

Appendix

Survey details

This study is a pre-registered conjoint experiment that was embedded in a large-scale public opinion survey fielded to US adults by a survey firm, Bovitz, in September 2022. The survey was ultimately fielded on 1,117 respondents. When we contracted with Bovitz, we noted that we were seeking a nationally representative sample of US adults, with an oversample of immigrants, with the intention of recruiting a sample of 1,000 US adults, and between 150-200 immigrants. Summary statistics for our sample are presented in Table A1.

Aside from being overly representative of the immigrant population (22.8% in our sample, compared to 13.6% in the US population), the rest of the indicators appear to be well balanced. For example, the US White population is 59.3%, while the White respondent population comprises 60.9% of our sample. Similarly we have nearly equal balance in terms of gender in the sample (49.4% female compared to 48.7% male). Please note that the analyses in the main text as well as in the appendix do not use any survey weights to enhance representativeness of the sample.

The conjoint design allows us to test which specific attributes generated public support or opposition to prioritizing refugee visas as well as which refugee attributes respondents believe will make integration in the U.S. more or less likely. We are also able to evaluate how these preferences vary across different subsets of Americans. Table A2 lists all the attributes and their randomly varied levels.

Figure A1 depicts a sample comparison of two hypothetical refugee applicant profiles. Respondents were forced in each treatment to choose between Refugee 1 and Refugee 2.

In terms of factors that we chose, we relied mostly on prior research as our guide. Prior research on immigration attitudes has generally revealed that attitudes towards immigrants are quite negative (e.g., Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016; Clayton, Ferwerda and Horiuchi, 2021; Donnalaja, 2022; Findor et al., 2021). Notably, these studies have identified key attributes that shape attitudes towards different subsets of immigrants, such as language skills (e.g., Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016), region of origin (e.g., Clayton, Ferwerda and Horiuchi, 2021; Denney and Green, 2021; Findor et al., 2021), gender (e.g., Findor et al., 2021), age (e.g., Bansak, Hainmueller and Hangartner, 2016; Findor et al., 2021), parental status (e.g., Steele, Abdelaaty and Than, 2023), and religion (e.g., Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016; Donnalaja, 2022; Steele, Abdelaaty and Than, 2023).

In terms of the baselines that we use in our analyses, in most instances, we chose baselines that mirrored previous research which deferred to the most preferred, but, for age we chose the non-preferred option, because we wanted one of the ends for ease of interpretation. We didn't want to choose children, because they might be uniquely different from adults.

Figure A1: Sample comparison of two hypothetical refugee applicant profiles

	Refugee 1	Refugee 2
Refugee application cause	Extreme poverty because of climate change	High personal risk from political persecution
Language skills	No English	Fluent English
Region of origin	Africa	Latin America
Gender	Male	Female
Age	20s	60s
Has minor children	No	Yes
Religion	Muslim	Unknown

Which refugee should receive the visa?

Refugee 1 <input type="radio"/>	Refugee 2 <input type="radio"/>
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In your opinion, which refugee would be more likely to integrate successfully after arriving in the U.S.?

Refugee 1 <input type="radio"/>	Refugee 2 <input type="radio"/>
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Table A1: Summary Statistics

	n	mean	sd	min	max
Respondent Race: White	.62	.49	0	1	1035
Respondent Race: Non-White	.38	.49	0	1	1035
Immigrant	.22	.42	0	1	1035
Native Born	.78	.42	0	1	1035
Climate Anxiety: High	.26	.44	0	1	1035
Climate Anxiety: Low	.33	.47	0	1	1035
High Climate Political Part	.26	.44	0	1	1035
Low Climate Political Part	.74	.44	0	1	1035
Male	.48	.5	0	1	1035
Female	.5	.5	0	1	1035
Age	47	16	18	87	1034
Age: Younger (18-35)	.29	.46	0	1	1035
Age: Older (>65)	.17	.38	0	1	1035
Democrat	.44	.5	0	1	1035
Republican	.25	.43	0	1	1035
Independent	.31	.46	0	1	1035
Ideology	3.8	1.7	1	7	1035
Income	3.1	1.6	1	6	1035
Income: Low	.41	.49	0	1	1035
Income: High	.1	.3	0	1	1035
Education	3.8	1.4	1	6	1035
Education: Low	.24	.43	0	1	1035
Education: High	.12	.33	0	1	1035
Biden 2020 Support	.51	.5	0	1	1035
Trump 2020 Support	.34	.47	0	1	1035

Table A2: List of attributes and their randomly varied levels

Attribute	Levels
Refugee application cause	<ul style="list-style-type: none"> a) High personal risk from political persecution (baseline) b) Extreme poverty c) Extreme poverty because of climate change d) A natural disaster, such as a major flood or fire e) A climate change-caused natural disaster, such as a major flood or fire
Language skills	<ul style="list-style-type: none"> a) Fluent English b) Some English c) No English (Baseline)
Region of origin	<ul style="list-style-type: none"> a) Africa b) Latin America c) Middle East d) Asia e) Europe (baseline)
Gender	<ul style="list-style-type: none"> a) Male b) Female (baseline)
Age	<ul style="list-style-type: none"> a) Under 18 b) 20s c) 40s d) 60s (Baseline)
Has Minor Children	<ul style="list-style-type: none"> a) Yes b) No (Baseline)
Religion	<ul style="list-style-type: none"> a) Muslim b) Unknown c) Christian (Baseline)

Pre-registered hypotheses

Prior to fielding our study, we pre-registered our hypotheses on OSF. Our specific hypotheses with respect to all respondents in the aggregate were as follows:

- In the aggregate, Americans will prefer climate refugees less than refugees seeking asylum for other reasons. **Confirmed.** (See Figure 1).
- In the aggregate, Americans will prefer Muslim refugees less than refugees who are Christian or without a religious denomination. **Confirmed.** (See Figure 1).
- In the aggregate, Americans will prefer refugees who speak fluent English over those who are less fluent. **Confirmed.** (See Figure 1).
- In the aggregate, Americans will prefer refugees with children than those without children. **Confirmed.** (See Figure 1).
- In the aggregate, Americans will prefer younger refugees over older ones. **Confirmed.** (See Figure 1).
- In the aggregate, Americans will prefer refugees from Europe, over those from Africa, Asia, the Middle East, or Latin America. **Partially confirmed** - they preferred refugees from Africa more than from Europe. (See Figure 1).

We also pre-registered a series of subgroup hypotheses with respect to respondent characteristics (see below). While we do not present the full range of these results in the main text, we identify whether the results support each of the hypotheses below:

- Americans with immigrant backgrounds will prefer climate refugees more than refugees seeking asylum for other reasons. **Not confirmed.** (See Figure A2).
- Americans with immigrant backgrounds will show more preference for climate refugees than will Americans from nonimmigrant backgrounds. **Not confirmed.** (See Figure A2).
- Those Americans who are prejudiced against people from Africa Asia, the Middle East, Latin America, or Europe will be less likely to support admitting refugees from those areas.¹ **Not confirmed.** (See Figure A3).
- Those Americans with high levels of climate anxiety will be more likely to support admitting climate refugees than those Americans with lower levels of climate anxiety. **Confirmed.** (See Figure 4).
- Those Americans who have participated due to climate concerns will be more likely to support granting a visa to a refugee coming for climate purposes, compared to those Americans who have not politically participated due to climate concerns. **Confirmed.** (See Figure A4).
- Younger people are more likely to be sympathetic to climate refugees than older people. **Confirmed.** (See Figure 2).
- Women are more likely to be sympathetic to climate refugees than men. (See Figure A5).

¹Note that we operationalized our analysis here with a feeling thermometer toward immigrants.

- Democrats are more likely to be sympathetic to climate refugees than Republicans. **Not confirmed.** (See Figure 3).
- Liberals are more likely to be sympathetic to climate refugees than Conservatives. **Not confirmed.** (See Figure A6).
- White Americans are less likely to be sympathetic to climate refugees than non-White Americans. (See Figure A7).
- Highly educated individuals are more likely to be sympathetic to climate refugees than those with lower education. **Not confirmed.** (See Figure A8).
- Individuals with higher family income are more likely to be sympathetic to climate refugees than those with lower family income. **Not confirmed.** (See Figure A9).
- Biden supporters are more likely to be sympathetic to climate refugees than Trump supporters. **Not confirmed.** (See Figure A10).

