Biased Beliefs about Immigration and Economic Concerns*

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Motivation: Integration of Migrants and Public Support

Labor market integration of migrants is of key relevance for policy agendas across developed economies.

However: protectionism and public opposition towards immigration have increased during the recent decade:

▶ Stronger support for populism and economic nationalism (Colantone and Stanig 2019)

▶ Links between immigration and increases in right-wing vote shares (Barone et al. 2016; Halla et al. 2017)

→ Overall: Tension between the goals of immigration and integration policies and (negative) attitudes towards immigration in parts of the host country’s population.
Motivation: Economic Concerns and Beliefs about Immigrants

From an economic perspective, native individuals may be concerned about immigration because of:

▶ potential adverse effects of immigration on the welfare state and public goods provision (Dahlberg et al. 2012; Facchini and Mayda 2009)

▶ potential increases in competition on the labor market (Haaland and Roth 2020; Ortega and Polavieja 2012)

From a voter’s perspective, forming preferences over immigration thus requires accurate beliefs about:

▶ the size of the immigrant population (i.e. the share of immigrants)

▶ its economic characteristics (e.g. the unemployment rate of immigrants) and/or its non-economic characteristics (e.g. the share of immigrants from a specific region)

→ However: natives often exert biased beliefs about the immigrant population (Barrera et al. 2020; Grigorieff et al. 2020).
Motivation: This Paper

We investigate the link between biased beliefs about immigrants and economic concerns about immigration as well as policy preferences in Germany.

RQ: Do statistical facts about the immigrant population affect economic concerns and policy preferences?

Our contributions:

▶ We exogenously vary the number and types of signals about the immigrant population which are available to individuals:
  ▶ Size of the immigrant population
  ▶ Economic characteristics of immigrants
  ▶ Non-economic (cultural) characteristics

▶ We further study
  ▶ cross-learning between different types of signals
  ▶ systematic heterogeneity in treatment effects
  ▶ persistence via a follow-up
Experimental Design: General Setup of the Experiment

We conduct representative survey experiments to examine the effect of statistical information on attitudes towards immigration.

Treatment arms:

Control group:

Prior beliefs → Immigration attitudes → Posterior beliefs

Signals: immigrant population

Prior beliefs → Immigration attitudes → Posterior beliefs

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We exogenously shift beliefs about:

- the share of immigrants in the population (13%) and/or
- the unemployment rate of immigrants (15%) and/or
- the share of immigrants from Europe among all immigrants (66%)†.

Random assignment of respondents to one of our experimental groups:

(I) Treatment A: Share
(I) Treatment B: Unemployment rate
(I) Treatment C: Share and unemployment rate
(I) Control group 1: No information

(II) Treatment D: Share and European share
(II) Control group 2: No information

†European countries comprise EU and European third-countries including Turkey and Russia.
Experimental Design: Outcome Variables

Attitudes towards immigration (Card et al. 2012; Facchini and Mayda 2009):

- **Welfare state concerns**: concerns about adverse effects of immigration on taxation, the welfare state, and public good provision

- **Labor market concerns**: concerns about increasing labor market competition as a consequence of immigration

- **Policy preferences** whether to increase/decrease immigration

The wording of our outcome variables is based on the European Social Survey (ESS) and the International Social Survey Program (ISSP).

Preferences for redistribution (Alesina et al. 2018):

- **Redistributive preferences** whether government should reduce income inequality
Experimental Design: Hypotheses about Economic Concerns and Policy Preferences
(formulated for “immigration-averse biases”)

I: Information provision translates into lower welfare state concerns.

II: Information provision about the share and the characteristics balance one another in terms of effects on labor market concerns.

III: Information provision translates into more positive immigration policy preferences.

IV: Information provision translates into more supportive preferences for redistribution.
Data: Population Surveys

Two online surveys in Germany:

- Representative w.r.t. age, gender, education, and residence in East/West Germany
- Respondents recruited and incentivized (flat payment, see Grewenig et al. 2020) by Respondi
- Field phases: November/December 2020 and September 2021
- Experiments and PAP pre-registered under IDs: AEARCTR-0006819; AEARCTR-8166

Pooled sample size: 8265 respondents (Experiment I: 6309; Experiment II: 1947).

