

You Traitor! Collaboration, Perceived Betrayal, and Political Tolerance in Ukraine

This material is intended for online publication only.

Lesley-Ann Daniels

Amélie Godefroidt

Contents

A Preregistration Details, Deviations, and Additions	2
A.1 Hypotheses	2
A.2 Analysis Plan	2
A.3 Additions and Deviations	4
B Research Ethics	6
B.1 Principle 1: Respect for Autonomy and Wellbeing	6
B.2 Principle 2: Individual Responsibility	6
B.3 Principle 3: Deviations from Principles	7
B.4 Principle 4: Power	7
B.5 Principle 5: Informed Consent	8
B.6 Principle 6: Deception	8
B.7 Principle 7: Harm	8
B.8 Principle 8: Trauma	9
B.9 Principle 9: Confidentiality	9
B.10 Principle 10: Impact	10
B.11 Principle 11: Legal Compliance	11
B.12 Principle 12: Shared Responsibility	11
C Sample Descriptives	12
D Diagnostics	15
D.1 Display Frequencies	15
D.2 Carry-Over Assumption	16
E Supplementary Analyses and Robustness Tests	17
E.1 Changing the Reference Category of Figure 4	17
E.2 Item-by-Item Analysis	18
E.3 Interaction Effects	21
F References	28

A Preregistration Details, Deviations, and Additions

The pre-registration outlined a plan to study how Ukrainian citizens evaluate collaborators using a conjoint experiment. The key focus was on political tolerance or citizens’ willingness to grant or deny political rights to individuals perceived as collaborators.

A.1 Hypotheses

The core hypotheses relating to collaborative actions (H1), motivation (H2), and restorative efforts (H3) underwent minor stylistic refinements in the manuscript mainly focusing on clarifying language and simplifying the structure of Hypothesis 2. The secondary hypotheses (H4–H6) regarding demographics were summarized in the manuscript text rather than being listed formally as H4–H6.

Tables A.1 and A.2 below compare the wording of the pre-registered *primary* and *secondary* hypotheses, respectively, with the revised wording in the manuscript.

A.2 Analysis Plan

The study was pre-registered as a rating-based conjoint experiment designed to examine how citizens grant or deny political rights to perceived collaborators. The experiment asked participants to evaluate five hypothetical vignettes, which were randomized across six distinct dimensions related to the collaborator’s actions, motivations, restorative efforts, and socio-demographic features. The target sample size was 2,100 Ukrainian residents, with a calculated minimum sample size of 1,566 respondents required for sufficient power.¹ The sample included Ukrainian residents aged 18 and older, recruited from an IPSOS online panel. Recruitment utilized soft quotas based on pre-war census data for age, gender, and region of living.

The pre-registered outcome measure was a mean index combining three items on a 5-point scale, resulting in a reliable measure of political tolerance. The three measures assessed: (1) citizenship status (“This person should be stripped of Ukrainian citizenship.”), (2) high-level political rights (“This person should be allowed to hold an official government position in Ukraine.”), and (3) low-level political rights (“This person should be allowed to vote in the next Ukrainian elections.”). The pre-registered analysis plan involved estimating Average Marginal Component Effects (AMCEs) and Marginal Means (MMs) using OLS regression, applying the standard $p < .05$ criteria. The analysis plan also pre-registered the use of individual item analysis as separate indicators to check whether results held across these different measures (with adjusting p -values for multiple comparisons).

We did not deviate from this plan.

¹A minimum total output size of 7,829 profiles was needed to detect an effect size of 0.05, with a power level of 80%, and a significance level of 0.05. Given that each respondent evaluated five vignettes, the corresponding minimum sample size was 1,566 respondents ($= \frac{7,829}{5}$). This power calculation was performed using the *cjpowR* package (Freitag and Schuessler 2020).

Table A.1: Comparison between Pre-registration and Manuscript of Primary Hypotheses

	Pre-registration	Manuscript
H1 (Collaborative Actions)	As individuals' level of collaboration increases, such as through active involvement in a Russian paramilitary group, citizens will be more likely to support the revocation of their political status and rights.	H1: Citizens are more likely to withdraw civil rights from collaborators as the severity of their collaboration increases.
H2 (Motivation)	Compared to a no-information condition, citizens are more likely to support the revocation of political status and rights for individuals who were intrinsically motivated (H2a) and, albeit to a lesser extent, opportunistic (H2b) in collaborating with the Russians. Conversely, citizens are more likely to grant political status and rights to those individuals who were forced to collaborate (H2c).	H2a: Compared to a no-information condition, citizens are more likely to withdraw civil rights from individuals who were <i>intrinsically</i> motivated to collaborate. H2b: Compared to a no-information condition, citizens are less likely to withdraw civil rights to individuals who were <i>coerced</i> to collaborate. H2c: Compared to a no-information condition, citizens are somewhat more likely to withdraw civil rights from individuals who collaborated to <i>survive</i>; however, this likelihood will be lower than for those who were intrinsically motivated and higher than for those who were coerced.
H3 (Restorative Actions)	Citizens are more likely to grant political status and rights to collaborators who engage in public restorative actions. Our primary objective is to compare the effects of various actions on promoting political tolerance. Additionally, we anticipate that citizens will be particularly inclined to grant political status and rights to collaborators who participate in restorative actions that reinforce Ukrainian patriotism (H3a) and bolster Ukraine's position in the war (H3b).	H3: Citizens are more likely to grant civil rights to collaborators who engage in restorative actions, especially those that demonstrate patriotism and strengthen the nation's war effort.

Table A.2: Comparison between Pre-registration and Manuscript of Secondary Hypotheses

Pre-registration		Manuscript
H4 (Gender)	Citizens will judge female collaborators less harshly than male collaborators.	The manuscript discusses the expectation that "people may impose harsher penalties on men for collaborating with the enemy."
H5 (Age)	Citizens will judge young collaborators more harshly than older collaborators.	The manuscript discusses the expectation that "age [...] conveys expectations of civic maturity and agency, shaping how people judge someone's capacity to uphold or betray the social contract."
H6 (Identity)	Citizens will judge collaborators who identify as ethnically Russian more harshly than ethnically Ukrainians.	The manuscript discusses the expectation that "citizens judge ingroup behavior more leniently and outgroup behavior more harshly."

A.3 Additions and Deviations

We also pre-registered three secondary items (i.e., “This person has betrayed Ukraine.”, “Everyone deserves a second chance, regardless of past behavior.”, and “This person voluntarily collaborated with Russia.”), measured on the same 1–5 disagree–agree scale as the political tolerance items. These items were pre-registered “as manipulation checks and/or mediators,” but the pre-analysis plan did not articulate specific mediation hypotheses nor did it specify procedures for identifying mediation effects.

Among the three items, perceived betrayal is the only measure that directly corresponds to our theoretical argument that judgments about loyalty to the nation structure political tolerance toward collaborators. Indeed, the item was included specifically to capture this a priori theorized mechanism. Moreover, it is the only item that plausibly captures a common evaluative mechanism linking all three core treatment dimensions in the conjoint design: collaborative actions, motivations, and restorative efforts. By contrast, the item on voluntary collaboration primarily functions as a manipulation check for the motivation attribute, capturing perceptions of agency and responsibility, while the second-chance item is most closely related to respondents’ reactions to restorative efforts and broader beliefs about forgiveness and rehabilitation. Because these latter items correspond to only a subset of the experimentally manipulated dimensions and do not provide a common mechanism connecting the full set of treatments to political tolerance, we do not analyze them further.

The exploratory analyses therefore focus exclusively on perceived betrayal and proceed in two steps: (1) we estimate whether the randomized attributes affect perceived betrayal using the same OLS specification as the pre-registered tolerance model, and (2) we examine whether betrayal is associated with political tolerance conditional on treatment indicators and sociodemographic covariates. These results

are presented solely as descriptive patterns consistent with the theoretical claim that betrayal judgments structure tolerance evaluations; they are not interpreted as evidence of a causal pathway.

Indeed, because betrayal and political tolerance were measured in the same post-treatment battery, any formal mediation or path analysis would suffer from post-treatment bias and other violations of identification assumptions (Acharya, Blackwell, and Sen 2018). More generally, mediation analyses in factorial and conjoint experiments face well-known challenges such as the absence of mediator manipulation, the difficulty of defining a single “treatment” in multi-attribute designs, and the sensitivity of indirect effects to parametric assumptions (Egami and Imai 2010; Imai, Keele, and Tingley 2010). In line with this, we avoid estimating indirect effects or presenting structural path models. Instead, we clarify in the manuscript how perceived betrayal and political tolerance are theoretically distinct but empirically related constructs, and we present the exploratory analyses only to illustrate their relationship.