Additional Pre-Registered Hypotheses

Here we present the Average Marginal Component Effect (AMCE) for each respondent subgroup we hypothesized about in the main text.

As suggested by other scholars (e.g. [Abramson, Koçak and Magazinnik, 2022](#); [Liu and Shiraito, 2023](#)), we also present a table that conducts multiple hypothesis testing corrections (Bonferonni corrections) for each of the AMCE evaluations in the main text. We present the results below in [Table A3](#).

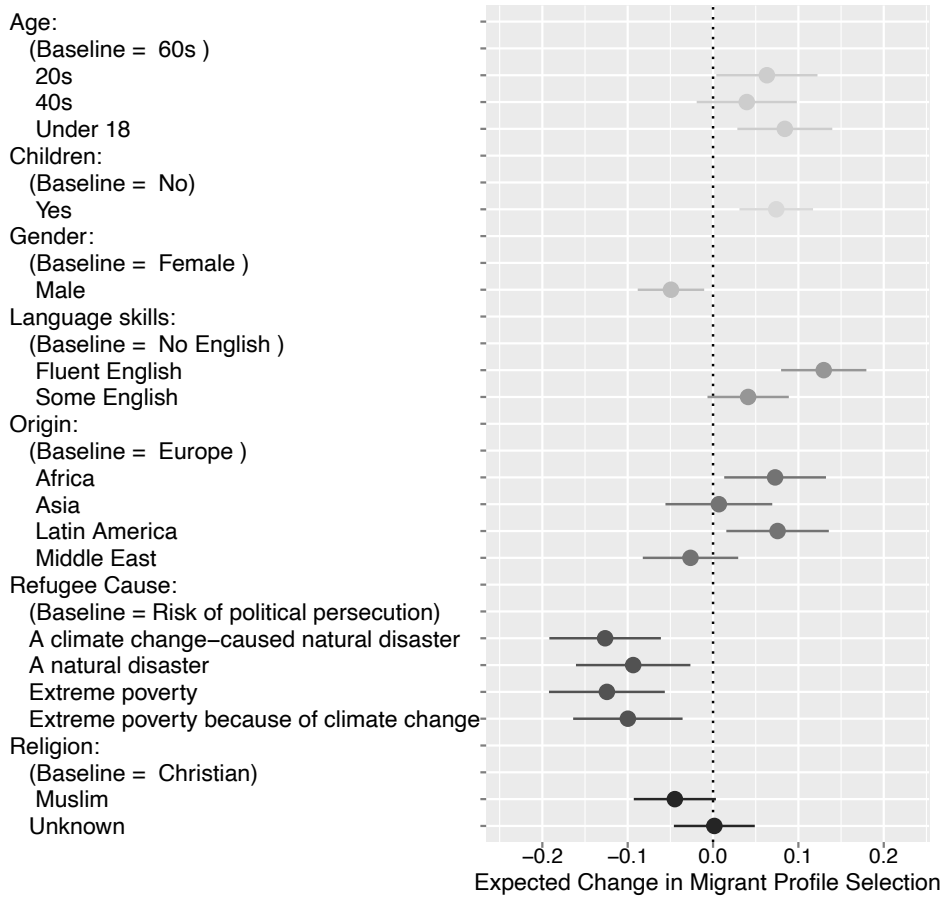
Table A3: Multiple hypothesis testing (Bonferonni corrections)

Figure	Variables that retain statistical significance
Figure 1(a)	Age (20s), Age (40s), Age (Under 18), Children (Yes), Gender (Male), Language (Fluent English), Language (Some English), Origin (Africa), Cause (A climate change-caused natural disaster), Cause (Extreme poverty), Cause (Extreme poverty because of climate change), Religion (Muslim), Religion (Unknown)
Figure 1(b)	Age (20s), Age (40s), Age (Under 18), Children (Yes), Gender (Male), Language (Fluent English), Language (Some English), Origin (Middle East), Religion (Muslim), Religion (Unknown)
Figure 2(a)	Age (20s), Age (Under 18), Children (Yes), Language (Fluent English), Language (Some English), Origin (Africa)
Figure 2(b)	Children (Yes), Gender (Male), Language (Fluent English), Language (Some English), Cause (A climate change-caused natural disaster), Cause (A natural disaster), Cause (Extreme poverty), Cause (Extreme poverty because of climate change), Religion (Muslim), Religion (Unknown)
Figure 3(a)	Age (20s), Age (Under 18), Children (Yes), Language (Fluent English), Language (Some English), Cause (A natural disaster), Cause (Extreme poverty)
Figure 3(b)	Children (Yes), Gender (Male), Language (Fluent English), Language (Some English), Origin (Middle East), Cause (A climate change-caused natural disaster), Cause (Extreme poverty), Cause (Extreme poverty because of climate change), Religion (Muslim), Religion (Unknown)
Figure 4(a)	Age (20s), Age (Under 18), Children (Yes), Gender (Male), Language (Fluent English), Language (Some English)
Figure 4(b)	Age (20s), Age (Under 18), Children (Yes), Gender (Male), Language (Fluent English), Language (Some English), Cause (A climate change-caused natural disaster), Cause (Extreme poverty), Cause (Extreme poverty because of climate change), Religion (Muslim), Religion (Unknown)

These Bonferonni corrections select 0.1 as the p-value, and adjust for 17 control variables