Samples are well balanced.
Data: Distribution of Prior Beliefs about the Immigrant Population

⇒ Most people overestimate the share and the unemployment rate.
⇒ Most people overestimate the share and largely underestimate the European share of immigrants.
Data: Updating of Treated Respondents
(median, within-subject)
Data: Updating and Cross-Learning of Treated Respondents
(between-subject; standardized, absolute bias)
Assessing Average Treatment Effects

We first estimate average treatment effects (ATE) in a standard regression framework:

\[ y_i = \delta_0 + \delta_1 \text{Share}_i + \delta_2 \text{Unemployment}_i + \delta_3 \text{Bundle}_i + \theta^T X_i + \varepsilon_i, \quad (1) \]

where \( X \) is a matrix of pre-registered covariates, including:

- confidence about beliefs
- risk and trust attitudes
- general concerns about immigration (pre-treatment baseline)
- news consumption
- political attitude
- standard demographics

Analogously for experiment II.
Results: ATE of Information on Economic Concerns and Policy Preferences – Full Sample, 95%
Results: ATE of Information on Economic Concerns and Policy Preferences – Sample with Biases in Prior Beliefs, 95%

Average Treatment Effect (ATE): Biases in Prior Beliefs

- Welfare State Concerns
- Labor Market Concerns
- Preferences
- Immigration
- Redistribution
Further parts of the analysis:

- heterogeneity in treatment effects (Heterog.)
- persistence via a follow-up (Persist.)
We employ \textit{generalized causal forests} to uncover systematic heterogeneity in treatment effects (Athey et al. 2019; Nie and Wager 2021).

→ Allows us to obtain a non-linear estimate of the \textit{conditional average treatment effect (CATE)} for each individual and treatment arm.

We can then \textit{decompose the distributions of CATE} into the most relevant covariates in $X$. 

Distributions
Heterogeneity: Main Drivers of Heterogeneity in CATE

Variables Relevant for CATE Heterogeneity

- **Belief:** share of immigrants
- **Belief:** unemployment rate of immigrants
- **Belief:** general unemployment rate
- **Concerns about immigration**
- **Attitude towards cultural diversity**
- **Concerns about economic development**
- **Educational background**
- **Confidence:** share of immigrants
- **Confidence:** share of European immigrant

Graphs showing the scaled relevance of various variables in CATE heterogeneity.
⇒ U-shaped relationships between CATE and beliefs: noisy and small below the true value cutoffs and then increase, but only up to a point.
Persistence: ATE of Information on Economic Concerns and Policy Preferences – Follow-up

ATE (follow-up sample)

Welfare State Concerns

Labor Market Concerns

Preferences

Immigration

Redistribution

Standardized Effect on Absolute Biases in Beliefs

Share

Share + Unemployment

Share + European Share

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Persistence: ATE – Follow-up with Biases in Prior Beliefs

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Welfare State Concerns

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Labor Market Concerns

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Preferences

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Immigration Preferences

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Redistribution

- Share
- Unemployment
- Share + Unemployment
- Share + European Share

Standardized Effect on Absolute Biases in Beliefs

-0.2 0.0 0.2 0.4
Conclusion

We conduct representative survey experiments to examine the effect of information on economic concerns about immigration policy preferences:

- **Substantial biases** in individuals’ beliefs about characteristics of the immigrant population
- Exposure to information **reduces** concerns about negative effects of immigration on the welfare state
- Different types of signals about immigrants can offset their effects on concerns about labor market competition
- There exist links between beliefs about immigration and preferences for immigration policy

We find

- evidence of cross-learning
- heterogeneity in treatment effects
- persistence of treatment effects on welfare state concerns for 5-8 weeks

⇒ The **quantity and type of the signal** can moderate the effectiveness of information interventions, such as governmental information campaigns.
Thank you!
# Experimental Balance: Normalized Differences

Table A2: Experimental balance in covariates: normalized differences.

