions, due to its redistribution characteristics and the more salient structure of direct taxes. But the income tax is only one part of the total tax burden one must bear. An analysis of German data suggests that large numbers of respondents misestimate their tax burdens because they have difficulties to distinguish between taxes (Blaufus et al. 2013; Liebig and Mau 2005). Our approach overcomes this problem because newly established data enables us to provide the respondents with rates of tax burdens including all major direct and indirect taxes (Humer and Moser 2016).

Accordingly, after answering the income questions, respondents were asked to estimate what percentage of income an individual pays in taxes if the individual's monthly income is 1200, 2200, 3200 and 6000 euros respectively. Half of the respondents were provided with information about the current level of tax burdens of the four income groups. Finally, all respondents were asked to elicit their percentage of fair income tax for these income groups. We use these respondents' tax perceptions and preferences to calculate the standard income concentration ratio known as the concentration coefficient (Kakwani 1977). This coefficient (C) can be calculated via the following expression:

$$C = 2\frac{\sum_{t-1}^{T} f_t * \mu_t * R_t}{\mu} - 1$$

Where f_t refers to the population share of group t, μ_t its tax rate, R_t the fractional rank in the income distribution, and μ the overall tax rate. A higher concentration coefficient indicates greater progressivity of the proposed tax scheme.

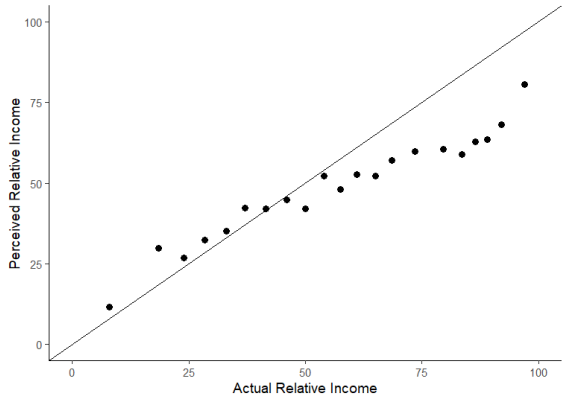
Selected results

Figure 1 displays the average answers of respondents in the 22 income categories.[1] As expected, lower income groups tend to overestimate their relative income, while the rich tend to underestimate their position. Thus, the descriptive results support the relative income argument that individuals will level the amount of inequality, underestimating their relative income difference from the mean.

Figure 2 displays a histogram of the perceived tax concentration coefficient using the answers as described above. The dashed black vertical line indicates that most people (62.6%) underestimated the tax progressivity compared to the current rate in Austria indicated by the solid green line. This results from the fact that respondents underestimated the tax burdens for all income classes, but this error becomes larger the lower the income class. Furthermore, the mean fair tax progressivity is closer to the mean perceived than to the actual rate. This is in line with hypothesis 2 suggesting that perceived levels of fairness are closely related to the perceived current situation.

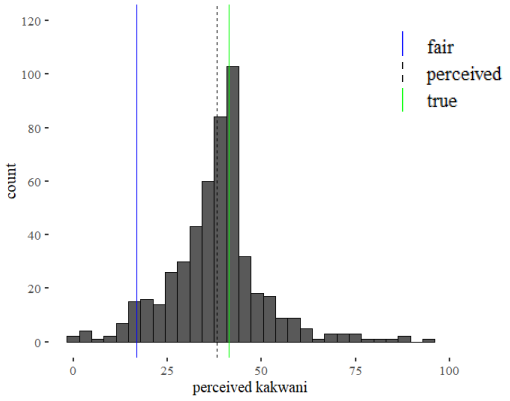
[1] Because of a wrongly displayed value label of a (here unused) question in the questionnaire, the survey was repeated by 184 respondents. This introduced a treatment error as people repeating the survey had previously already been treated. To avoid biases resulting from the repetition, I use the responses of the first survey in the analyses shown here.

Figure 1: Actual and perceived relative income over the income distribution



Note: The solid 45-degree line illustrates the no-bias case. N= 1,006.