Figure A2: Subgroup Differences: Nativity

((a)) Profile Selection Among Immigrant Respondents



((b)) Profile Selection Among Native Born Respondents

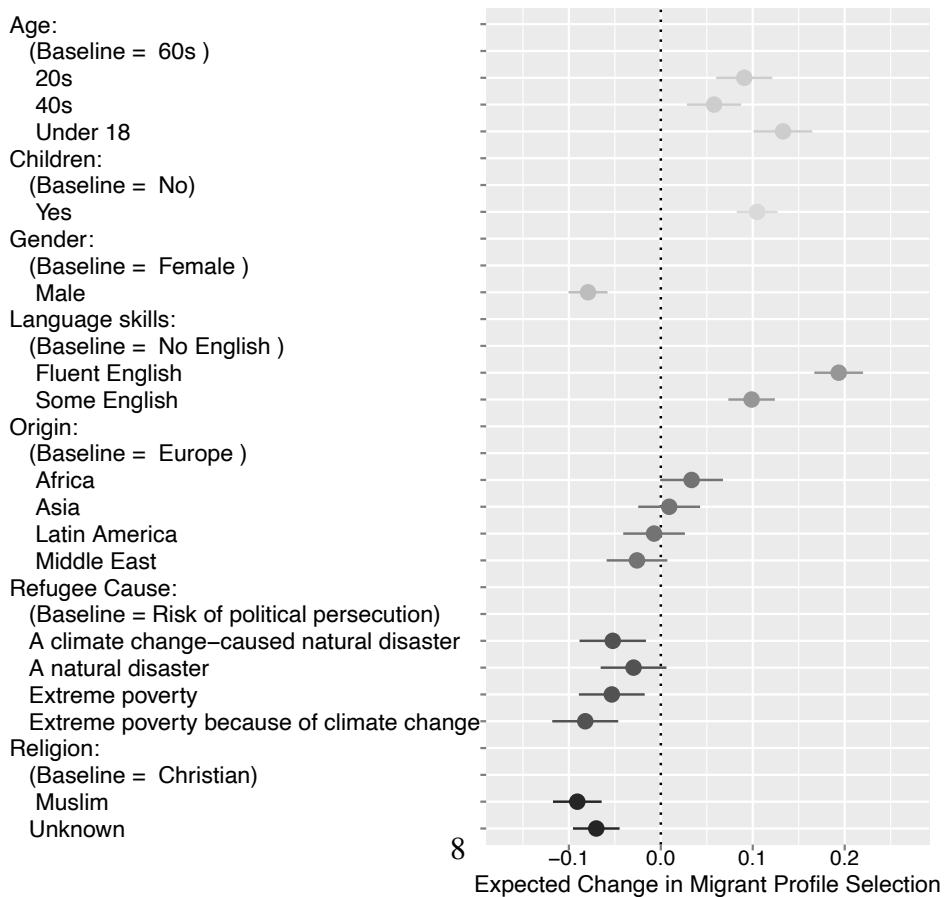
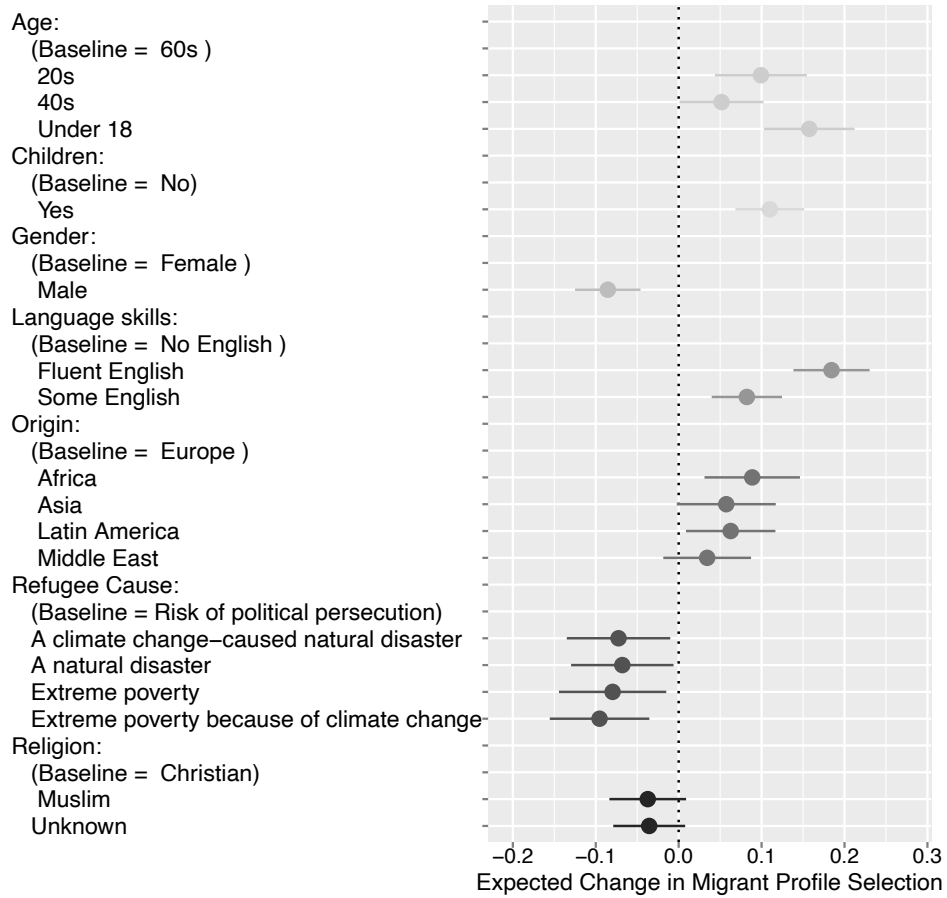


Figure A3: Subgroup Differences: Attitudes toward Immigrants

((a)) Profile Selection Among High Immigrant FT Respondents



((b)) Profile Selection Among Low Immigrant FT Respondents

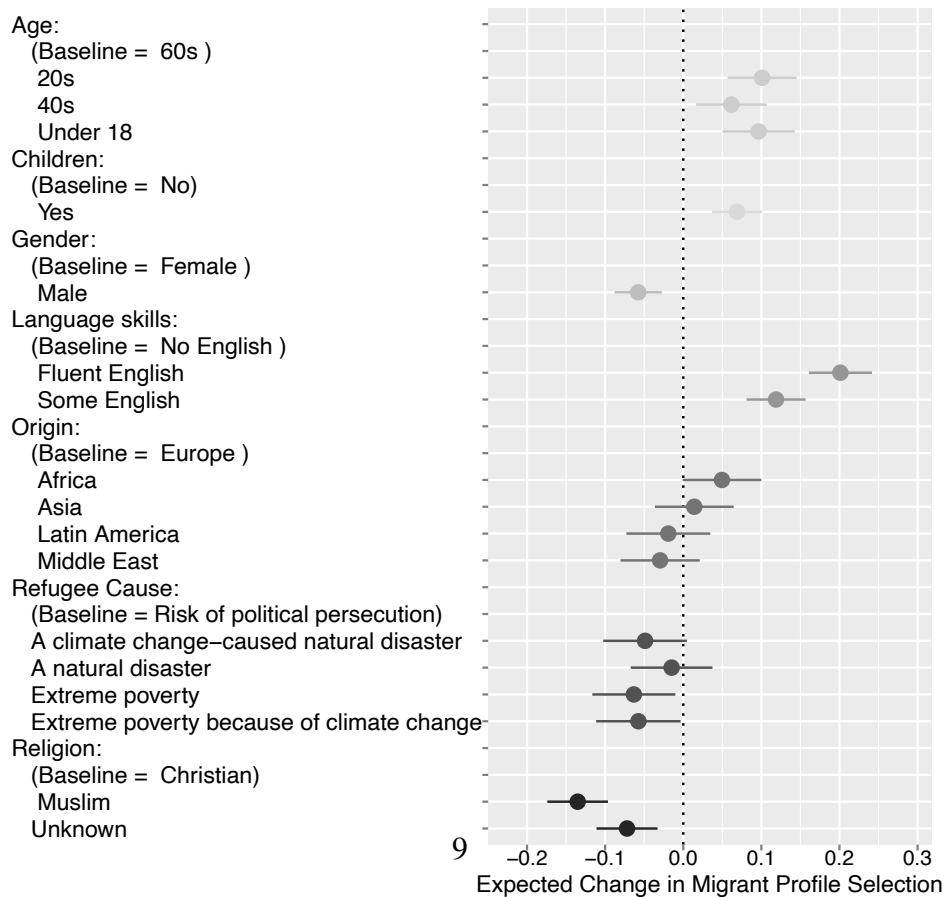
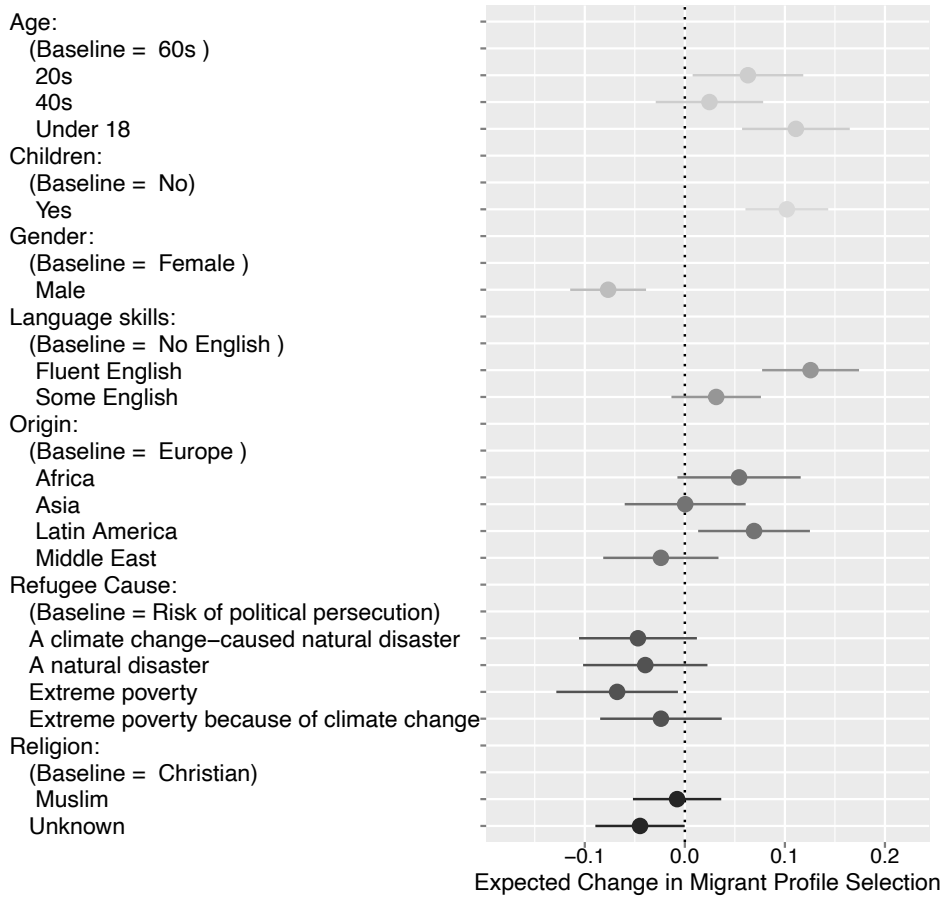