B Research Ethics

We undertook a comprehensive set of measures to ensure that this study was designed and implemented in an ethically responsible manner, with particular attention paid to the protection and well-being of all research participants and staff. In what follows, we structure our ethical reflection according to the twelve principles outlined in the *American Political Science Association (APSA)’s 2020 Principles and Guidance for Human Subjects Research*. This framework enables transparent reporting and facilitates ethical accountability across all stages of the research process. Prior to data collection, the study received formal privacy and ethics approval from Pompeu Fabra University’s Institutional Committee for the Ethical Review of Projects (CIREP #273), in compliance with European Union (EU) regulations for research involving human subjects and the General Data Protection Regulation (GDPR). The hypotheses and survey instrument were also pre-registered at Open Science Framework (<https://doi.org/10.17605/OSF.IO/Z8PBN>).

B.1 Principle 1: Respect for Autonomy and Wellbeing

Principle: Political science researchers should respect autonomy, consider the wellbeing of participants and other people affected by their research, and be open about the ethical issues they face and the decisions they make when conducting their research.

Answer: Our research respected the autonomy of all participants. Participation was entirely voluntary, with informed consent obtained through clear and comprehensive information about the research purpose, content, and potential risks. We also provided the contact information of the Principal Investigator (PI). The translated informed consent form is included in the Replication Folder (/documentation/). Participants had full autonomy in choosing whether to complete the survey in Ukrainian or Russian and could do so at a time of their convenience as we deliberately employed a non-intrusive online survey format, avoiding more intrusive modes such as telephone or face-to-face interviews.

B.2 Principle 2: Individual Responsibility

Principle: Political science researchers have an individual responsibility to consider the ethics of their research related activities and cannot outsource ethical reflection to review boards, other institutional bodies, or regulatory agencies.

Answer: Ethical reflection formed an integral part of our research design, not an administrative formality delegated to external review bodies. While we obtained institutional ethics approval, we also engaged in ongoing ethical deliberation within the research team and in close consultation with various Ukrainian partners to ensure that our design choices were both culturally sensitive and contextually appropriate.

Prior to designing the survey, the principal investigator and local research team conducted in-depth interviews with Ukrainian academics; members of civil society organizations working on conflict resolution,

IDPs, and issues related to free speech; and peace activists. These preliminary interviews were designed to assess potential risks, clarify key concepts, and deepen our understanding of the local context in which the study would be embedded.

Following the initial design of the survey instrument, a second round of interviews was carried out with Ukrainian citizens to gather qualitative feedback on the topics addressed in the survey. These interviews were conducted using a semi-structured format and employed snowball sampling while also ensuring variation across age, gender, and region. Participants were given the option to be interviewed in either Ukrainian or Russian, and all interviews were translated into English by the local interviewer.

The insights gained from these two phases of interviews were instrumental in shaping an ethically sound and contextually grounded survey instrument, including the experimental component.

B.3 Principle 3: Deviations from Principles

Principle: These principles describe the standards of conduct and reflexive openness that are expected of political science researchers. In some cases, researchers may have good reasons to deviate from these principles (for example, when the principles conflict with each other). In such cases, researchers should acknowledge and justify deviations in scholarly publications and presentations of their work.

Answer: To the best of our knowledge, we can attest that we have not deviated from any of the principles outlined here.

B.4 Principle 4: Power

Principle: When designing and conducting research, political scientists should be aware of power differentials between researcher and researched, and the ways in which such power differentials can affect the voluntariness of consent and the evaluation of risk and benefit.

Answer: We were aware of the potential power asymmetries inherent in our research. Our participants—Ukrainian civilians living through an active conflict—were situated in a context of heightened vulnerability. To mitigate these imbalances, we employed a self-administered online survey, which respondents could complete at a time and location of their choosing. This approach reduced the potential for coercion or discomfort that might arise from face-to-face or other interviewer-administered formats, particularly given the positional distance between us, as foreign researchers, and the respondents, as civilians in a fragile setting. In addition, respondents had the agency to conduct the survey in Ukrainian or Russian, and received a small token for their participation in the study. The token was deemed a fair compensation for the duration of the study (median duration of the survey was 14.38 minutes), in line with IPSOS policy, and comparable to similar studies. Those measures were implemented to empower research participants.

B.5 Principle 5: Informed Consent

Principle: Political science researchers should generally seek informed consent from individuals who are directly engaged by the research process, especially if research involves more than minimal risk of harm or if it is plausible to expect that engaged individuals would withhold consent if consent were sought.

Answer: All participants were presented with a consent form outlining: (1) the general purpose of the study, (2) the specific survey content and estimated duration, (3) the right to withdraw at any time without providing a reason, (4) assurances of anonymity and confidentiality, (5) compliance with data protection regulations, and (6) contact information for further inquiries. The informed consent form is included in the Replication Folder (/documentation/). Consent was opt-in and the survey was terminated when no consent was obtained.

Moreover, at the start of the experiment, we explicitly acknowledged that the following questions might cause discomfort and reiterated that all responses would be recorded anonymously and used solely for research purposes. During debriefing, respondents were directed to organizations working on war-related trauma (see also Principle #8)

B.6 Principle 6: Deception

Principle: Political science researchers should carefully consider any use of deception and the ways in which deception can conflict with participant autonomy.

Answer: In our conjoint experimental, respondents were clearly informed that they would assess hypothetical, imaginary profiles. This was crucial for minimizing potential distress or harm while maintaining the integrity of the experiment. The rest of the study did not contain any deception.

B.7 Principle 7: Harm

Principle: Political science researchers should consider the harms associated with their research.

Answer: We tried to minimize the possibility of harm for all or any specific sub-group of our sample. Questions deemed sensitive—particularly those concerning ethnic identity or victimization—were revised after consultation with Ukrainian experts. When gauging respondents’ war exposure, we stressed that “If this question causes you distress or is difficult, you do not need to answer it.” In addition, we piloted the survey to ensure all question wordings were culturally appropriate and ethically sound. The study avoided contacting individuals via intrusive methods and was only distributed via the IPSOS panel to those who had previously consented to participate in surveys. We acknowledge, however, that the survey may have been particularly triggering for respondents with direct exposure to war-related violence (see Table C.3). The following section outlines the measures we took to address this concern.

B.8 Principle 8: Trauma

Principle: Political science researchers should anticipate and protect individual participants from trauma stemming from participation in research.

Answer: Anticipating the risk of trauma or re-traumatization, especially in a wartime setting, we took several measures: (1) survey participation was fully asynchronous and voluntary; (2) participants could withdraw at any time without consequence; (3) at the end of the survey, respondents were offered support information, including links to Doctors Without Borders and the Ukrainian “Friend” chatbot developed for psychological support. This approach aligns with best practices on minimizing harm while allowing participants to contribute if they found it meaningful. Moreover, recent qualitative evidence suggests that research participants in warzones may find their participation in a study healing, viewing it “as an opportunity to tell their stories to a broader audience than they could otherwise reach” (Kao and Revkin 2023, 365).

B.9 Principle 9: Confidentiality

Principle: Political science researchers should generally keep the identities of research participants confidential; when circumstances require, researchers should adopt the higher standard of ensuring anonymity.

Answer: Participant confidentiality was rigorously protected. Responses were collected anonymously, with no personally identifiable information retained. That is, we did not collect information such as names, (e-mail) addresses, IP addresses, telephone numbers, etc. We also only collected the most necessary sociodemographic and political characteristics (i.e., age, year of birth, ethnic background, voting in last elections), using broad answer categories. As a result, it will not be possible -neither directly nor indirectly- to identify individuals from the data.

Furthermore, we collected data by collaborating with IPSOS. IPSOS is a UK-based survey company that complies with the Market Research Society’s Code of Conduct, and adheres to the UK Data Protection Act 2018 (UK DPA) and the UK General Data Protection Regulation (UK GDPR). IPSOS also adopts the fundamental principles of the EU’s General Data Protection Regulation (“GDPR”) and is one of the partners of the European Commission when they want to collect scientific evidence to support their policies. For more information, see <https://www.ipsos.com/en-uk/privacy-data-protection>.