Figure 2: Histogram of perceived concentration in the control group

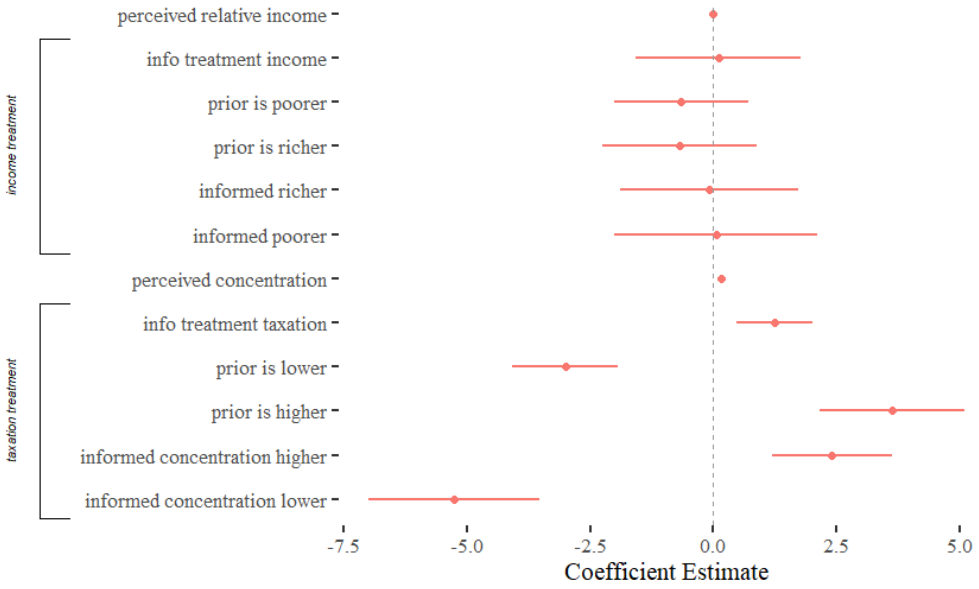


Note: N= 513.

To further analyze the two proposed hypotheses we calculated an OLS-regression estimating the relative impact of perceptions and the information treatments on the preferred fair levels of tax progressivity. Figure 3 indicates that neither the information treatment nor the concentration coefficient on the perceived fair levels of tax progressivity has a significant effect. Thus, we fail to find support for hypothesis 1. Furthermore, we do not find evidence for the proposed net-maximizing mechanism that richer respondents find lower levels of tax progressivity to be fair than poorer respondents.

The main effects of perceived tax ratio and perceived concentration respectively indicate the tendency that higher perceived tax progressivity leads to higher levels of perceived fair tax progressivity levels. Furthermore, informing respondents about the current level of tax progressivity leads them to demand less progressivity if they prior underestimated the tax progressivity and demand more if they overstated the amount of tax progressivity. This way information does not revoke the baseline effect of perceptions but moves the legitimacy anchor. In sum the results indicate that the perceived amount of fair tax progressivity is anchored in respondent's perceptions about the current level of tax progressivity in Austria, thus supporting hypothesis 2.

Figure 3: Coefficient plot of OLS estimates of just tax concentration



Note: N= 971. Adjusted R-squared: 0.32. Whiskers indicate 95% confidence intervals. Controlled for gender, highest level of education, employment status and question anchor (not shown).

Conclusions and Discussion

Income, relative income position, and information on one's income position fail to predict respondent's perceived level of fair tax progressivity. Thus, providing information about rising levels of inequality (or in our case lower levels of tax progressivity) might not fix the paradox finding of coexisting trends of rising levels of inequality and lower levels of preferences for redistribution. Informing people about the amount of inequality in society might even increase biases. Our findings serve as strong evidence that respondent's perceived tax progressivity is a consistent predictor of individual's amount of tax progressivity considered to be fair and that tax information induces people to adapt the amount considered to be fair to the present. Hence informing people about an increasing level of inequality might increase the amount of inequality considered to be legitimate.