Figure A4: Subgroup Differences: Climate Participation

((a)) Profile Selection Among High Climate Political Participation Respondents



((b)) Profile Selection Among Low Climate Political Participation Respondents

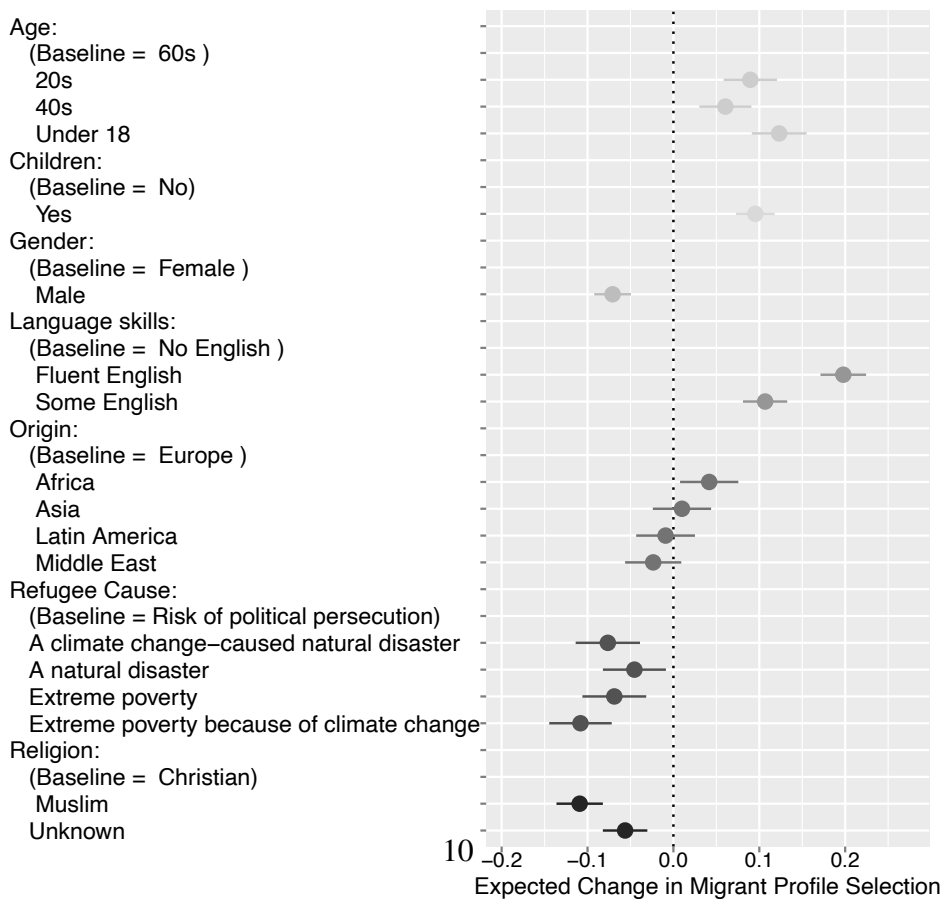
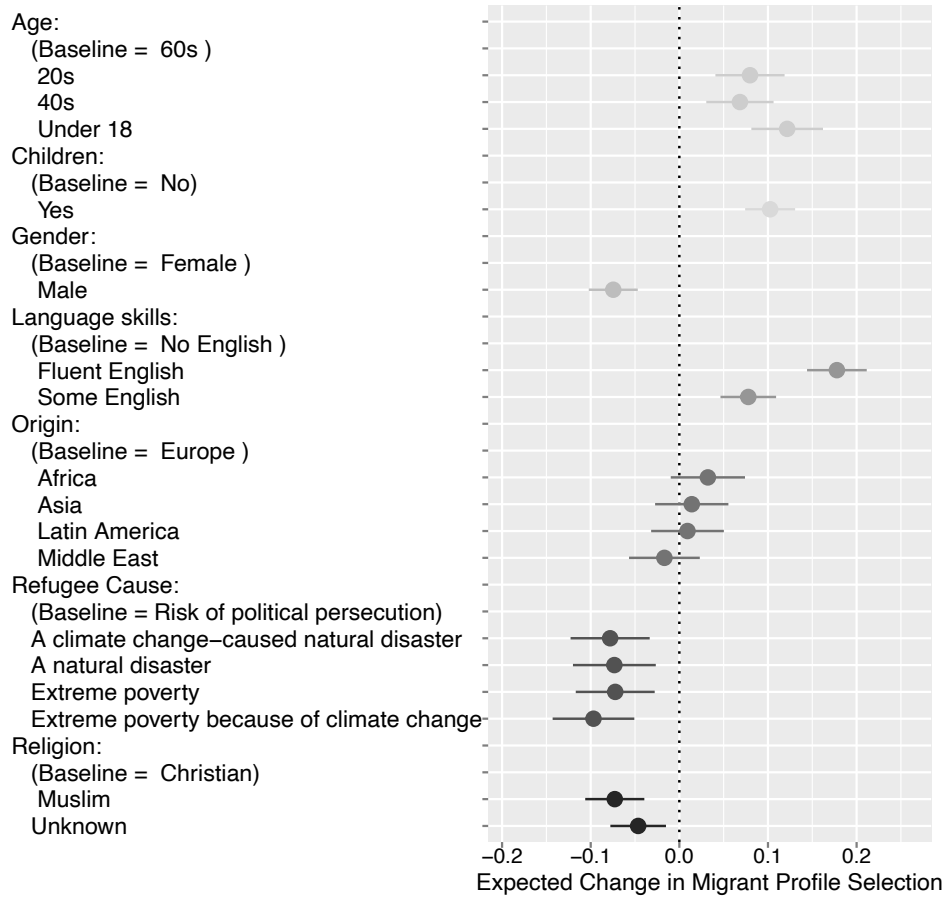


