Appendix D: Statistical Modeling

Cluster analysis

Cluster analysis is a method of grouping people based on specific sets of characteristics. Often used in marketing and communication, its goal is to identify people who are very similar to each other, but very dissimilar from others, in terms of those characteristics. Clustering algorithms (in this case, k-means clustering) use an iterative procedure to assign people into clusters, measuring within- and between-cluster variation at each step and changing cluster membership until the best solution is reached.

Selecting characteristics is a central component of identifying a meaningful set of clusters. The variables should measure distinct dimensions (i.e., attitudes or behaviors) and should have robust variation in the full sample. Highly correlated variables should be avoided because they wouldn't add unique information in forming clusters. Therefore, an in-depth evaluation of the properties and interrelationships of variables is paramount before clustering can begin. The selection of the variables used in this analysis reflects such a process. The eight variables selected are:

- An index measuring the extent to which respondents think unfair treatment that disadvantages various groups is a serious problem, based on averaged responses to Q11a-k, excluding[5] item j "whites")

- An index measuring respondents' likelihood to take action to improve opportunities for various groups (Q22 a-k, excluding item j "whites")

- An index measuring the extent to which respondents say they'd be likely to undertake different actions (e.g., volunteering, donating money, signing petitions) to support groups or issues that are important to them (Q24a-i)

- An index measuring the extent to which respondents think inequality faced by groups is attributable to their own behaviors rather than social conditions (Q12a-k)

- An index measuring perceived efficacy of groups to be able to take action to change things that are important to them (as an index or single items, Q21a-e)

5. Item exclusions were done on the basis of conceptual and psychometric grounds, e.g., when an item's removal improved the psychometric properties of an index substantially.

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- An index measuring the frequency of personal contact (i.e., meals shared outside of a work context) with members of different groups (Q25a-g)

- An index measuring the frequency of personal experiences with discrimination because of group memberships (e.g., race, gender, or religious beliefs) (Q13a-f)

- An index measuring the extent to which respondents feel various personal characteristics associated with their group memberships (e.g., their race, gender, or sexual orientation) are important elements of their own identity (Q15a-h)

Regression modeling

The statistical models included in this report were conducted using linear regression, which measures the relationships among attitudinal and demographic variables, and predicted outcomes such as perceived seriousness of unfair treatment against groups. A regression measures the independent strength of the relationship between each predictor with the posited outcome, known as the dependent or outcome variable.

Although they do not establish causality, such models reveal the strength of the relationship between each predictor and the dependent variable, with other predictors held constant. They therefore illustrate what variables explain the most unique variation in the dependent variable.

To conduct the modeling, key questions were recoded as continuous variables where possible (e.g., 1 = not acceptable at all, 2 = not so acceptable, 3 = somewhat acceptable, 4 = mostly acceptable, and 5 = entirely acceptable). Categorical or dichotomous variables, including many demographic measures, were recoded as binary variables (e.g., 0 = female, 1 = male).

The dependent variables modeled include:

1. An index measuring the extent to which respondents think unfair treatment that disadvantages various groups is a serious problem (Q11a-k, excluding item j).

2. An index measuring respondents' views on the extent of housing discrimination faced by various groups (Q12a-k).

3. An index measuring the extent to which respondents say a variety of measures to address poverty should be prioritized or funding for poverty-related measures should be increased. The index is made up of standardized responses to items Q29a-g and Q30a-d.

4. An index measuring support for alternative sentencing programs and policies aimed to increase employment opportunities for people who have been incarcerated, as well as a preference for rehabilitation over strict punishment. The index is based on standardized responses to five items from Q2a, Q31, and Q32a-c.

5. Respondents' support for a path to citizenship for undocumented immigrants. Responses to Q36 and Q37 are coded into a three-point response scale ("support without conditions," "support with conditions," and "oppose").

6. An index measuring respondents' likelihood to take action to improve opportunities for various groups (Q22 a-k, excluding item j).

7. An index measuring respondents' likelihood to take action in support of various issues (Q23a-e, excluding item c).

8. An index measuring the extent to which respondents say they'd be likely to undertake different actions (e.g., volunteering, donating money, or signing petitions) to support groups or issues that are important to them (Q24a-i).

All models include the following demographic variables: age, gender, race/ethnicity, education, region, employment status, household income, marital status, presence of children in the household, religion, religious service attendance, citizenship status, and sexual orientation. Ideology and political party identification also served as controls.

Attitudinal predictors included System Justification Index (Q1a-d); preference for tradition in general (Q3) and for moral tradition (Q4); acceptability of group inequalities (a measure of social dominance orientation, Q9); prioritizing the three moral foundations associated with conservatism (Q6, c-e; loyalty, authority, honor); personal experience with discrimination index (Q13a-f); importance of group identifications index (Q15a-i); and linked fate (Q18).