<table>
<thead>
<tr>
<th></th>
<th>Control vs. Treatment Share</th>
<th>Control vs. Treatment Unemp. Rate</th>
<th>Control vs. Treatment Bundle</th>
<th>Control vs. Treatment Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief: share of immigrants</td>
<td>-0.022</td>
<td>0.013</td>
<td>0.001</td>
<td>0.012</td>
</tr>
<tr>
<td>Confidence: share of immigrants</td>
<td>-0.032</td>
<td>0.013</td>
<td>0.023</td>
<td>0.029</td>
</tr>
<tr>
<td>Belief: unemployment rate of immigrants</td>
<td>-0.039</td>
<td>0.045</td>
<td>-0.045</td>
<td>-0.008</td>
</tr>
<tr>
<td>Confidence: unemp. rate of immigrants</td>
<td>-0.005</td>
<td>0.028</td>
<td>0.033</td>
<td>0.062</td>
</tr>
<tr>
<td>Belief: general unemployment rate</td>
<td>0.024</td>
<td>0.050</td>
<td>0.048</td>
<td>-0.042</td>
</tr>
<tr>
<td>Confidence: general unemployment rate</td>
<td>0.038</td>
<td>0.008</td>
<td>0.037</td>
<td>-0.047</td>
</tr>
<tr>
<td>Concerns about immigration</td>
<td>0.096</td>
<td>0.131</td>
<td>0.080</td>
<td>-0.076</td>
</tr>
<tr>
<td>Attitude towards cultural diversity</td>
<td>0.063</td>
<td>0.040</td>
<td>0.052</td>
<td>-0.007</td>
</tr>
<tr>
<td>Concerns about economic development</td>
<td>0.061</td>
<td>0.046</td>
<td>0.072</td>
<td>0.017</td>
</tr>
<tr>
<td>Concerns COVID-19 crisis</td>
<td>0.023</td>
<td>-0.076</td>
<td>0.036</td>
<td>0.044</td>
</tr>
<tr>
<td>News consumption</td>
<td>0.055</td>
<td>0.005</td>
<td>0.002</td>
<td>-0.009</td>
</tr>
<tr>
<td>Risk attitude</td>
<td>0.007</td>
<td>-0.039</td>
<td>0.032</td>
<td>-0.007</td>
</tr>
<tr>
<td>Generalized trust</td>
<td>-0.009</td>
<td>-0.048</td>
<td>-0.015</td>
<td>-0.013</td>
</tr>
<tr>
<td>Political attitude</td>
<td>0.018</td>
<td>0.018</td>
<td>-0.011</td>
<td>0.006</td>
</tr>
<tr>
<td>Age group</td>
<td>-0.020</td>
<td>-0.055</td>
<td>-0.029</td>
<td>-0.028</td>
</tr>
<tr>
<td>Female</td>
<td>0.014</td>
<td>0.024</td>
<td>0.048</td>
<td>-0.029</td>
</tr>
<tr>
<td>East Germany</td>
<td>0.070</td>
<td>0.040</td>
<td>0.016</td>
<td>0.046</td>
</tr>
<tr>
<td>Education</td>
<td>-0.024</td>
<td>-0.037</td>
<td>-0.052</td>
<td>0.013</td>
</tr>
<tr>
<td>Employed</td>
<td>0.056</td>
<td>0.089</td>
<td>0.011</td>
<td>0.003</td>
</tr>
<tr>
<td>Household size</td>
<td>0.014</td>
<td>0.056</td>
<td>0.037</td>
<td>0.001</td>
</tr>
<tr>
<td>Income</td>
<td>0.015</td>
<td>0.016</td>
<td>-0.017</td>
<td>-0.019</td>
</tr>
<tr>
<td>Partner</td>
<td>0.011</td>
<td>0.006</td>
<td>-0.008</td>
<td>-0.106</td>
</tr>
<tr>
<td>Migration background</td>
<td>-0.007</td>
<td>0.010</td>
<td>-0.032</td>
<td>-0.045</td>
</tr>
<tr>
<td>Contact with immigrants</td>
<td>-0.019</td>
<td>-0.030</td>
<td>-0.012</td>
<td>-0.004</td>
</tr>
<tr>
<td>Local population size</td>
<td>0.043</td>
<td>-0.001</td>
<td>-0.001</td>
<td>-0.004</td>
</tr>
</tbody>
</table>

Notes: Comparison of treatments and control groups in terms of normalized differences following Imbens (2015).