Figure A5: Subgroup Differences: Gender

((a)) Profile Selection Among Women



((b)) Profile Selection Among Men

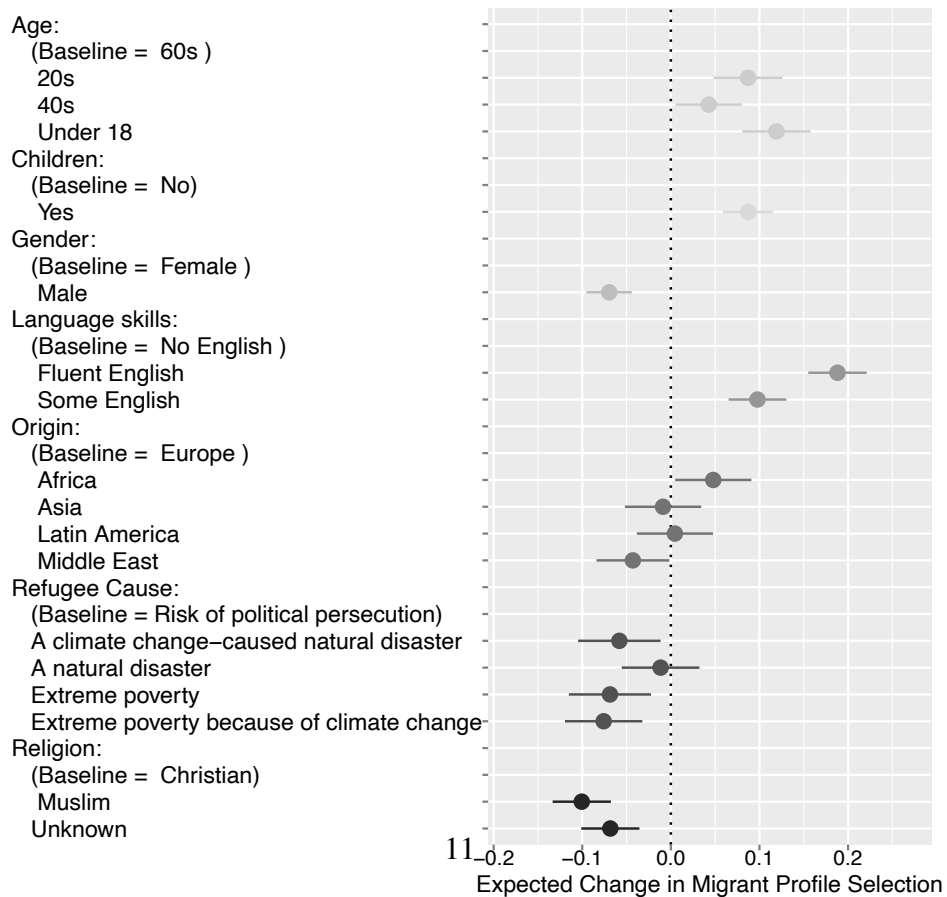
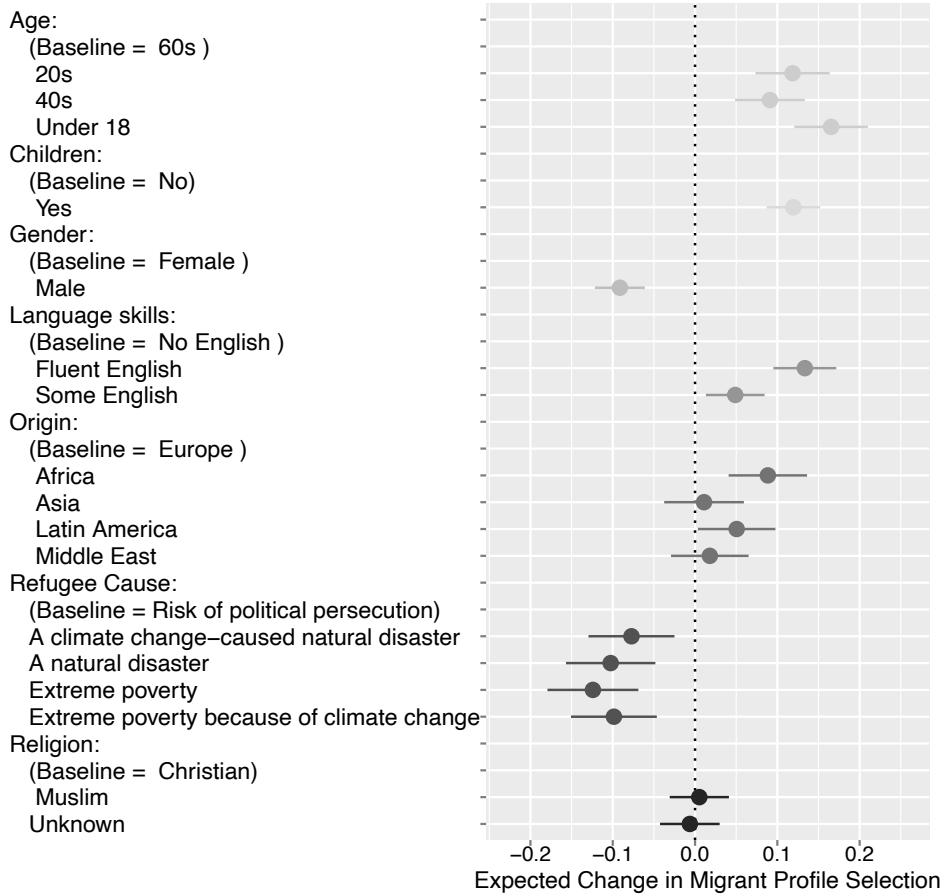


Figure A6: Subgroup Differences: Ideology

((a)) Profile Selection Among Liberals



((b)) Profile Selection Among Conservatives

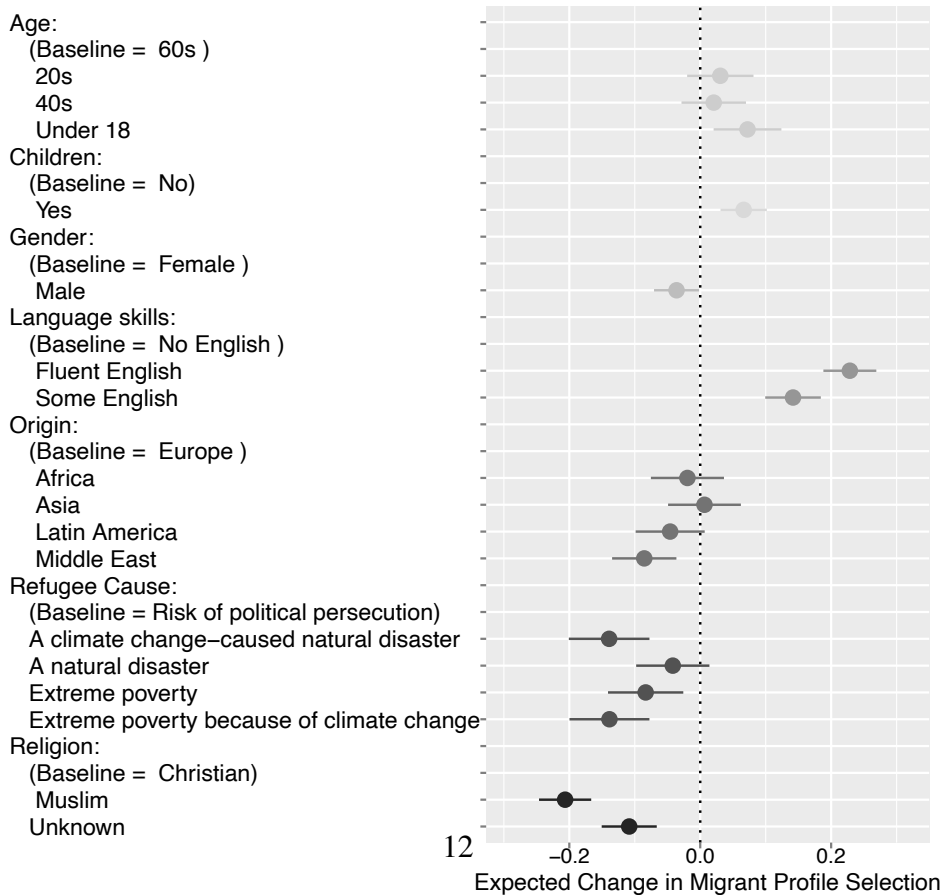
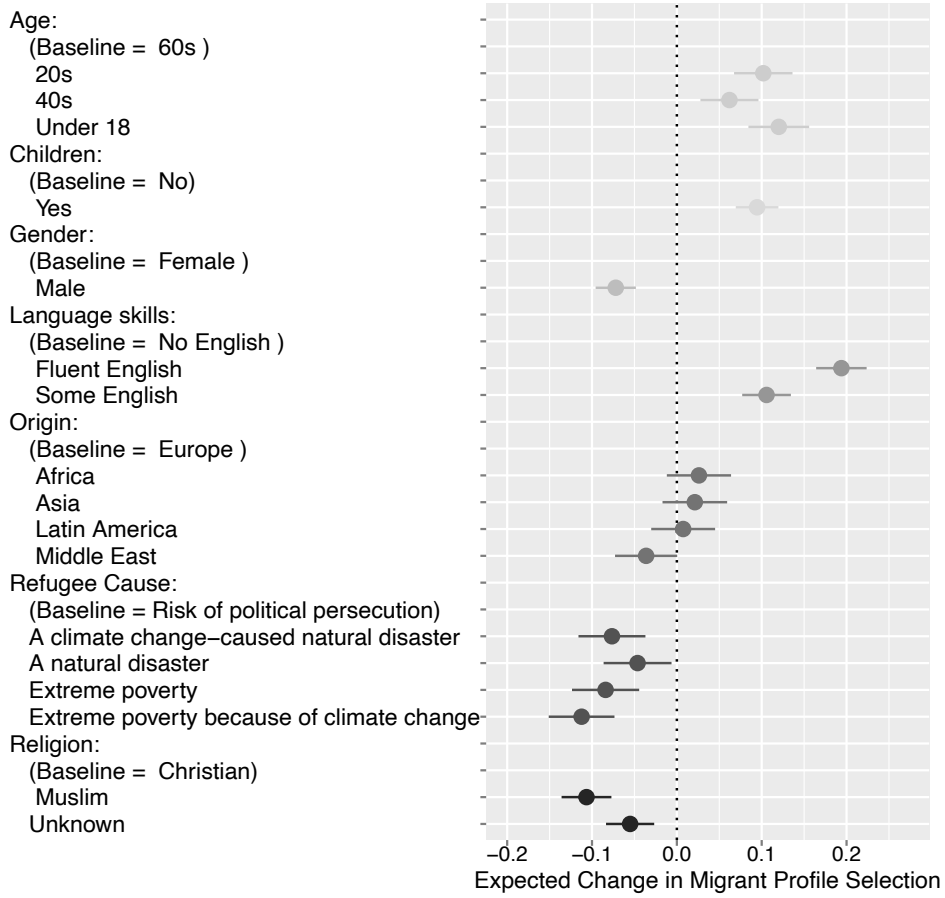