Other attitudinal variables were included depending on the specific outcome variable. These include respondents' perceptions of seriousness of unfair treatment against groups (as an index or as single items as appropriate, Q11a-k); the extent to which respondents think inequality faced by groups is attributable to their own behaviors rather than social conditions (as an index or single items, Q12a-k); respondents' perceived income class (Q19);

personal efficacy (Q20); group-level efficacy (as an index or single items, Q21a-e); frequency of personal contact with members of different groups (Q25a-g); and perceived effectiveness of government programs designed to reduce discrimination (Q27).

Models for each of the dependent variables are presented in the following tables.

Model 1: Predicting perceptions of seriousness of unequal treatment of different groups as a problem

	Standardized coefficient ( )	Significance test (t)
Conservatism	–0.19	7.90***
Acceptability of inequality of opportunity among groups	–0.14	7.13***
Linked fate	0.13	6.32***
Personal experience with unfair treatment	0.11	5.29***
Education	0.1	4.29***
Preference for tradition in general	–0.08	4.00***
Ethnicity: Hispanic	0.08	3.33***
System Justification Index	–0.07	3.63***
Importance of different group identification dimensions	0.07	3.58***
Children in household	–0.07	3.19***
PID: Democrat	0.07	3.18**
Age	0.07	3.00**
Race: Black	0.06	2.95**
Morality: Prioritizing loyalty, authority, or honor	–0.06	2.88**
Gender: Men	–0.05	2.52*
Preference for traditional morality	–0.05	2.46*
Employed	–0.05	2.22*

Model R2 = .31, p < .001

Here and below: ***p < .001, **p < .01, *p < .05

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Model 2: Predicting perceived extent of discrimination in housing against different groups

	Standardized coefficient ( )	Significance test (t)
Personal experience with unfair treatment	0.21	9.58***
Conservatism	–0.17	6.86***
Importance of different group identification dimensions	0.16	7.89***
Preference for traditional morality	–0.11	4.93***
Acceptability of inequality of opportunity among groups	–0.1	4.64***
System Justification Index	–0.07	3.57***
PID: Democrat	0.07	3.21**
Linked fate	0.06	2.95**
Race: Asian American	–0.06	2.85**
Children in household	–0.06	2.67**
Preference for tradition in general	–0.05	2.60**
Age	0.06	2.49*
Frequency of religious service attendance	0.06	2.47**
Morality: Prioritizing loyalty, authority, or honor	–0.05	2.21*

Model R^2 = .27, p < .001

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Model 3: Predicting prioritizing social policies and increasing funding for poverty–related measures

	Standardized coefficient ( )	Significance test (t)
Seriousness of unequal treatment of poor people	0.25	11.18***
Conservatism	–0.15	6.42***
Importance of different group identification dimensions	0.12	6.12***
Acceptability of inequality of opportunity among groups	–0.1	5.37***
Age	0.1	4.58***
Frequency of personal contact with members of diff. groups	0.09	4.64***
Behavioral attributions for poor people's inequality	–0.09	4.40***
Gov't programs to reduce discrimination work well	0.07	3.55***
PID: Democrat	0.07	3.47***
Perceived income class of respondent	–0.07	3.15**
Religion: Catholic	0.07	2.83**
Preference for traditional morality	–0.06	2.93**
Citizenship status: Citizen	–0.06	2.76**
Religion: Protestant	0.06	2.39*
Perceived ability of poor people to change things	0.05	2.77**
Race: Asian American	–0.05	2.63**
Morality: Prioritizing loyalty, authority, or honor	–0.05	2.57*
Linked fate	0.05	2.42*
Ethnicity: Hispanic	0.05	2.18*
Income	–0.05	2.03*
System Justification Index	–0.04	2.31*
Preference for tradition in general	–0.04	2.24*

Model R2 = .40, p < .001

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Model 4: Predicting support for alternative sentencing programs and measures to increase employment opportunities for people who have served a prison sentence

	Standardized coefficient ( )	Significance test (t)
Seriousness of unequal treatment of people who have been to prison	0.23	10.75***
Behavioral attributions for inequality faced by people who have been to prison	–0.18	8.75***
Linked fate	0.12	5.55***
Morality: Prioritizing loyalty, authority, or honor	–0.1	4.88***
Education	0.09	4.11***
Conservatism	–0.08	3.21**
Gov't programs to reduce discrimination work well	0.07	3.57***
Preference for tradition in general	–0.07	3.55***
Age	0.07	2.76**
Acceptability of inequality of opportunity among groups	–0.06	2.96**
Frequency of religious service attendance	0.06	2.51*
Religion: None	0.06	2.45*
Religion: Catholic	0.06	2.19*
PID: Republican	–0.05	2.30*
Race: Asian American	–0.04	1.73+