To further protect the privacy of the research subjects, we (1) strictly managed access rights to datasets. Only the PI had access to the full dataset and the co-author access to the data she strictly needed to test the hypotheses (following the need-to-know principle). (2) We activated multifactor authentication with the KU Leuven Authenticator app for OneDrive Business. (3) The laptop(s) on which the datasets are stored are password-protected.

B.10 Principle 10: Impact

Principle: Political science researchers conducting studies on political processes should consider the broader social impacts of the research process as well as the impact on the experience of individuals directly engaged by the research. In general, political science researchers should not compromise the integrity of political processes for research purposes without the consent of individuals that are directly engaged by the research process.

Answer: We carefully considered the broader social and political impact and implications of our research.

First, collaboration in Ukraine remains a pressing yet underexplored issue for both researchers and policymakers, as reflected in media coverage and confirmed in our in-depth interviews. Several interviewees emphasized the critical need to address collaboration for Ukraine’s future reconciliation efforts, but noted the limited tools available beyond the recent legal framework. One peace activist, in particular, stressed that public attitudes toward collaborators could profoundly shape the prospects for peacebuilding in Ukraine (author interview, 12 January 2023). In light of these realities, we view this study as a potentially high-impact contribution to both scholarship and practice. Specifically, given the sensitivity and urgency of the topic, we believe a systematic, well-theorized, and causally identified study is essential.

Second, this study does not constitute an intervention into ongoing political processes, such as current peace negotiations in Ukraine, but rather an assessment of existing public attitudes toward enemy collaboration. Although we do not engage directly with political processes, actors, or institutions, we implemented several safeguards to minimize any foreseeable risks of harm or stigmatization of certain subgroups or regions, including full anonymization of individual-level data, the exclusive reporting of aggregate results, and following a strict data management plan. Given these precautions, it is highly unlikely that third parties—such as Russian authorities—could identify participants or access sensitive information. Accordingly, we assess the risk of external repercussions for participants as minimal.

Beyond external repercussions, we also considered the possibility of harm resulting directly from participation in the study. Our primary aim was to minimize any potential risks while maximizing the possible benefits of participation. To that end, all experimental vignettes were explicitly introduced as hypothetical scenarios (see also Principle #6), avoiding both deception and the risk of personal distress. The study’s purpose and nature were clearly communicated during the consent process (see also Principle #5), ensuring participants could make an informed decision about their involvement. To acknowledge their time and contributions (see also Principle #4), participants received a small token of appreciation, and their role in supporting research on peacebuilding in Ukraine was explicitly recognized. We also provided contact information of local support groups at the end of the survey (see also Principle #8).

In sum, consistent with standard ethical guidelines for social science research in conflict settings, we assess external and internal impacts and risks of participation as minimal and proportionate to the broader societal value of the research.

B.11 Principle 11: Legal Compliance

Principle: Political science researchers should be aware of relevant laws and regulations governing their research related activities.

Answer: All aspects of the research adhered to Ukrainian, Spanish, and Norwegian legal frameworks. Ethics approval was obtained from Pompeu Fabra University’s Institutional Committee for the Ethical Review of Projects (CIREF #273) prior to data collection. All procedures were in compliance with GDPR and local research regulations, and the data collection firm (IPSOS) operated under relevant national permissions (see also Principle #9).

B.12 Principle 12: Shared Responsibility

Principle: The responsibility to promote ethical research goes beyond the individual researcher or research team.

Answer: We contributed to a culture of ethical political science research through collaboration with Ukrainian scholars, iterative piloting, and open reflection on the limitations and challenges of conducting research during war. For example, we have explicitly discussed the ethical aspects of collecting data during an active war in all the presentations of this project (i.e., conferences, presentations to the Ukrainian and Norwegian Foreign Ministries). We also intend to publish our replication materials, minus any identifying details, to promote transparency without compromising participant confidentiality.

C Sample Descriptives

Below, we present three tables summarizing key descriptive statistics of our sample. The exact operationalization of all variables is documented in the codebook contained in the replication materials. Table C.1 reports summary statistics for core socio-demographic characteristics (e.g., age, gender, region of residence), alongside pre-war benchmarks for comparison.

Table C.2 presents respondents' ethnic self-identifications. Because individuals could select all identities with which they identify, the categories are not mutually exclusive. The table therefore reports the percentage of respondents who selected each identity independently. For example, a respondent may identify as both Ukrainian and Polish and, hence, counted in both categories. As a result, percentages do not sum to 100.

Finally, Table C.3 shows the share of respondents who experienced different types of war-related incidents. Here too, respondents could report multiple experiences, so totals do not add up to 100%. Based on these items, we construct the war-exposure variable included in Table C.1, defined as having experienced at least one of the incidents listed. We exclude income loss from this composite measure, however, because it was reported by a large share of respondents, making it too widespread to meaningfully differentiate victims in our analyses.

Table C.1: Sample Statistics

	Sample	Population
Age		
18-30	20.79%	20%
31-40	27.37%	26%
41-50	23.34%	23%
51+	28.50%	30%
Gender		
Male	46.54%	46%
Female	53.46%	54%
Region		
Central	10.86%	11%
Eastern	35.04%	35%
Kyiv	12.14%	12%
Northern	9.83%	10%
Southern	11.45%	12%
Western	20.69%	21%
Urbanization		
Urban (100,000+ inhabitants)	60.0%	67%
Rural (<100,000 inhabitants)	40.0%	33%
Employed		
Yes	62.11%	NA
No	37.89%	NA
Survey language		
Ukrainian	88.50%	NA
Russian	11.50 %	NA
Political identification		
Voted for Zelensky	60.10%	73%
Other	39.90%	27%
War exposure		
No	37.79%	NA
Yes	62.21%	NA

Note: Population data are from the State Statistics Service figures of January 2022 and used for quota sampling, except for the political identification variable, of which population results are based on the 2019 presidential election, and the urbanization variable, of which population results are based on the last available census (2001).

Table C.2: Ethnic Self-Identification Among Respondents

Identity	Percent
Ukrainian	95.23%
Russian	7.17%
Belarusian	0.84%
Bulgarian	0.69%
Jewish	1.97%
Crimean Tatar	0.34%
Moldovan	0.93%
Polish	2.16%
Romanian	0.69%
Hungarian	0.44%
Other identity	1.03%

Table C.3: Percentage of Respondents Exposed to Each Type of Victimization

Victimization Type	Percent Exposed
Lost income	69.83%
Property destruction	9.93%
Physical disabled	0.39%
Family member killed	21.43%
Family member injured	19.41%
Internally displaced	22.41%
Fled Ukraine	5.55%
Mental illness	15.28%
Physical illness	6.29%
Other	7.57%

D Diagnostics

D.1 Display Frequencies



Figure D.1: Display Frequency of Conjoint Features.

Note: This figure displays the frequency of each attribute level shown to respondents, confirming that all levels appeared with approximately equal probability, as expected from the randomization procedure.