**Normalized differences:**

Rule of Thumb → value below |0.25| indicating a “good” balance
Determinants of (Absolute) Biased Beliefs about Immigrants

- Share of Immigrants
- Unemployment Rate of Immigrants

Correlations in Standard Deviations

- Share of Immigrants
- Unemployment Rate of Immigrants
- Belief: general unemployment rate
- Concerns about immigration
- Attitude towards cultural diversity
- Concerns about economic development
- Concerns about COVID-19 crisis
- News consumption
- Risk attitude
- Generalized trust
- Political attitude
- Age group
- Female
- East Germany
- Education
- Employed
- Household size
- Income
- Partner
- Migration background
- Contact with immigrants
- Local population size

Back
Determinants of (Absolute) Biased Beliefs about Immigrants (cont.)

Conf.: share of European immigrants
Belief: general unemployment rate
Conf.: general unemployment rate
Concerns about immigration
Attitude towards cultural diversity
Concerns about economic development
Concerns about COVID-19 crisis
News consumption
Risk attitude
Generalized trust
Political attitude
Age group
Female
East Germany
Education
Employed
Household size
Income
Partner
Migration background
Contact with immigrants
Local population size

Correlations in Standard Deviations

Share of European Immigrants

Back
Data: Updating and Cross-Learning of Treated Respondents (non-standardized, non-absolute bias)

<table>
<thead>
<tr>
<th></th>
<th>Experiment I</th>
<th></th>
<th>Experiment I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Share</td>
<td>Unemp. Rate</td>
<td>Share</td>
</tr>
<tr>
<td>Treat Share</td>
<td>-5.00</td>
<td>-4.47</td>
<td></td>
</tr>
<tr>
<td>Treat Unemp.</td>
<td>-1.32</td>
<td>-9.62</td>
<td></td>
</tr>
<tr>
<td>Treat Bundle</td>
<td>-5.34</td>
<td>-11.05</td>
<td></td>
</tr>
<tr>
<td>Treat Europe</td>
<td>-2.24</td>
<td>22.64</td>
<td></td>
</tr>
</tbody>
</table>

In **red**: Cross-Learning!
Experimental Design

Main Experiment:
Survey Waves 1 + 2

Start of main survey
N=2358 + 3951

Prior beliefs: Share + Unemployment rate of immigrants

Assignment to Control group
N = 596 + 978

Treatment A: Share of immigrants
N = 603 + 978

Treatment B: Unemp. rate of immigrants
N = 598 + 1024

Treatment C: Share + Unemp. rate of immigr.
N = 561 + 999

Economic concerns about immigration

Policy preferences:
Immigration/Redistribution

Posterior beliefs:
Survey wave 1: Treatments only
Survey wave 2: Share + Unemployment rate of immigrants

End of main survey

Survey wave 2 (only):
Follow-up survey

Extension Experiment:
Survey Wave 2

Start of main survey
N=1956

Prior beliefs: Overall share + Share of European immigrants

Assignment to Control group
N = 964

Treatment:
Overall share + Share of European immigrants
N = 992

End of main survey

Policy preferences:
Immigration/Redistribution

Posterior beliefs: Overall share + Share of European immigrants

End of main survey

Follow-up survey
Data: Wording – Prior Beliefs (I)

▶ Share of Immigrants: Now it is about the share of immigrants in Germany.

What do you estimate, please answer spontaneously:
What percentage of people living in Germany do not have German citizenship?

Hint text (clickable via question mark icon):
The percentage is understood here as the number of immigrants per 100 inhabitants in Germany.

▶ Unemployment Rate of Immigrants: Now it is about the unemployment rate of working-age immigrants in Germany.

What do you estimate, please answer spontaneously:
What percentage of these people are unemployed?

Hint text (clickable via question mark icon):
The percentage is understood here as the number of unemployed persons per 100 immigrants of working age in Germany. Immigrants are considered unemployed if they are registered as unemployed with the Federal Employment Agency. Asylum seekers and tolerated persons are included in the unemployment rate if they have a work permit but no job and are registered as unemployed.
Data: Wording – Prior Beliefs (II)

▶ Share of European Immigrants: Now it is about all immigrants who have come to Germany in 2019.

What do you estimate, please answer spontaneously:
What percentage of these immigrants come from a European country?

Hint text (always visible):
European countries include the countries of the European Union and European third countries including Turkey and the Russian Federation.