Model R2 = .30, p < .001

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Model 5: Support for path to citizenship for undocumented immigrants

	Standardized coefficient ( )	Significance test (t)
Behavioral attributions for inequality of undocumented immig.	–0.2	7.71***
Ethnicity: Hispanic	0.12	3.96***
Linked fate	0.09	4.01***
Acceptability of inequality of opportunity among groups	–0.09	3.74***
Education	0.09	3.71***
PID: Democrat	0.09	3.70***
Frequency of religious service attendance	0.08	2.91**
Gov't programs to reduce discrimination work well	0.07	3.33***
Behavioral attributions for Latinos' inequality	–0.07	2.72**
Frequency of personal contact with undocumented immigrants	0.07	2.45*
Preference for tradition in general	–0.06	2.74**
PID: Republican	–0.06	2.45*
Frequency of personal contact with Latinos	0.06	2.15*
SJT index	0.05	2.40*
Morality: Prioritizing loyalty, authority, or honor	–0.04	1.71+

Model R^2 = .28, p < .001

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Model 6: Predicting respondents' intentions to take action to improve opportunities for different groups

	Standardized coefficient ( )	Significance test (t)
Frequency of personal contact with members of diff. groups	0.22	10.27***
Seriousness of unequal treatment of different groups	0.17	6.87***
Personal efficacy	0.12	5.78***
Perceived ability of diff. groups to change things	0.11	5.35***
Behavioral attributions for group inequalities	–0.11	4.60***
Linked fate	0.08	3.52***
Frequency of religious service attendance	0.08	3.44***
Race: Black	0.08	3.34**
Importance of different group identification dimensions	0.06	3.07**
Income	–0.06	2.42*
Age	0.06	2.39*
Citizenship status: Citizen	–0.05	2.50*
PID: Democrat	0.05	2.41*
Education	–0.05	2.19*
Region: South	0.05	2.06*
Ethnicity: Hispanic	0.05	1.93+
Children in household	0.04	2.13*
System Justification Index	0.04	1.85+
PID: Republican	–0.04	1.70+
Preference for tradition in general	–0.03	1.67+

Model R^2 = .33, p < .001

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Model 7: Predicting respondents' intentions to take action to support different issues

	Standardized coefficient ( )	Significance test (t)
Frequency of personal contact with members of diff. groups	0.2	9.31***
Importance of different group identification dimensions	0.11	5.20***
Linked fate	0.11	5.05***
Seriousness of unequal treatment of different groups	0.11	4.50***
Behavioral attributions for group inequalities	−0.11	4.47***
Acceptability of inequality of opportunity among groups	−0.1	4.83***
Ethnicity: Hispanic	0.1	4.00***
Perceived ability of diff. groups to change things	0.09	4.18***
Personal efficacy	0.08	4.04***
Preference for tradition in general	−0.08	3.61***
PID: Republican	−0.07	2.82**
Citizenship status: Citizen	−0.06	2.70**
PID: Democrat	0.06	2.45*
Religion: None	−0.05	1.75+
Education	−0.04	1.86+
Frequency of religious service attendance	0.04	1.82+
Religion: Catholic	0.04	1.75+
Race: Black	0.04	1.75+

Model R2 = .31, p < .001

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Model 8: Predicting respondents' intentions to engage in a variety of specific actions on behalf of issues or groups

	Standardized coefficient ( )	Significance test (t)
Frequency of personal contact with members of diff. groups	0.23	9.80***
Personal efficacy	0.12	5.15***
Importance of different group identification dimensions	0.11	4.82**
Linked fate	0.1	4.48***
Religion: Catholic	0.08	3.06**
Acceptability of inequality of opportunity among groups	–0.07	3.10**
Personal experience with unfair treatment	0.07	3.03**
Gender: Male	–0.06	2.92**
Perceived ability of diff. groups to change things	0.06	2.57*
Seriousness of unequal treatment of different groups	0.06	2.25*
Preference for tradition in general	–0.05	2.44*
Race: Asian American	–0.05	2.12*
Age	0.05	2.07*
PID: Republican	–0.05	2.05*
Race: Black	–0.05	2.00*
Sexual orientation: non-heterosexual	0.04	2.11*
Relative group deprivation	0.04	1.72+

Model R^2 = .21, p < .001

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