D.2 Carry-Over Assumption

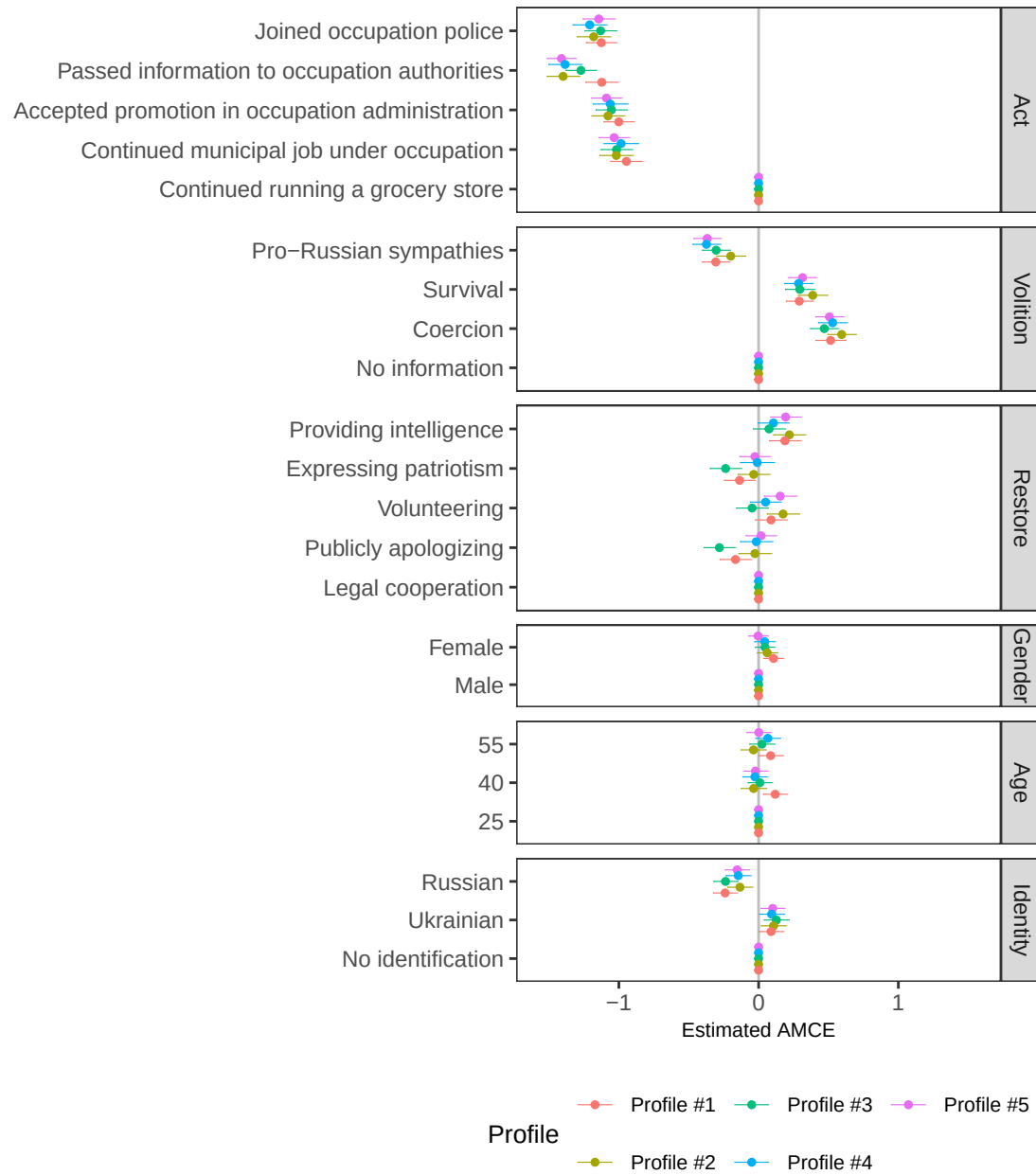


Figure D.2: Estimated AMCEs by Profile Number.

Note: This figure tests the carryover assumption by examining whether the order of a profile influences evaluations. As the estimates are fairly consistent across different profiles, this indicates that the results are not biased by ordering effects.

E Supplementary Analyses and Robustness Tests

E.1 Changing the Reference Category of Figure 4

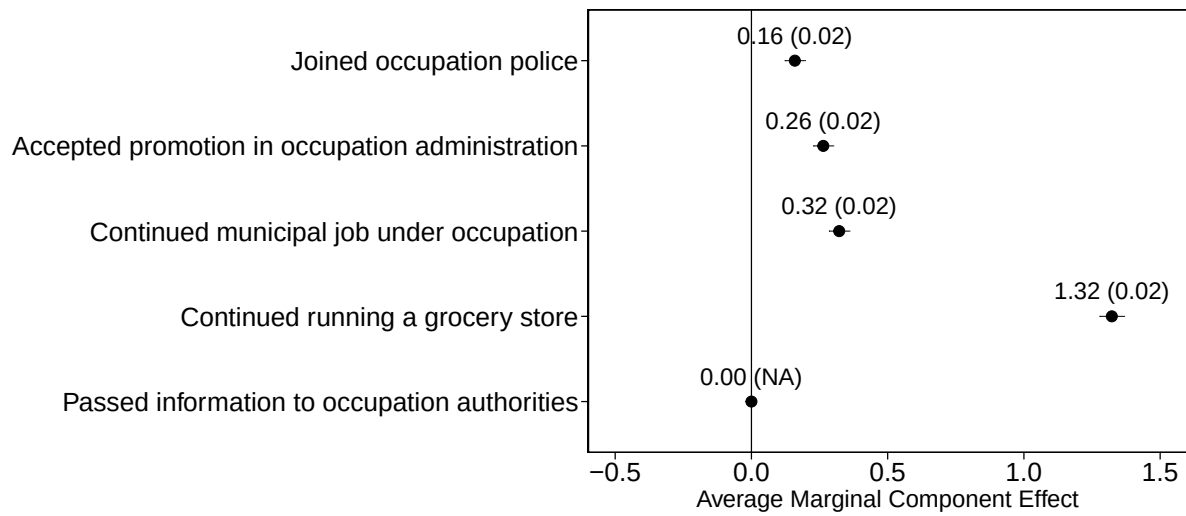


Figure E.1: Changing the Reference Category (Replication of Figure 4).

Note: This figure corroborates Footnote 8 in the main paper by confirming that all other types of collaboration are evaluated more positively compared to "passed information."

E.2 Item-by-Item Analysis²

E.2.1 Experimental Results for Collaborative Acts (H1; Replications of Figure 4)



Figure E.2: Effects of Collaborative Acts on "Allow to Vote"



Figure E.3: Effects of Collaborative Acts on "Allow to Hold Office"

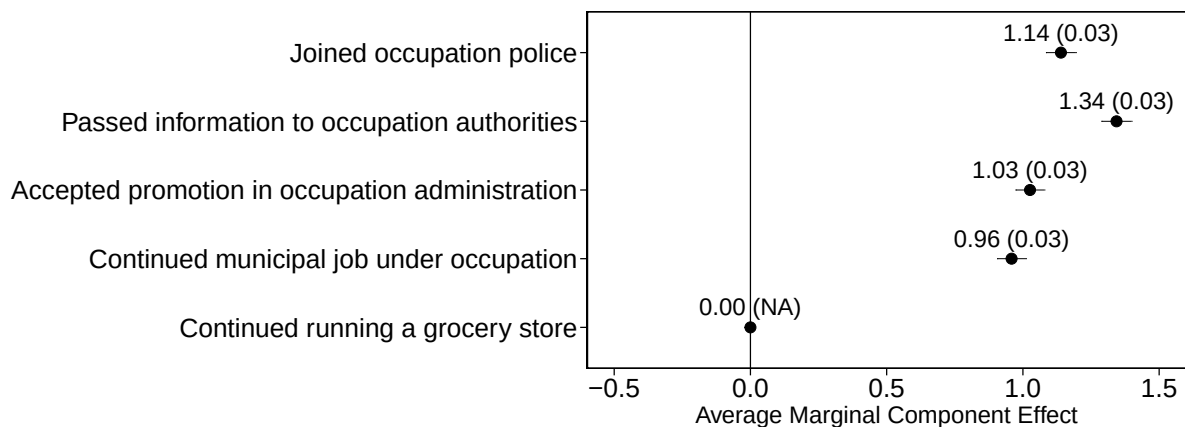


Figure E.4: Effects of Collaborative Acts on "Revoke Citizenship"

²In the item-by-item analysis, the citizenship item is presented in its original, reverse-worded form, which implies a reversed direction of effects. For all index-based analyses reported in the main paper, this item is recoded to ensure consistent directionality across measures.

E.2.2 Experimental Results for Volition (H2; Replications of Figure 5)

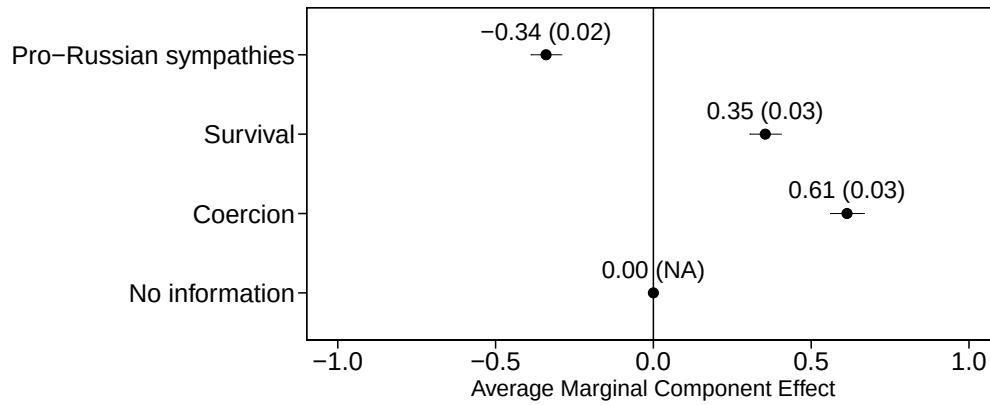


Figure E.5: Effects of Volition on "Allow to Vote"