Figure A7: Subgroup Differences: Race

((a)) Profile Selection Among Whites



((b)) Profile Selection Among Non-Whites

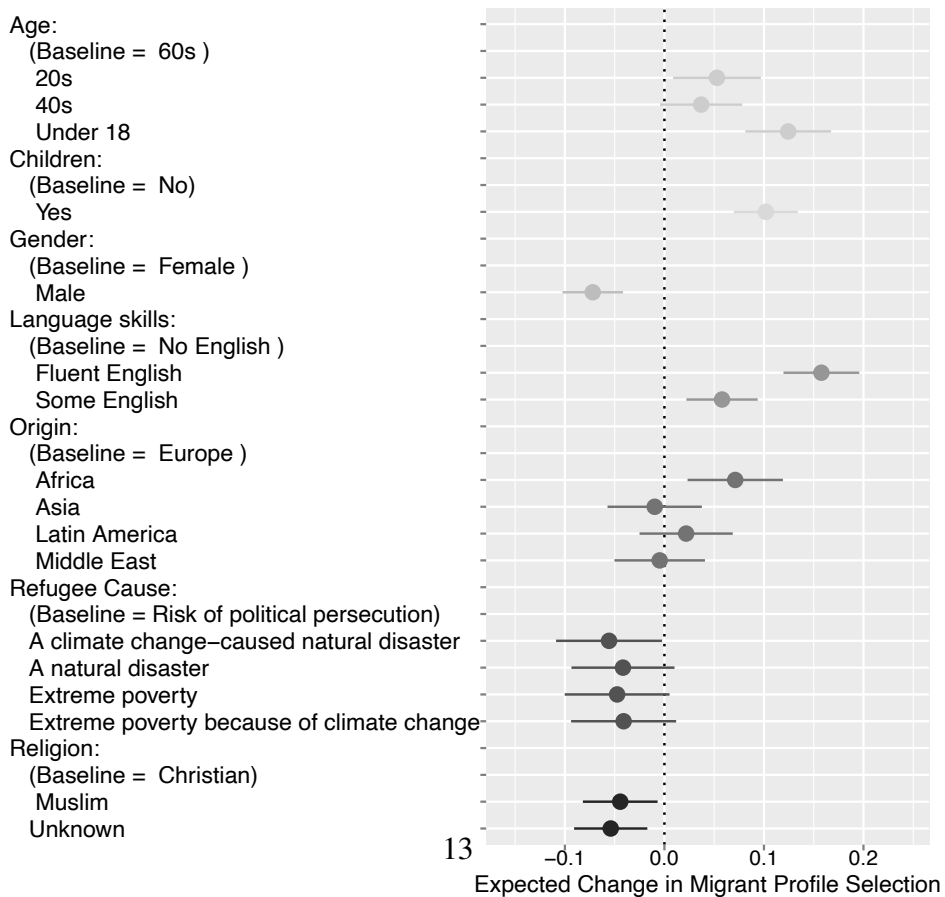
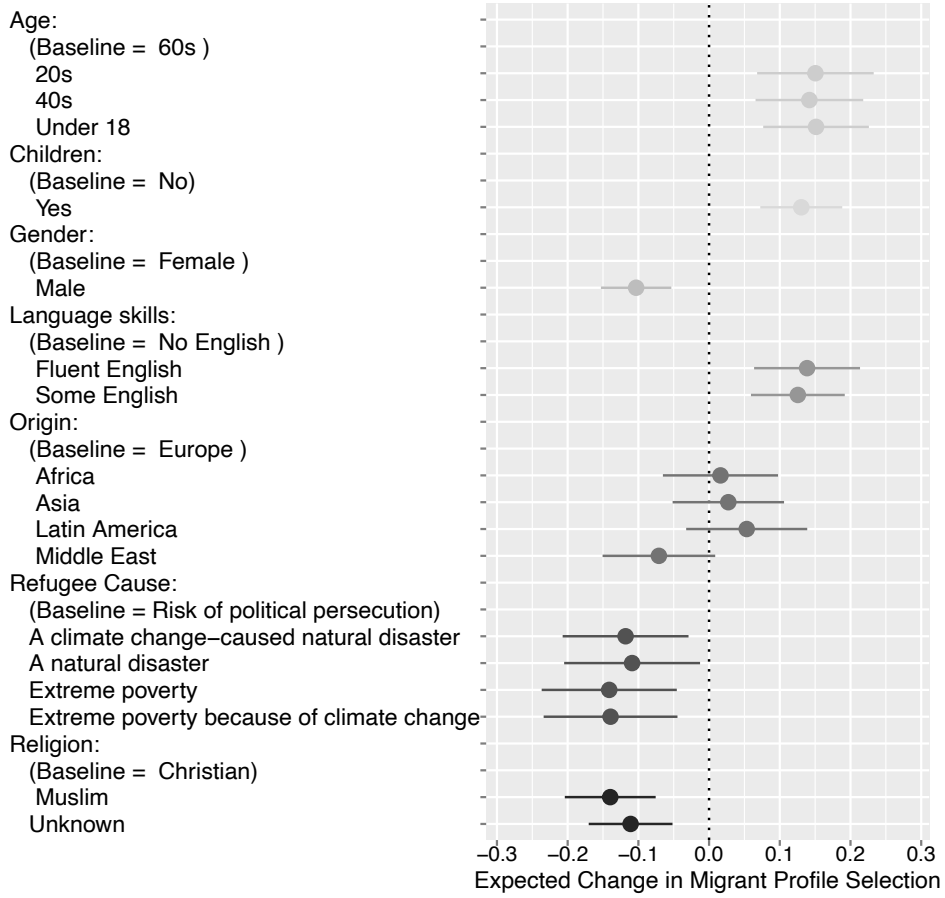