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3. Disease avoidance and anti-immigration attitudes? The mediational role of right-wing authoritarianism facets

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Keywords

Immigration, behavioral immune system, right-wing authoritarianism, avoidance motivations

Short abstract

Research in evolutionary social and political psychology suggests that the way individuals deal with pathogens and disgusting stimuli also shapes their political attitudes. This so called "behavioral immune system" might even explain why citizens accept or reject immigration in contemporary societies. The purpose of the current study was to explore facets of disease/pathogen avoidance and the role of right-wing authoritarianism (RWA) as a potential link between such motivations and anti-immigration attitudes.

Research interest and objectives

Background

A standing question in contemporary societies is, why do citizens accept or reject immigration to their country and why do they hold positive or negative views about foreign people? This question is vital, given that immigration will remain one of the topical issues in political conflict and discourse.

Now, a body of literature suggests that the answer to that question can, at least in part, be traced back to psychological responses to different types of threats and uncertainties, which have developed throughout the history of human evolution. According to evolutionary social psychology, the "behavioral immune system" (BIS) is such a psychological mechanism that guides people's social cognition and social behavior in the form of avoidance behavior. The BIS is considered to be a threat management system that has evolved in the human brain to inhibit contact with and infection by pathogens (Murray & Schaller, 2016). It comprises individuals' disgust sensitivity, including food-related "core disgust", a toxin-based food-rejection system (distaste) that is motivated by pathogen avoidance (Oaten, Stevenson, & Case, 2009), but also proactive "germ aversion" (also referred to as perceived vulnerability to disease; see Duncan, Schaller, & Park, 2009).

In particular, a general hypothesis holds that the BIS can trigger opposition to strangers or immigrants, either by "adaptation", i.e., a predisposition against unfamiliar outgroups, or as a "byproduct", i.e., hypervigilance against unfamiliar stimuli (see, for an overview, Petersen, 2019). In short, the BIS may have evolved to an "interpersonal disgust" dimension which functions to protect the social order from strangers or undesirable others.

Indeed, extant research has shown that the BIS (as individual trait) or its activation (by stimuli) can entail more intolerant and more exclusive views and a preference for socially conservative and protective policies. Germ aversion and disgust sensitivity were found to predict the rejection of and prejudice toward outgroups, specifically people with different ethnic background or immigrants (e.g., Aarøe, Petersen, & Arceneaux, 2017; Faulkner et al., 2004; Navarrete & Fessler, 2006). The BIS is also associated with greater conformity to social norms and endorsement of traditional values or, in other words, increased authoritarianism (e.g., Terrizzi, Shook, & McDaniel, 2013; Tybur et al., 2016). In sum, these findings suggest that cognitive avoidance mechanisms to protect the individual from pathogens/diseases are associated with negative attitudes towards immigrants (H1) and endorsement of authoritarian views (H2).

Aim of the present study

The present research asks, why is there a link between avoidance of pathogens and anti-immigration attitudes? More specifically, I challenge the direct-link hypothesis and investigate the mediating role of right-wing authoritarianism (RWA) and its facets. The general idea is that people who feel more vulnerable and physically threatened also develop a heightened need for collective security, rejection of change and an exclusionary social identity, i.e., RWA. This is in line with Duckitt and Sibley's (2010) notion of RWA being a threat-driven motivation or, as Jonas and colleagues (2014) put it, an "abstract defense" to threats. Eventually, as is known, those high in RWA are less tolerant or prejudiced towards outgroups. Consequently, RWA would constitute a mediator between behavioral tendencies concerned with the avoidance of pathogens and attitudes on the immigration issue (H3; see also Green et al., 2010 for a similar reasoning).

Yet, it is not clear which aspect or facet of RWA might be more important in the proposed mediational process. One hypothesis states that the BIS might tag "people who deviate physically or behaviorally from the expected phenotype" (Petersen, 2019, p. 69) as a threat, i.e., aggression towards outsiders (i.e. a facet labeled Authoritarianism; H3a). A second hypothesis states that the BIS might favor a social system that upholds social norms (i.e., a facet labeled Traditionalism; H3b). I will thus investigate mediation along these different RWA facets.