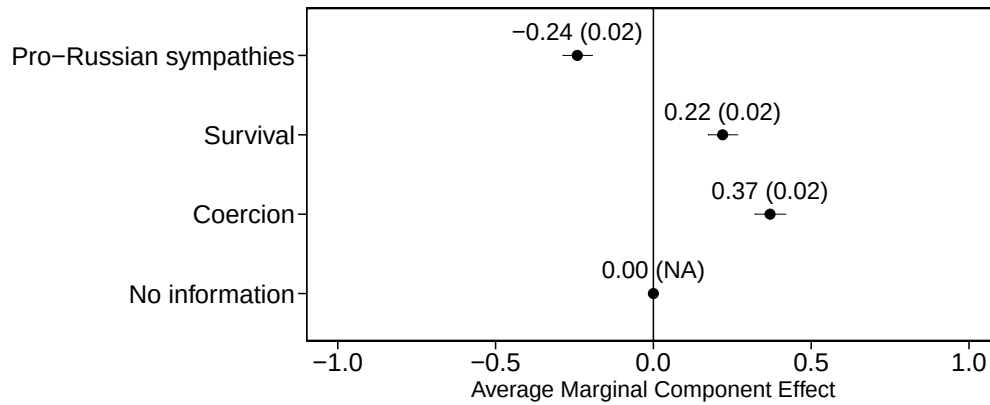


Figure E.6: Effects of Volition on "Allow to Hold Office"

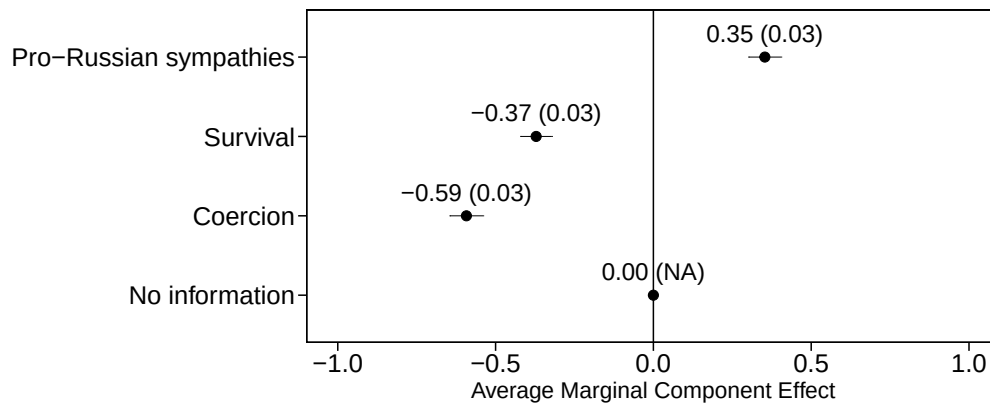


Figure E.7: Effects of Volition on "Revoke Citizenship"

E.2.3 Experimental Results for Restorative Efforts (H3; Replications of Figure 6)

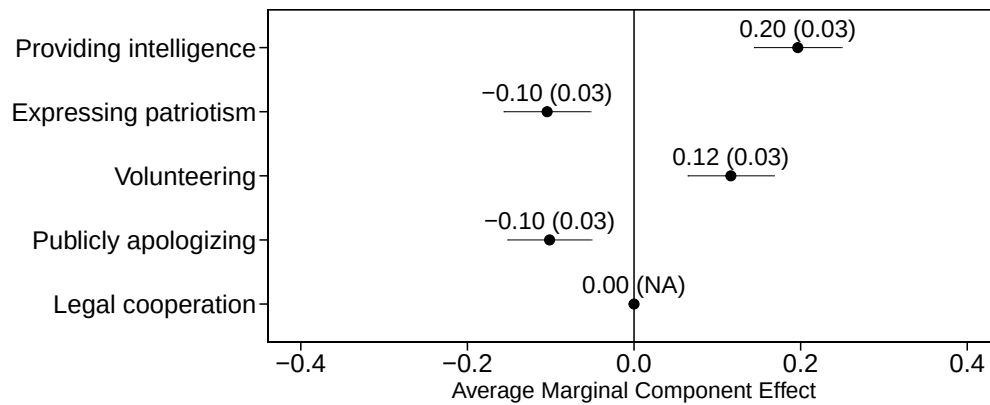


Figure E.8: Effects of Restorative Efforts on "Allow to Vote"

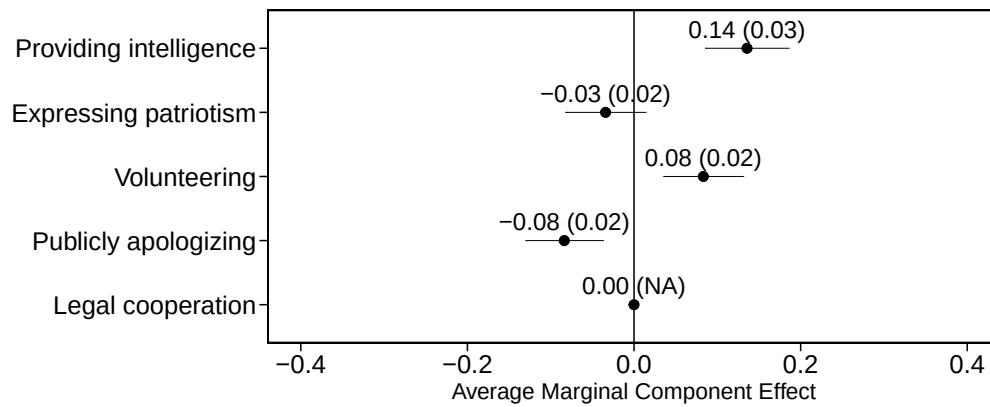


Figure E.9: Effects of Restorative Efforts on "Allow to Hold Office"

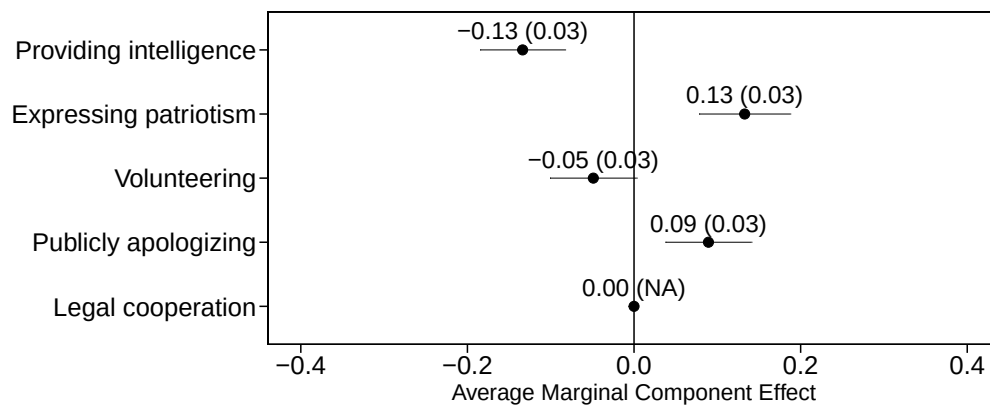


Figure E.10: Effects of Restorative Efforts on "Revoke Citizenship"

E.3 Interaction Effects

In an exploratory (i.e., non-pre-registered) analysis, we examine whether respondents integrate information about the collaborator’s act, motivation, and restorative effort in non-additive ways. To do so, we investigate treatment heterogeneity using three complementary estimands: (1) conditional Average Marginal Component Effects (AMCEs), (2) conditional Marginal Means (MMs), and (3) Average Marginal Interaction Effects (AMIEs). Each estimand captures a distinct aspect of how the three treatment attributes jointly shape political tolerance.

First, we estimate AMCEs *conditional on the levels of another attribute*. Conditional AMCEs thus describe the effect of a given attribute within a specific context, allowing us to examine how respondents evaluate restorative efforts and motivations across different collaboration scenarios (Figure E.11), as well as how they evaluate collaborative actions and restorative efforts across different motivational contexts (Figure E.12). Importantly, conditional AMCEs do not, by themselves, establish whether effects statistically differ across contexts; rather, they provide subgroup-specific estimates that can subsequently be compared.

Second, we compute conditional Marginal Means, which report the expected level of tolerance for a given attribute level while holding another attribute at a specific value and averaging over all remaining attributes. Unlike AMCEs, which are difference-based, MMs are level-based predictions that reveal the baseline severity of evaluations across combinations of *Act*, *Volition*, and *Restore*. Conditional MMs therefore clarify the substantive magnitude of differences and help diagnose ceiling or floor effects in these multidimensional profiles.