Figure A8: Subgroup Differences: Education

((a)) Profile Selection Among High Education



((b)) Profile Selection Among Low Education

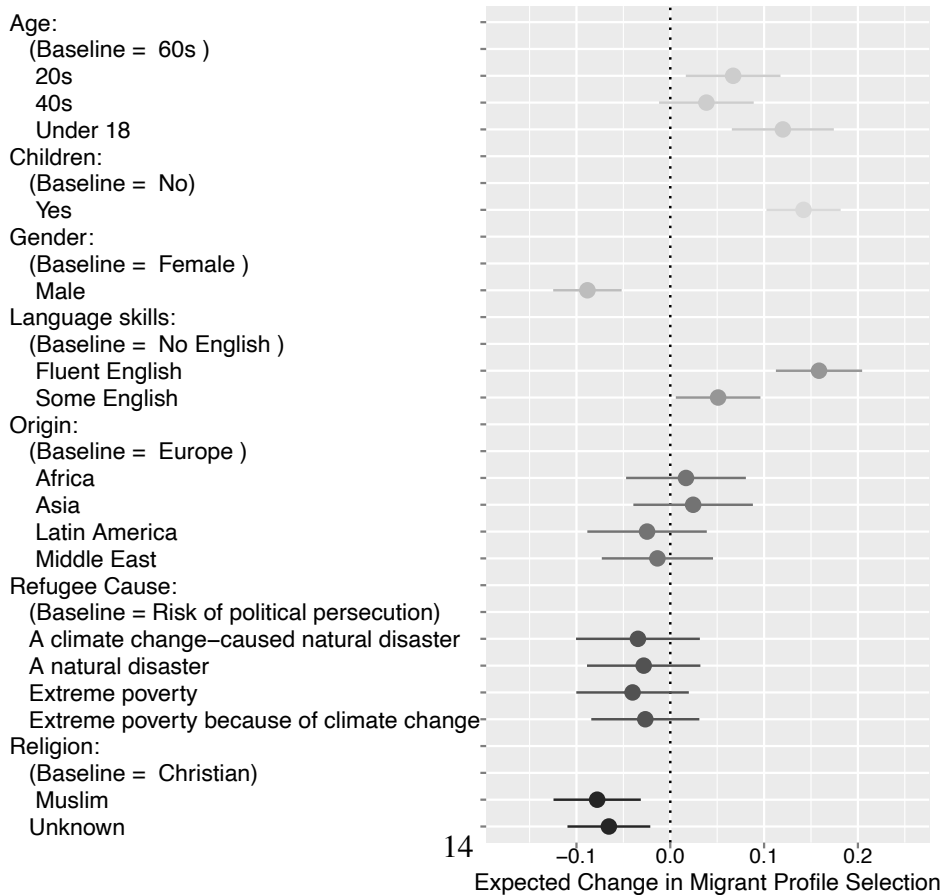
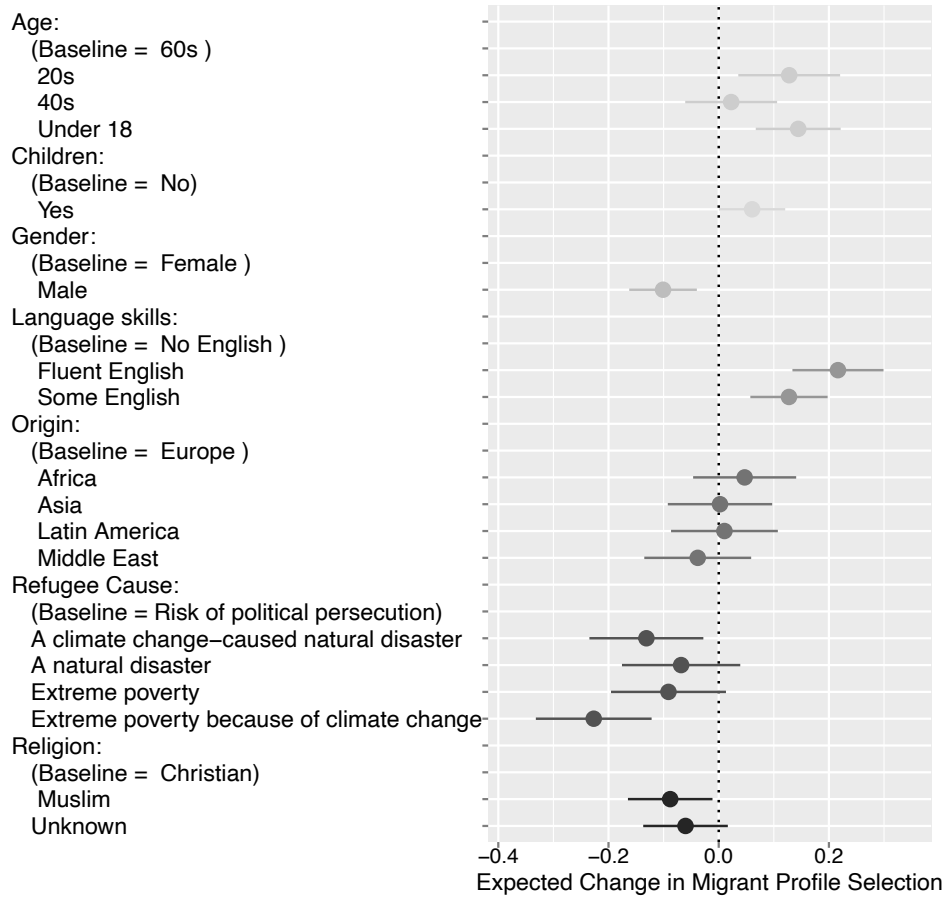