Selected results

Measures

Anti-immigration attitudes (IMM) were measured by four items: "Immigration should be stopped completely", "Crime rates increase in Austria because of immigrants", "The government should be generous in granting asylum", and "Austria's culture is enriched by immigrants".

Right-wing authoritarianism (RWA) was measured by six items (see Aichholzer & Zeglovits, 2015; Beierlein et al., 2014). I further distinguished (1.) RWA-Authoritarianism, measured by "We need strong leaders so that we can live safely in society", "Our society for once has to crack down harder on criminals", and "It is important to also protect the rights of criminals", and (2.) RWA-Traditionalism, which was measured by "This country would flourish if young people paid more attention to traditions and values", and "Our country needs people who oppose traditions and try out different ideas", and "The age in which discipline and obedience for authority are some of the most important virtues should be over".

Two traits were used as indicators of disease avoidance or BIS sensitivity. Disgust sensitivity (DISG) was measured by putting the question into the context of food shortage and nutrition in order to

induce a more realistic scenario. Two novel items then asked about the likelihood of ever eating (a.) insects and (b.) meal worms on a 0 (very unlikely) to 10 (very likely) scale. Note however that openness to "exotic" food might also tap into the trait experiential openness. In addition, Germ aversion (GAV), a facet of perceived vulnerability to disease, was measured by two items (see Duncan, Schaller, & Park, 2009): "I avoid using public transport, because use of the risk that I may catch something" and "I prefer to wash my hands pretty soon after shaking a stranger's hand". Hence, the items particularly focus on contact with strangers.

Age in years, gender (1 = male), formal education (1 = admission to tertiary education), subjective social status (recoded, 1 = bottom to 10 = top), and population density (large city-centers, towns/suburbs, rural areas) were included as exogenous controls for all constructs. This is considered vital to prevent confounding with these variables in observational studies like this one (e.g., Aarøe, Petersen, & Arceneaux, 2017, p. 280).

Results

To investigate the proposed relationships, I analyzed the data by means of structural equation modeling (SEM). According to the results, the proposed model fitted the data adequately: Chi2 (121) = 309.1, RMSEA = .042 [90%-CI = .036, .048], CFI = .957, SRMR = .029 using MLR estimation.

The results in Table 1 present all direct and relevant indirect effects of the SEM. As can be seen, there was a significant association between RWA-Authoritarianism, RWA-Traditionalism and anti-immigration attitudes (IMM), as expected. Also note that the RWA facets' latent variables were strongly correlated (r = 0.785), even after taking into account other covariates. As can be seen, there was a very strong and significant association between IMM and RWA-Authoritarianism (β = 0.623) and a somewhat weaker association with RWA-Traditionalism (β = 0.263). Furthermore, DISG and GAV seem to have a unique contribution in explaining the RWA facets, showing small to medium-sized positive associations (βs = 0.150 to 0.246) on top of the socio-demographic variables. DISG and GAV however seem to tap into different dimension of the BIS, since the two variables were only very weakly correlated (r = 0.095).

More importantly, after taking into account RWA facets as mediating factors, DISG and GAV did not directly explain IMM (β = -0.015 (n.s.) and 0.061 (n.s.), respectively). That said, the indirect associations with IMM were still positive and highly significant: $\beta_{indirect}$ = 0.199 for GAV and $\beta_{indirect}$ = 0.160 for DISG. In other words, the larger part of the association between disease avoidance or BIS sensitivity and immigration attitudes is clearly indirect due to shared variance with RWA. More specifically, the pattern of indirect effects suggests that the association of IMM with pathogen avoidance is mainly due to (i.e., mediated by) RWA-Authoritarianism, $\beta_{indirect}$(GAV) = 0.153 and $\beta_{indirect}$(DISG) = 0.122 (both $p < .001$), and not via RWA-Traditionalism, since the indirect effects $\beta_{indirect}$(GAV) = 0.045 and $\beta_{indirect}$(DISG) = 0.038 were both non-significant by conventional criteria (i.e., $p > 0.05$).