Finally, we assess whether the effect of one attribute changes as a function of another using AMIEs, which capture second differences in predicted outcomes—that is, differences between conditional AMCEs. Following Egami and Imai (2019), AMIEs provide a formal test of interaction effects by quantifying the extent to which the effect of one attribute varies across levels of another attribute. Positive or negative AMIEs indicate that respondents evaluate combinations of attributes in ways that depart from simple additivity, producing either amplified or attenuated responses to particular combinations of wartime behaviors and motivations.

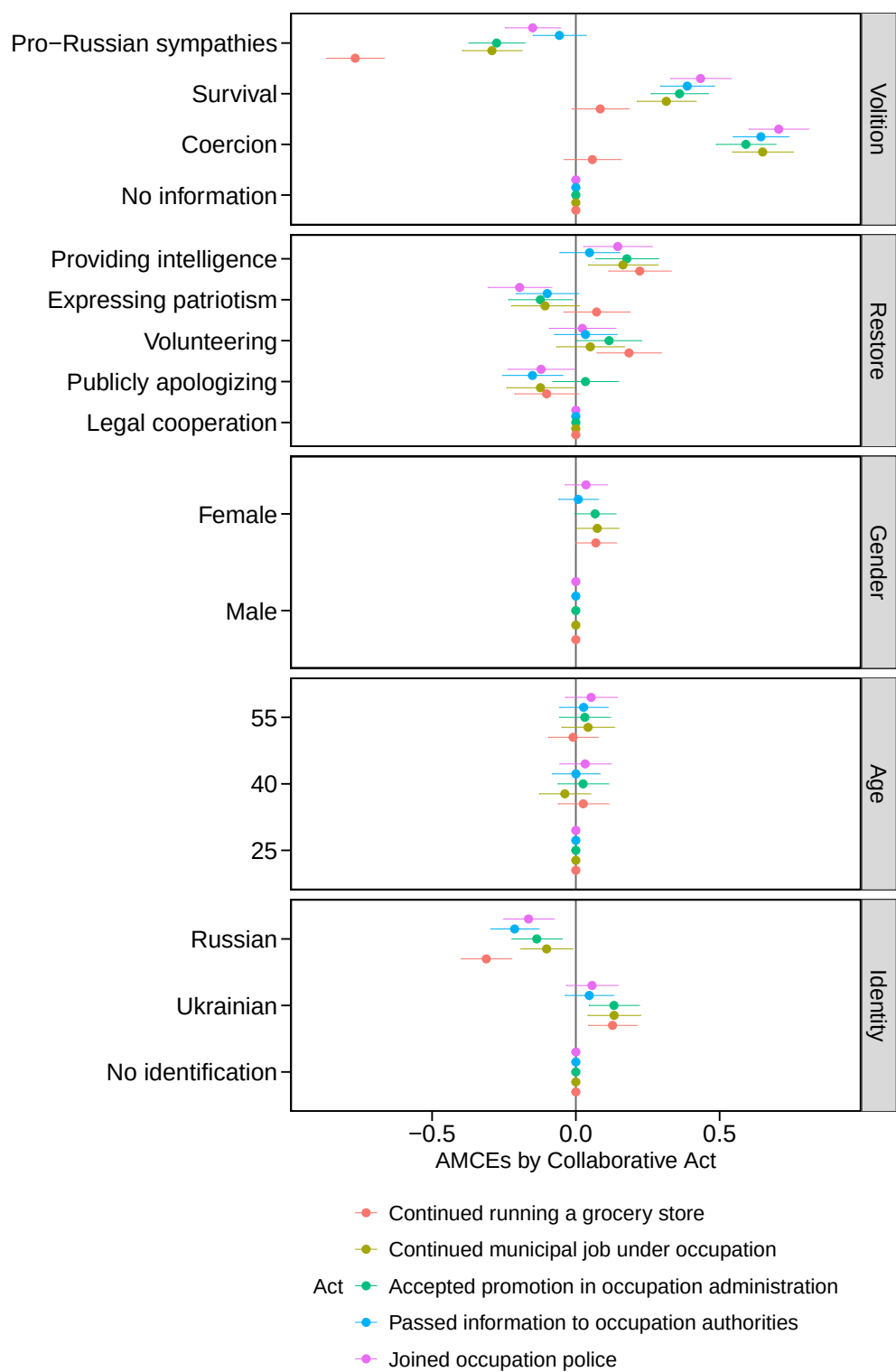


Figure E.11: Average Marginal Component Effects by Collaborative Act