Figure A9: Subgroup Differences: Income

((a)) Profile Selection Among High Income



((b)) Profile Selection Among Low Income

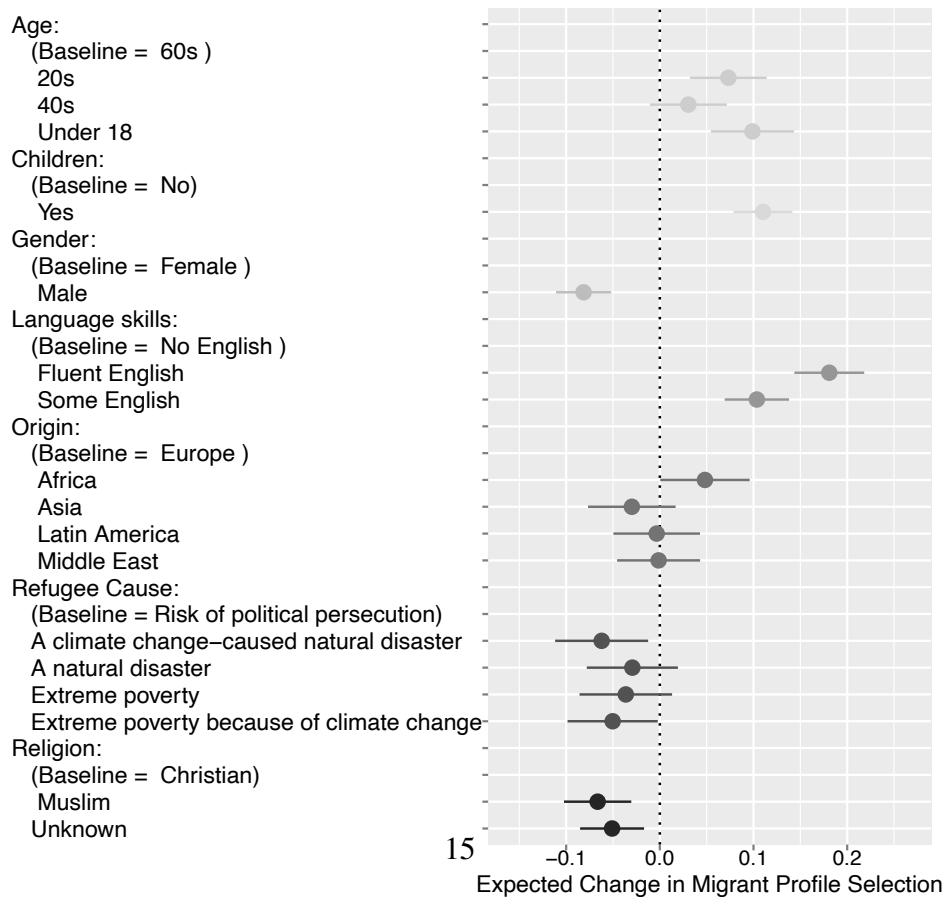
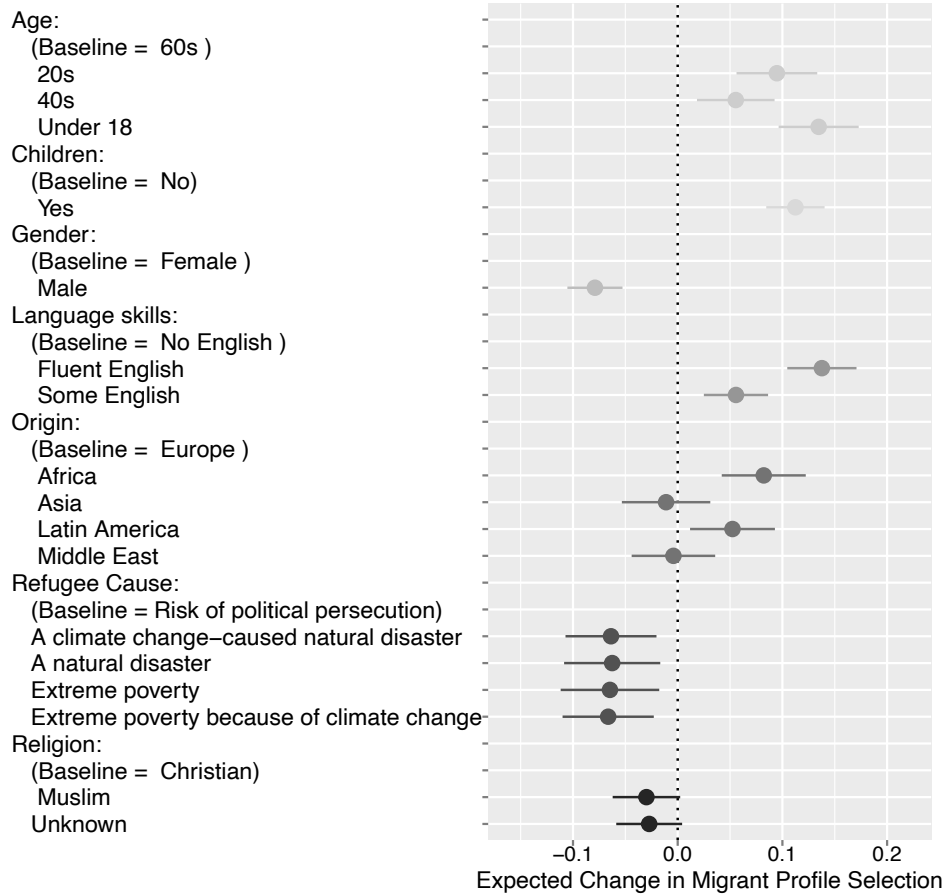
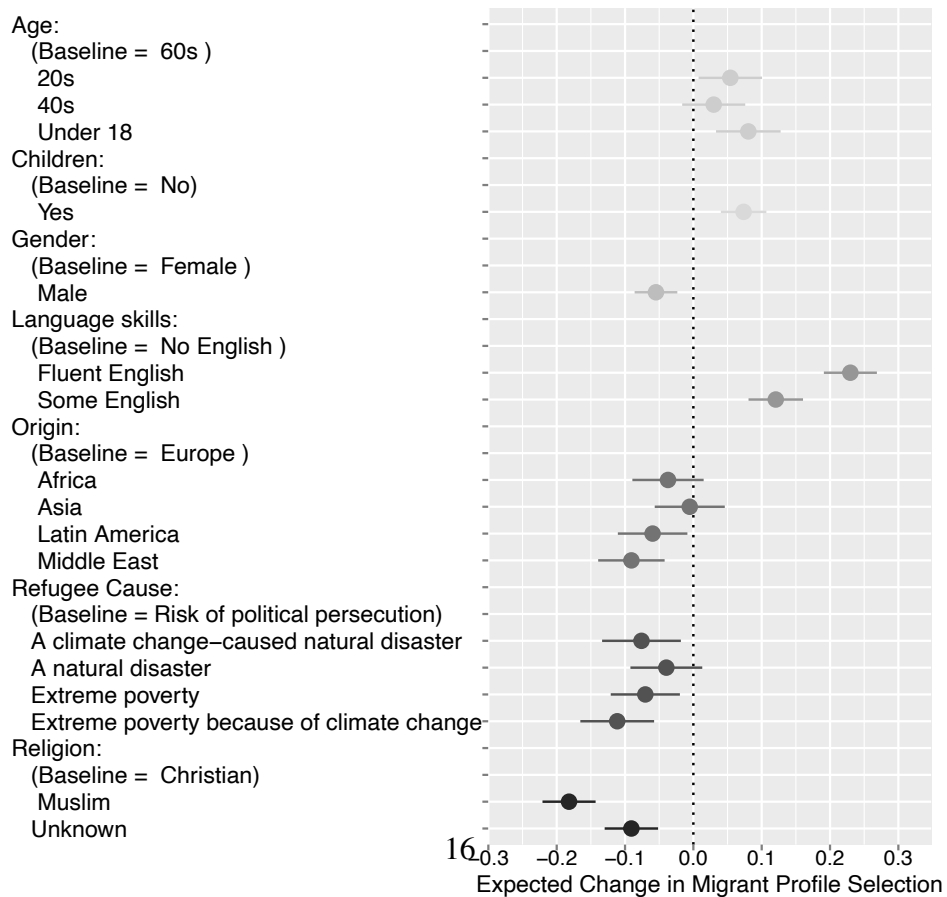


Figure A10: Subgroup Differences: Presidential Support

((a)) Profile Selection Among Biden Supporters



((b)) Profile Selection Among Trump Supporters



Open-Ended Question Regression Models

To understand more about who Americans imagine a climate refugee to be, after exposure to treatment, we asked survey respondents to engage in the following open-ended writing task: “In a few sentences below, please describe the person you imagine when you think of a refugee who is migrating to the US because of climate change.” We drop respondents who did not pass the attention check (97) and those who provided “gibberish” answers (78). We are left with 1,035 coherent responses.

A research assistant later coded respondents’ answers in a number of ways. Table A4 below lists the characteristics that were coded and the percent of open-ended responses that were coded as “yes” (1).

Table A4: Open-Ended Descriptives

Positive assessment of this type of refugee?	18.74%
Negative assessment of this type of refugee?	16.23%
Response mentions immigration policies?	0.19%
Response mentions refugee’s personal beliefs?	1.25%
Response describes a situation outside of the refugee’s control?	35.75%
a) Of these, the response mentions natural disasters?	77.56%
Response mentions age of the person coming?	3.57%
Response mentions language skills of the refugee coming?	3.77%
Response mentions education of the refugee coming?	2.22%
Response mentions whether the refugee coming is accompanied with children?	3.77%
Response mentions the region/country this type of refugee is coming from?	12.17%
Response mentions the gender of this type of refugee?	2.03%
Response mentions the religion of this type of refugee?	0.58%

From this, a few noteworthy points emerge: respondents were slightly more likely than not to offer a positive assessment (18.74%) of this type of refugee than a negative assessment (16.23%). Moreover, around one-third (35.75%) of the respondents described a situation that was outside of the refugee’s control - and among these respondents, around three-quarters (77.56%) mention natural disasters.

We examine how anxieties might be shaping how positively respondents might evaluate climate refugees. We asked respondents to indicate their anxieties about climate, their employment, and immigration policies. Specifically we asked “In the past year, how much anxiety and stress have the following caused you?” and asked survey respondents to indicate their anxiety about these three issues from No anxiety and stress at all (1) to The most anxiety and stress (10). The mean for each of the issues was as follows: 5.18 for climate change, 4.73 for immigration policies, and 4.95 for my employment.

Table A5: Table 1 Full Results: Examining the relationship between climate change anxiety and positive versus negative evaluations of climate migrants

	Positive Evaluation	Positive Evaluation	Negative Evaluation	Negative Evaluation
Anxiety: Climate Change	0.019*** (0.004)	0.013** (0.005)	-0.030*** (0.004)	-0.022*** (0.004)
Anxiety: Immigration	-0.008* (0.004)	-0.006 (0.004)	0.025*** (0.004)	0.019*** (0.004)
Anxiety: My Employment	0.001 (0.004)	-0.000 (0.004)	-0.008* (0.003)	-0.003 (0.004)
Female		0.021 (0.024)		-0.017 (0.022)
Age		-0.001 (0.001)		0.002* (0.001)
Democrat		-0.018 (0.041)		-0.066+ (0.037)
Independent		-0.030 (0.036)		-0.060+ (0.032)
Ideology		-0.018+ (0.010)		0.010 (0.009)
Income		-0.004 (0.009)		0.015+ (0.008)
Education		-0.002 (0.010)		-0.005 (0.009)
Black		-0.018 (0.038)		-0.024 (0.035)
Latino		0.036 (0.040)		0.014 (0.036)
Asian		-0.018 (0.052)		-0.048 (0.047)
Immigrant		0.005 (0.033)		-0.038 (0.030)
Other Race		-0.045 (0.056)		0.046 (0.050)
Constant	0.124*** (0.033)	0.278** (0.086)	0.239*** (0.030)	0.119 (0.078)
Observations	1035	1034	1035	1034
Adjusted R^2	0.020	0.017	0.090	0.105

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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