Hint text (clickable via question mark icon): The percentage is understood here as the number of European persons per 100 immigrants to Germany.

▶ Definition of immigrant / foreigner
→ for all at the beginning of the migration part in the questionnaire:

Definition Immigrants:
Now we will deal with a currently frequently discussed topic: immigration to Germany from abroad.

In the following, the terms "immigrants" and "foreigners" refer to all persons living in Germany who do not have German citizenship.
Wording: Economic Concerns

▶ Welfare state concerns (ESS):
“Immigrants pay taxes and receive social benefits from the health care and social insurance systems. On balance, do you think that immigrants in Germany receive more social benefits than they pay taxes, or that they pay more taxes than they receive social benefits?”

Answers range from 0 for “Receive more social benefits” to 10 for “Pay more taxes”.

▶ Labor market concerns (ESS):
“Do you think that immigrants rather take away jobs from workers in Germany, or that they rather help to create new jobs?”

Answers range from 0 for “Take jobs away” to 10 for “Create new jobs”.
Wording: Policy Preferences

- Immigration policy preferences:
  “Do you think that the number of immigrants coming to Germany each year should be: decreased a lot / decreased slightly / stay the same / increased slightly / increased a lot?”

- Preferences for redistribution (Alesina et al. 2018):
  “Some people think that the government should not care about income differences between rich and poor people. Others think that the government should do everything in its power to reduce income inequality. What do you think?”

   Answers range from 0 for “Government should not care about income inequality” to 10 for “Government should do everything against income inequality”.
Heterogeneity: Distribution of Cond. Av. Treatment Effects (CATE)

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Back
Persistence: Updating of Treated Respondents (5-8 weeks later)
Sample composition and representativity.

<table>
<thead>
<tr>
<th>Age</th>
<th>Main Survey</th>
<th>Follow-up</th>
<th>Target Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Share</td>
<td>Absolute</td>
</tr>
<tr>
<td>Age: 18–29 years</td>
<td>1318</td>
<td>0.161</td>
<td>385</td>
</tr>
<tr>
<td>Age: 30–39 years</td>
<td>1297</td>
<td>0.158</td>
<td>427</td>
</tr>
<tr>
<td>Age: 40–64 years</td>
<td>1213</td>
<td>0.148</td>
<td>409</td>
</tr>
<tr>
<td>Age: 50–64 years</td>
<td>2278</td>
<td>0.278</td>
<td>823</td>
</tr>
<tr>
<td>Age: 65 years and above</td>
<td>2093</td>
<td>0.255</td>
<td>898</td>
</tr>
<tr>
<td>Gender: female</td>
<td>4151</td>
<td>0.506</td>
<td>1369</td>
</tr>
<tr>
<td>Gender*: male</td>
<td>4038</td>
<td>0.493</td>
<td>1568</td>
</tr>
<tr>
<td>Residence: East Germany</td>
<td>1209</td>
<td>0.147</td>
<td>442</td>
</tr>
<tr>
<td>Residence: West Germany</td>
<td>6990</td>
<td>0.853</td>
<td>2500</td>
</tr>
<tr>
<td>Education: low</td>
<td>2957</td>
<td>0.361</td>
<td>1028</td>
</tr>
<tr>
<td>Education: middle</td>
<td>2543</td>
<td>0.310</td>
<td>936</td>
</tr>
<tr>
<td>Education: high</td>
<td>2699</td>
<td>0.329</td>
<td>978</td>
</tr>
</tbody>
</table>

Notes: The sources for target shares are provided by the German Federal Statistical Office. * In addition, there are 10 respondents who do neither identify as female nor male.
# Comparison: Normalized Differences – Follow-up

Differences between follow-up and non-follow-up respondents.