Table 1. Full SEM results of the hypothesized path model

Dependent variable	**IMM**	**RWA Auth.**	**RWA Trad.**	**GAV**	**DISG**
Direct effects:					
RWA Auth.	0.623***				
RWA Trad.	0.255*	(0.785***)			
GAV	0.061	0.246***	0.178***		
DISG	-0.015	0.195***	0.150***	(0.095*)	
Indirect effects:		*via*	*via*		
GAV	0.199***	0.153***	0.045#		
% of total eff.	77%	59%	18%		
DISG	0.160***	0.122***	0.038#		
% of total eff.	110%	84%	26%		
Total effects:					
GAV	0.259***				
DISG	0.145***				
R^2	0.775	0.216	0.188	0.033	0.114

Note: Anti-immigration attitudes (IMM), RWA-Authoritarianism (RWA Auth.), RWA-Traditionalism (RWA Trad.), Germ aversion (GAV), Disgust sensitivity (DISG). Entries indicate *yx*-standardized regression coefficients, correlations in brackets. Two-tailed significance levels: $^{\#}p \leq 0.10$, $^{*}p \leq 0.05$, $^{**}p \leq 0.01$, $^{***}p \leq 0.001$, $n = 890$. R^2 values refer to explained variance, including the socio-demographic controls.

Discussion

A body of literature has suggested that ancient disease-avoidance mechanisms in people, the so called behavioral immune system (BIS), can shape social and political attitudes in contemporary societies. Although theoretically appealing, the present research has argued that we should focus on trying to explain the mediating mechanisms by which basic needs to inhibit contact with disease-causing stimuli tie in with political preferences. I proposed that right-wing authoritarianism (RWA) helps us substantiate the often found relationship between disease avoidance and anti-immigration attitudes, because RWA is a threat-driven motivation that, at the same time, predicts prejudiced and exclusionary attitudes toward outgroups (see also Duckitt & Sibley, 2010).

On the one hand, the study's findings have implications for our understanding of the psychological basis of immigration attitudes and right-wing authoritarianism (RWA). In summarizing, the results corroborate the idea that RWA is a threat-driven motivation that manifests itself in individuals' need for greater collective security and, ultimately, in exclusionary out-group attitudes (i.e., opposition to immigration). On the other hand, the association between food-related disgust, germ aversion and anti-immigration attitudes was primarily mediated by RWA-Authoritarianism. One explanation for a stronger mediational link along the RWA-Authoritarianism facet is that its conceptualization and measurement refers to concrete individuals who (a.) deviate behaviorally from the norm and (b.) pose a potential threat to society's safety (criminals) as well as those who protect (strong leaders), whereas RWA-Traditionalism items refer to more abstract ideas to maintain traditions and moral values. Hence, the former RWA facet might have a more direct cognitive link to threat-avoidance.

Finally, the study's findings also have implications for the debate on political framing of immigration. For example, certain news media genres or parties frequently use metaphors referencing natural disasters to describe immigration or asylum seekers (e.g., flood, invasion, waves), which ultimately raises serious concerns of dehumanization. Equally, contemporary examples provide evidence that

(far right) politicians deliberately use threat narratives that raise (i.e., prime) concerns about infectious diseases spread by immigrants/refugees (see, e.g., Hogan & Haltinner, 2015). Framing immigration as a disease threat could ultimately play into the hands of the far right's nativist-authoritarian political agenda by fostering aggressive-authoritarian views. Moreover, unlike the emotion of anxiety, experiencing disgust and disease threats generally makes people less likely to gather new factual information (Clifford & Jerit, 2018). This could hamper the engagement with facts about causes and consequences of immigration – a prerequisite for reducing existing prejudices.

Additional note

The question module further included an experimental treatment (variable ESMP_EXPGROUP) to elicit both core/pathogen disgust as well as moral/normative threats, which is not reported here.

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