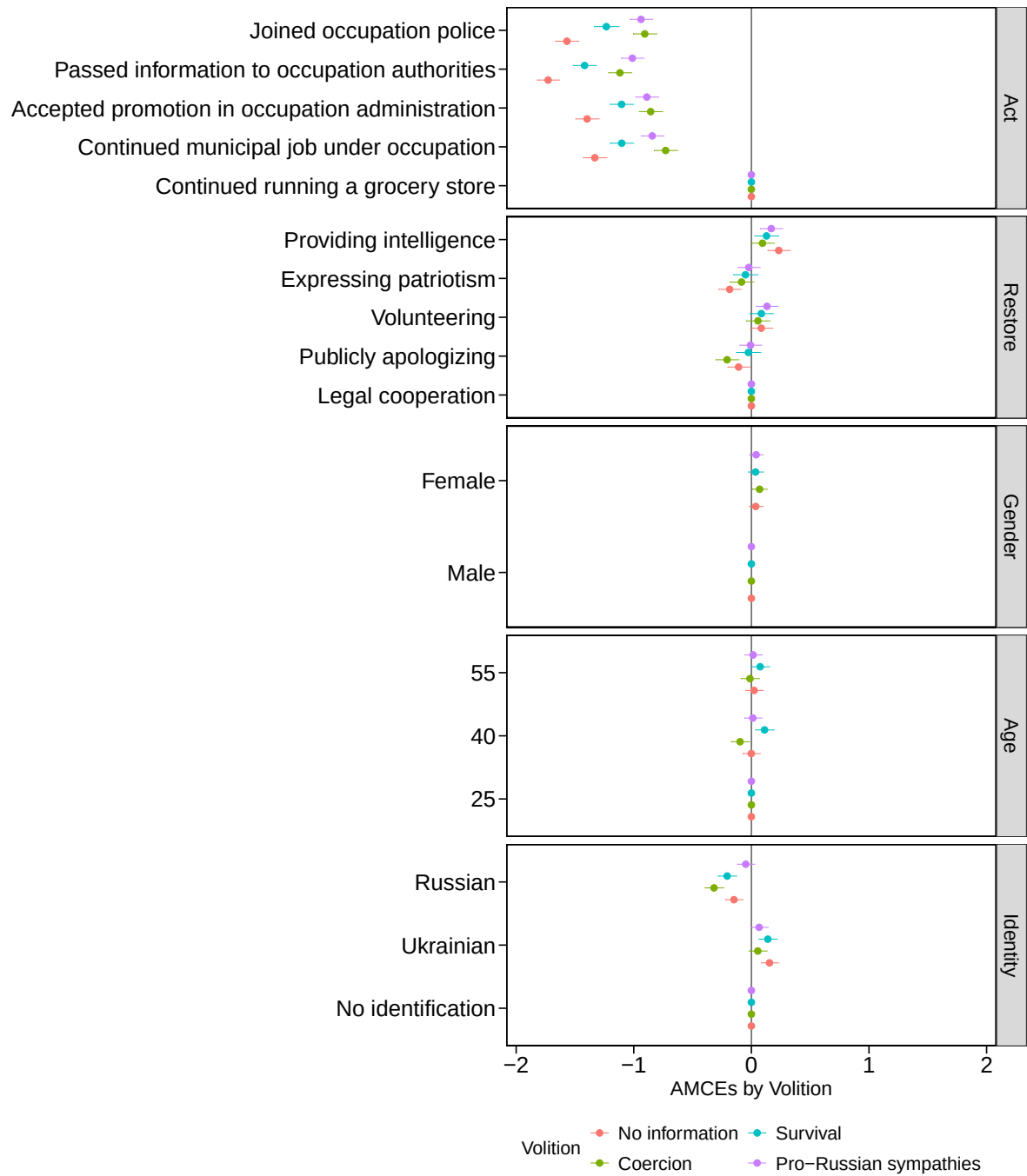


Figure E.12: Average Marginal Component Effects by Motivation for Collaboration

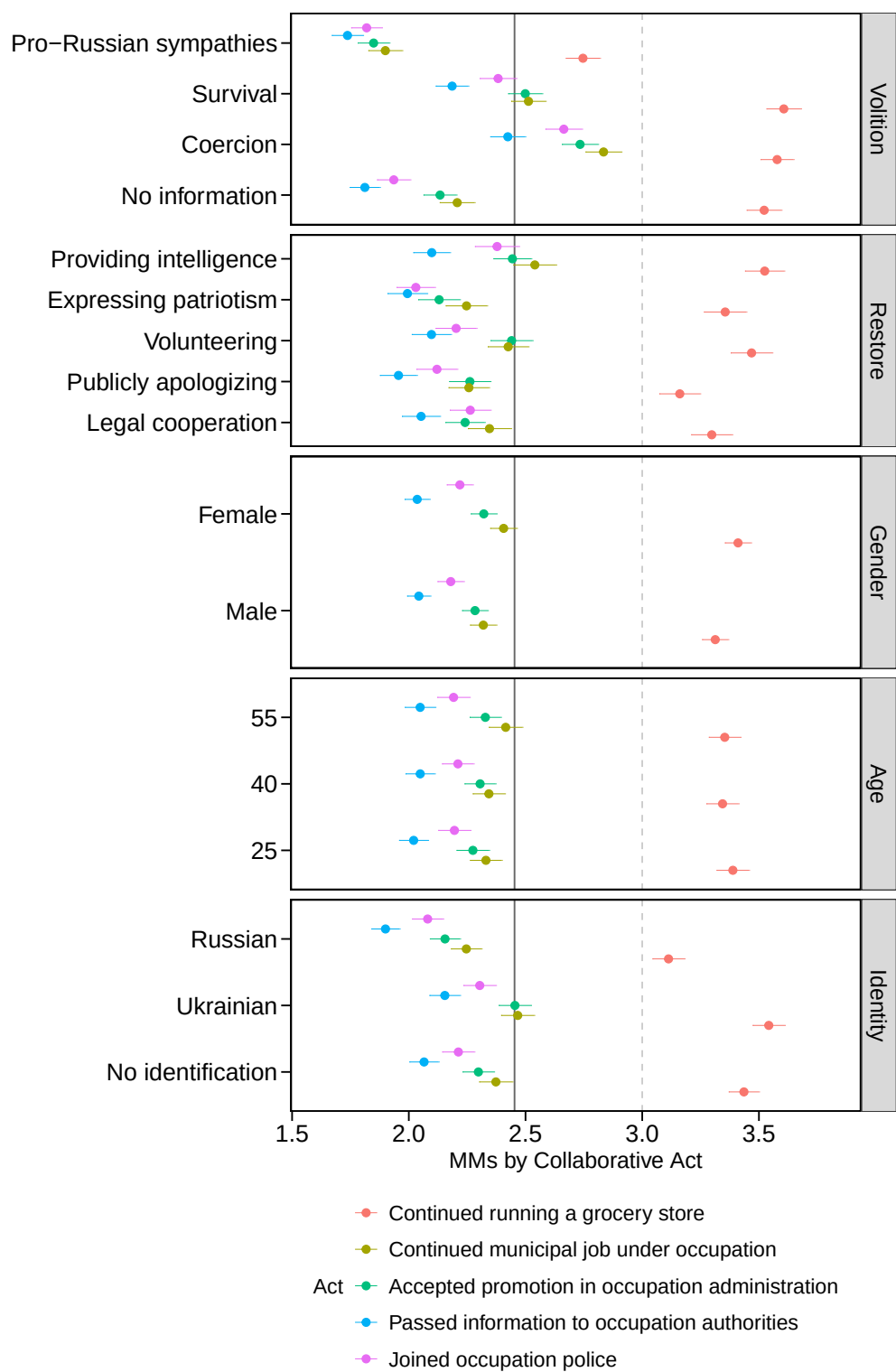


Figure E.13: Marginal Means by Collaborative Act

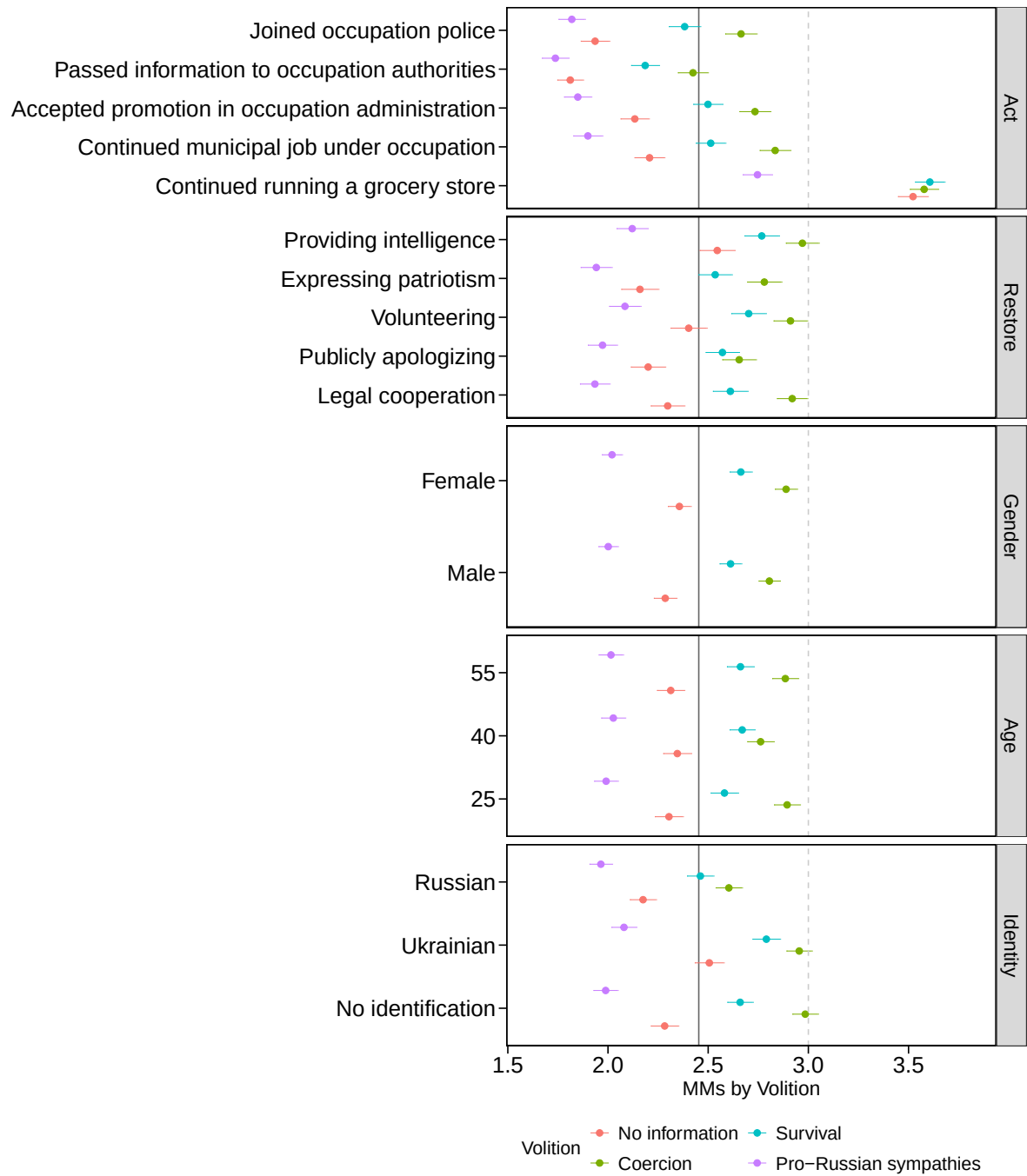


Figure E.14: Marginal Means by Motivation for Collaboration

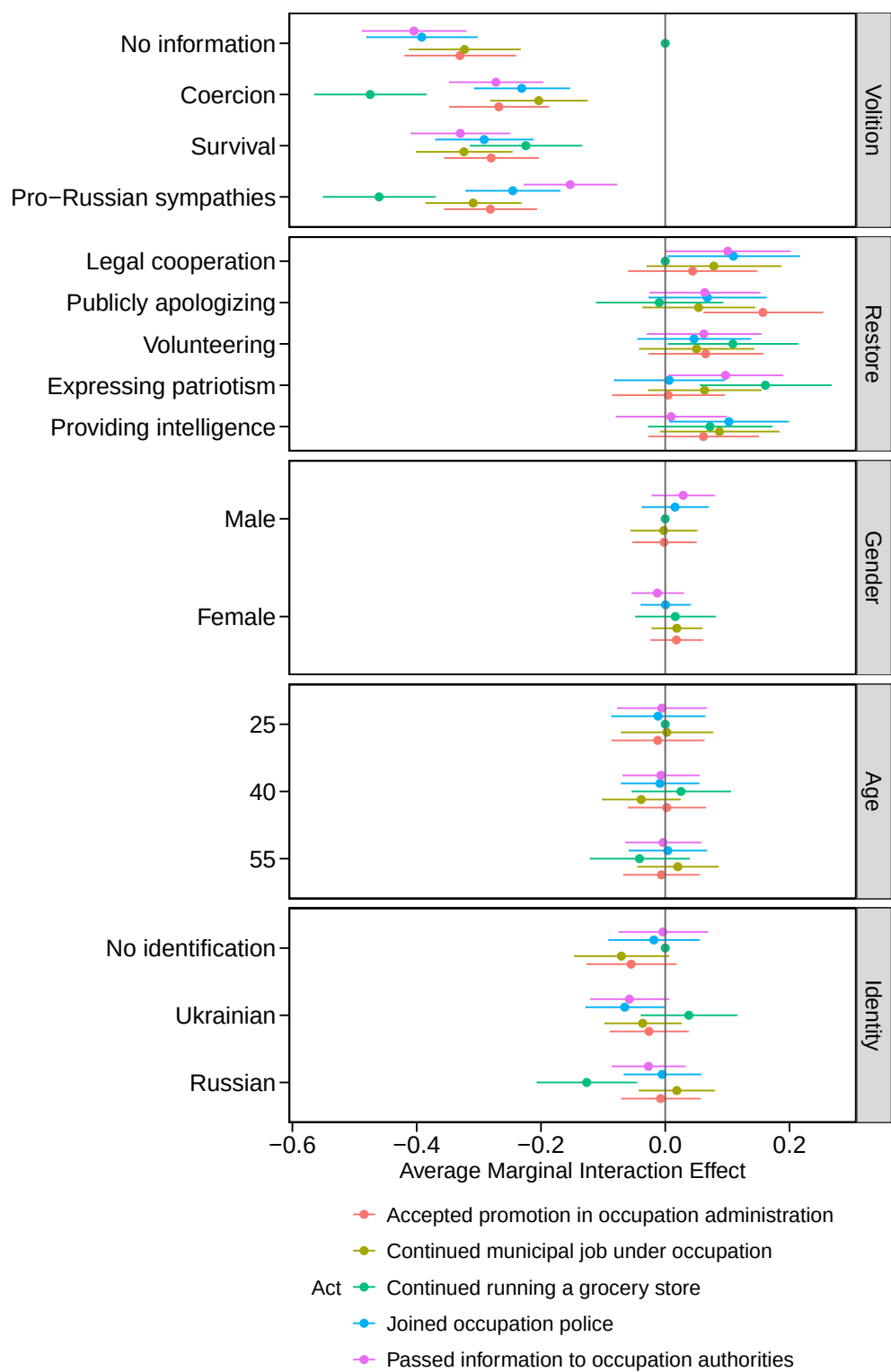


Figure E.15: Average Marginal Interaction Effects by Collaborative Act

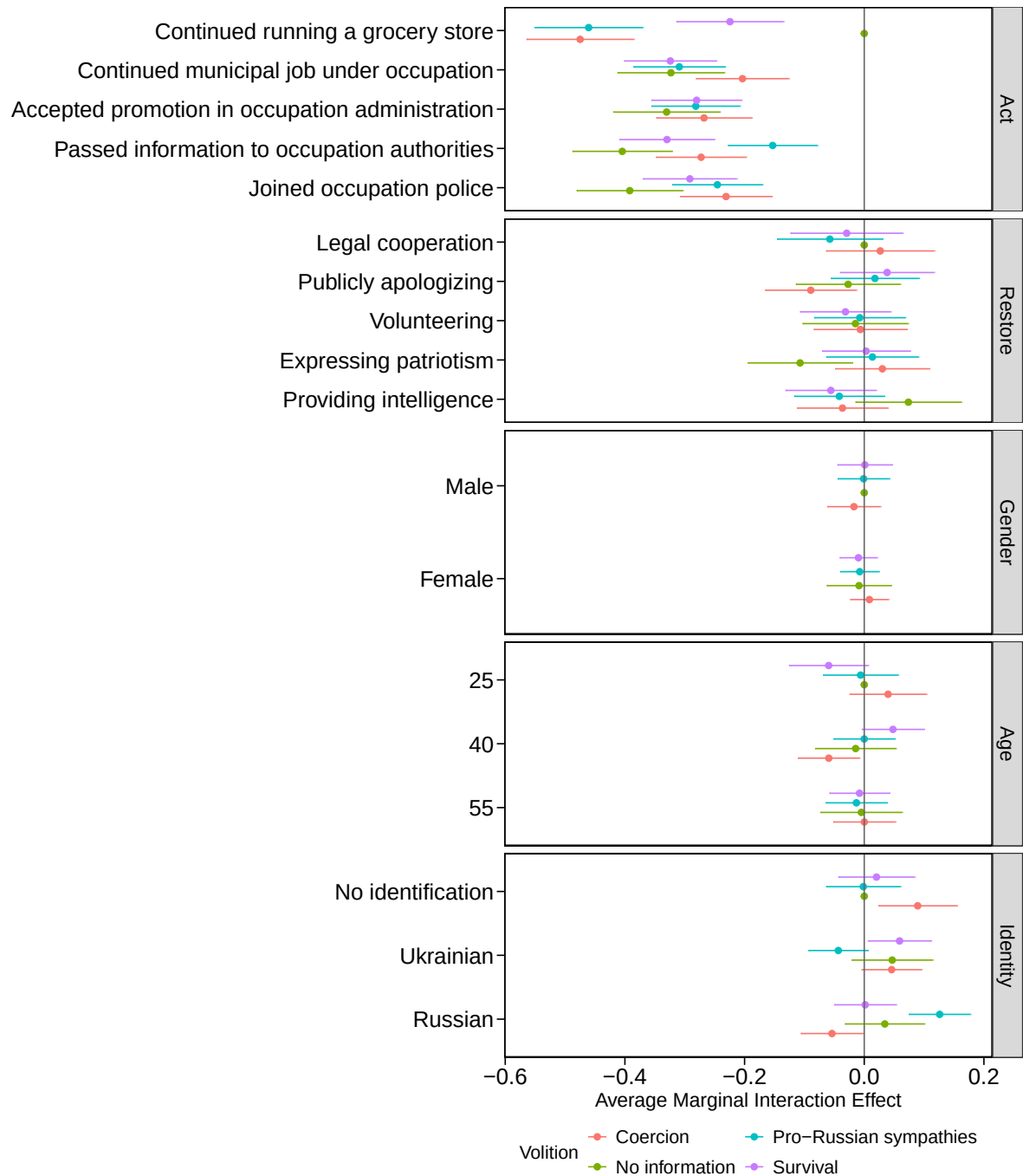


Figure E.16: Average Marginal Interaction Effects by Motivation of Collaboration

F References

- Acharya, Avidit, Matthew Blackwell, and Maya Sen. 2018. “Analyzing Causal Mechanisms in Survey Experiments.” *Political Analysis* 26(4): 357–78. doi:10.1017/pan.2018.19.
- Egami, Naoki, and Kosuke Imai. 2010. “Causal Interaction in Factorial Experiments: Application to Conjoint Analysis.” *Journal of the American Statistical Association* 114(526): 529–40. doi:10.1080/01621459.2018.1476246.
- Freitag, Markus, and Julian Schuessler. 2020. *cjpowR: A Priori Power Analyses for Conjoint Experiments*. <https://github.com/m-freitag/cjpowR>.
- Imai, Kosuke, Luke Keele, and Dustin Tingley. 2010. “Identification, Inference and Sensitivity Analysis for Causal Mediation Effects.” *Statistical Science* 25(1): 51–71. doi:10.1214/10-STS321.
- Kao, Kristen, and Mara R. Revkin. 2023. “Retribution or Reconciliation? Post-Conflict Attitudes Toward Enemy Collaborators.” *American Journal of Political Science* 67(2): 358–73. doi:10.1111/ajps.12673.