<table>
<thead>
<tr>
<th></th>
<th>Mean: Follow-up</th>
<th>Mean: Non-follow-up</th>
<th>Normalized Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief: share of immigrants</td>
<td>23.105</td>
<td>24.370</td>
<td>-0.079</td>
</tr>
<tr>
<td>Conf.: share of immigrants</td>
<td>4.097</td>
<td>3.977</td>
<td>0.048</td>
</tr>
<tr>
<td>Belief: unemployment rate of immigrants</td>
<td>30.962</td>
<td>30.950</td>
<td>0.001</td>
</tr>
<tr>
<td>Conf.: unemployment rate of immigrants</td>
<td>3.802</td>
<td>3.740</td>
<td>0.062</td>
</tr>
<tr>
<td>Belief: share of European immigrants</td>
<td>21.774</td>
<td>22.995</td>
<td>-0.057</td>
</tr>
<tr>
<td>Conf.: share of European immigrants</td>
<td>3.821</td>
<td>3.574</td>
<td>0.248</td>
</tr>
<tr>
<td>Belief: general unemployment rate</td>
<td>15.124</td>
<td>17.261</td>
<td>-0.132</td>
</tr>
<tr>
<td>Conf.: general unemployment rate</td>
<td>4.767</td>
<td>4.634</td>
<td>0.032</td>
</tr>
<tr>
<td>Concerns about immigration</td>
<td>6.050</td>
<td>5.922</td>
<td>0.040</td>
</tr>
<tr>
<td>Attitude towards cultural diversity</td>
<td>5.310</td>
<td>5.267</td>
<td>0.043</td>
</tr>
<tr>
<td>Concerns about economic development</td>
<td>5.842</td>
<td>6.207</td>
<td>-0.142</td>
</tr>
<tr>
<td>Concerns about COVID-19 crisis</td>
<td>5.121</td>
<td>5.612</td>
<td>-0.169</td>
</tr>
<tr>
<td>News consumption</td>
<td>63.609</td>
<td>65.313</td>
<td>-0.025</td>
</tr>
<tr>
<td>Risk attitude</td>
<td>3.809</td>
<td>3.883</td>
<td>-0.030</td>
</tr>
<tr>
<td>Generalized trust</td>
<td>4.069</td>
<td>4.089</td>
<td>-0.008</td>
</tr>
<tr>
<td>Political attitude</td>
<td>4.779</td>
<td>4.729</td>
<td>0.026</td>
</tr>
<tr>
<td>Age group</td>
<td>3.483</td>
<td>3.211</td>
<td>0.194</td>
</tr>
<tr>
<td>Female</td>
<td>0.465</td>
<td>0.529</td>
<td>-0.128</td>
</tr>
<tr>
<td>East Germany</td>
<td>0.150</td>
<td>0.146</td>
<td>0.012</td>
</tr>
<tr>
<td>Education</td>
<td>1.983</td>
<td>1.960</td>
<td>0.027</td>
</tr>
<tr>
<td>Employed</td>
<td>0.499</td>
<td>0.539</td>
<td>-0.039</td>
</tr>
<tr>
<td>Household size</td>
<td>2.118</td>
<td>2.247</td>
<td>-0.059</td>
</tr>
<tr>
<td>Income</td>
<td>2.500</td>
<td>2.523</td>
<td>-0.019</td>
</tr>
<tr>
<td>Partner</td>
<td>0.631</td>
<td>0.526</td>
<td>0.213</td>
</tr>
<tr>
<td>Migration Background</td>
<td>0.224</td>
<td>0.231</td>
<td>-0.016</td>
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<tr>
<td>Contact with immigrants</td>
<td>2.691</td>
<td>2.735</td>
<td>-0.046</td>
</tr>
<tr>
<td>Local population size</td>
<td>3.241</td>
<td>3.218</td>
<td>0.016</td>
</tr>
</tbody>
</table>

**Notes:** Comparison of respondents in the follow-up and non-follow-up samples in terms of mean values and normalized differences (Imbens and Rubin 2015).
### Experimental Balance: Normalized Differences – Follow-up

Experimental balance in covariates in follow-up sample: normalized differences.

<table>
<thead>
<tr>
<th></th>
<th>Control vs. Share</th>
<th>Control vs. Share + Unemp.</th>
<th>Control vs. Share + Europ. Share</th>
<th>Control vs. Share + Unemp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief: share of immigrants</td>
<td>0.020</td>
<td>0.019</td>
<td>0.014</td>
<td>0.017</td>
</tr>
<tr>
<td>Conf.: share of immigrants</td>
<td>0.017</td>
<td>0.036</td>
<td>0.130</td>
<td>0.021</td>
</tr>
<tr>
<td>Belief: unemployment rate of immigrants</td>
<td>-0.011</td>
<td>0.113</td>
<td>-0.028</td>
<td></td>
</tr>
<tr>
<td>Conf.: unemployment rate of immigrants</td>
<td>-0.003</td>
<td>-0.019</td>
<td>0.062</td>
<td></td>
</tr>
<tr>
<td>Belief: share of European immigrants</td>
<td></td>
<td></td>
<td>-0.053</td>
<td></td>
</tr>
<tr>
<td>Conf.: share of European immigrants</td>
<td></td>
<td></td>
<td>0.090</td>
<td></td>
</tr>
<tr>
<td>Belief: general unemployment rate</td>
<td>0.035</td>
<td>-0.034</td>
<td>-0.007</td>
<td>-0.066</td>
</tr>
<tr>
<td>Conf.: general unemployment rate</td>
<td>0.029</td>
<td>0.006</td>
<td>0.063</td>
<td>-0.064</td>
</tr>
<tr>
<td>Concerns about immigration</td>
<td>0.016</td>
<td>0.022</td>
<td>-0.030</td>
<td>-0.047</td>
</tr>
<tr>
<td>Attitude towards cultural diversity</td>
<td>0.024</td>
<td>-0.015</td>
<td>0.021</td>
<td>0.009</td>
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<tr>
<td>Concerns about economic development</td>
<td>0.058</td>
<td>-0.003</td>
<td>0.002</td>
<td>0.008</td>
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<tr>
<td>Concerns about COVID-19 crisis</td>
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<td>-0.112</td>
<td>-0.030</td>
<td>0.060</td>
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<tr>
<td>News consumption</td>
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<td>-0.030</td>
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<tr>
<td>Risk attitude</td>
<td>0.050</td>
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<td>-0.027</td>
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<tr>
<td>Generalized trust</td>
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<td>-0.085</td>
<td>-0.060</td>
<td>0.010</td>
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<tr>
<td>Political attitude</td>
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<td>-0.065</td>
<td>-0.056</td>
<td>-0.034</td>
</tr>
<tr>
<td>Age group</td>
<td>-0.166</td>
<td>-0.201</td>
<td>-0.164</td>
<td>0.026</td>
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<tr>
<td>Female</td>
<td>0.056</td>
<td>0.074</td>
<td>0.052</td>
<td>-0.018</td>
</tr>
<tr>
<td>East Germany</td>
<td>0.068</td>
<td>0.034</td>
<td>0.014</td>
<td>0.052</td>
</tr>
<tr>
<td>Education</td>
<td>0.037</td>
<td>-0.020</td>
<td>-0.058</td>
<td>-0.064</td>
</tr>
<tr>
<td>Employed</td>
<td>0.080</td>
<td>0.114</td>
<td>0.081</td>
<td>-0.072</td>
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<td>Household size</td>
<td>-0.083</td>
<td>-0.033</td>
<td>-0.053</td>
<td>-0.040</td>
</tr>
<tr>
<td>Income</td>
<td>-0.048</td>
<td>-0.046</td>
<td>-0.090</td>
<td>-0.091</td>
</tr>
<tr>
<td>Partner</td>
<td>0.065</td>
<td>0.073</td>
<td>0.036</td>
<td>-0.160</td>
</tr>
<tr>
<td>Migration Background</td>
<td>0.020</td>
<td>-0.047</td>
<td>0.040</td>
<td>-0.037</td>
</tr>
<tr>
<td>Contact with immigrants</td>
<td>0.022</td>
<td>-0.098</td>
<td>-0.055</td>
<td>0.033</td>
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<tr>
<td>Local population size</td>
<td>0.142</td>
<td>-0.042</td>
<td>-0.011</td>
<td>-0.017</td>
</tr>
</tbody>
</table>

**Notes:** Comparison of treatments and control groups in terms of normalized differences (Imbens and Rubin 2015). As a rule of thumb, normalized differences smaller than 0.25 in absolute terms indicate sufficient balance in a standard regression framework (Imbens and Wooldridge 2009).
Persistence: ATE - Follow-up sample for main survey

![Diagram showing standardized effect on absolute biases in beliefs for different treatment arms and concerns.](image-url)

- Welfare State Concerns
- Labor Market Concerns
- Preferences Immigration
- Preferences Redistribution

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