Youngism: Discrimination and Stereotypes

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Abstract

Preferences and beliefs about different age groups shape social, political, and economic outcomes. This paper provides strong evidence of "youngism", which refers to systematic bias in social preferences and unfavorable stereotypes against young adults. Among nationally representative samples from the United States and Czechia, we show that participants in both countries are substantially less pro-social in controlled allocation tasks towards young adults relative to other age groups. This preference bias is widespread, similar in size to discrimination against immigrants, and increases with age. Next, we show that young adults are perceived as more immoral, less helpful, less responsible, less hard-working, and enjoying easier lives than other age groups. Finally, we provide suggestive evidence that these unfavorable stereotypes about young adults feed into the preference bias.

Keywords: inter-generational conflict, social preferences, discrimination, stereotypes, youngism

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1. Introduction

Age is a salient social category in every society, and therefore may fundamentally underlie a variety of social behaviors. In this paper, we focus on youngism, which refers to discriminatory preference bias and unfavorable stereotypes against young adults. It is clear that if people care less about the well-being of younger adults, relative to their own or older age groups, this may contribute to economic inequalities, shape political outcomes, and create tensions within families and in a society as a whole. Given that most managers, voters, and politicians are middle-aged or older individuals, youngism can fuel youth unemployment and lead to policy outcomes that overlook the priorities of younger generations, thus potentially contributing to less policy action in areas such as climate change, investments in schools, tackling youth unemployment and housing needs, and the sustainability of pension systems. In popular media, concerns about the treatment of young people are widespread. *The Economist* (2016), for example, described the world's young as "an oppressed minority".[2] The imbalance in political outcomes and a lack of emphasis on the needs of younger generations is sometimes portrayed as "gerontocracy" or "silvercracy".

Despite growing concerns about inequalities and barriers faced by young people, we have limited empirical understanding of whether people harbor bias in social preferences against young adults and how they are perceived by others. While advances in past decades have led to vastly-improved knowledge about the prevalence of discriminatory preferences and the nature of stereotypes based on ethnicity, religion, gender, or being elderly (Fershtman and Gneezy 2001; Bernhard, Fischbacher, and Fehr 2006; Charness and Villeval 2009; Bartoš et al. 2016; Angerer et al. 2016; Kranton et al. 2020; Cappelen, Enke, and Tungodden 2023; Berge et al. 2020; Haushofer et al. 2023; Cettolin and Suetens 2019; Bohren, Imas, and Rosenberg 2019), measuring how people condition social preferences and beliefs based on the whole spectrum of adult age groups, including young adults, has so far remained off the radar screens of systematic empirical enquiry.

[2] Furthermore, many commentators in the US and across Europe worry that generations are currently "at war," and suggest that disagreements and animosity across generations are among the key sources of observed societal divisions. Such speculations in media are reflected in headlines such as "Generations at War" (*BBC* 2017), "Britain's Generational Divide Has Never Been Wider" (*The Economist* 2017), and "Time to Stop the Generation Wars" (*The Washington Post* 2017), and in recent books focusing on inter-generational relations, such as "Young v. Old: Generational Combat in the 21st Century" (MacManus and Turner 2018).

We aim to make progress by examining youngism in nationally representative samples from the United States and Czechia. We find the following main empirical patterns. Participants in both countries are substantially less pro-social in controlled money allocation tasks towards young adults relative to other age groups. This discriminatory bias in behavior is widespread, large in magnitude, and increases with the age of the decision-makers. In terms of stereotypes, young adults are perceived as more immoral, less responsible, and less hard-working, while enjoying greater well-being and a generally easier life than older age groups. Several pieces of evidence, both descriptive and causal, suggest that these unfavorable stereotypes about young adults feed into biases in social preferences. Finally, we find that senior adults do not face less pro-social behavior and are not perceived as less moral or less responsible than other age groups, but they are perceived as less hard-working, less competent, and unhealthier, i.e., the type of beliefs that may lead to statistical discrimination on the labor market.

This paper is based on data sets collected in the US (N=1,005) and Czechia (N=2,100), an EU country with GDP per capita at 90% of the EU average. The two countries differ in terms of a range of socio-economic characteristics, yet the widespread and systematic prevalence of youngism is remarkably similar. Both data sets include controlled experimental tasks designed to measure age-based biases in social preferences, coupled with a study of stereotypes in the US and with a randomized experiment in Czechia designed to manipulate views about hardship faced by young adults. To uncover the nature of age-based biases in social preferences, we implement an allocation task (Help or Harm Task). Each participant makes four allocation decisions: to young adults (18-24 yrs), younger middle-aged (25-44 yrs), older middle-aged (45-64), and seniors (65+). The experimental design allows us to measure two types of age-based biases in preferences: youngism, measured as the difference in allocations to young adults as compared to allocations to members of one's own age group, and oldism, measured as the difference in allocations to seniors as compared to allocations to members of one's own age group.[3] Further, to separate whether unfavorable treatment of young adults originates in a lack of altruism, a weaker form of bias, or in greater spite - a stronger form - subjects choose whether

[3] The term "ageism" refers to unfavourable preferences and stereotypes targeting various age groups, including senior citizens, young adults, adolescents, or children. In popular media and some scholarly work, though, the term "ageism" is sometimes used inter-changeably with "oldism" (North and Fiske 2012), i.e., unfavorable treatment of older people, perhaps because the research on age-based discrimination has almost exclusively focused on elders. To contrast, unfavourable attitudes and behaviors against youth and young adults have been coined "youngism". The popular use of this term is relatively broad and includes various practices and barriers faced by young people in their social and economic lives, such as restricted voting and political rights, discrimination in the workplace, etc. In this paper, we link the term to economic primitives and refer to youngism as a bias in social preferences and unfavorable beliefs against young adults.

to financially help an anonymous recipient by increasing their reward, or whether to financially harm that person by actively reducing it.

An advantage of using controlled allocation tasks as compared to working with measures of naturally-occurring behavior or support for policies targeting different age groups is that it allows researchers to more cleanly identify group biases in preferences. The differences in behavior affecting recipients of different ages are directly comparable, and the role of own-money maximizing considerations stemming from beliefs about future interactions (i.e., statistical discrimination) are eliminated by virtue of the experimental design. This makes it easier to link behavior to economic primitives and to make inferences about group biases in social preferences. Further, to boost confidence in the relevance of our measures, we validate the social preference measures and show that they are strongly and intuitively correlated with stated policy preferences – higher allocations in the controlled tasks are strongly positively related to greater support for governmental policies aimed to help corresponding age groups.

We find that, in both countries, people's preferences are systematically biased against young adults, while there is no such bias in social preferences against seniors (65+). Overall, allocations systematically increase with age of a recipient, with young adults (18-24 yrs) receiving the lowest amounts. This is because younger recipients receive substantially lower amounts than recipients in the same age group as the decision-maker, while older recipients receive, on average, a similar amount as do members of the decision-maker's age group. Thus, the bias in preferences against young adults is not an outcome of general in-group favoritism towards individuals of similar age as the decision-maker.

The bias in social behavior against young adults is remarkably robust. It holds across two countries, a variety of socio-economic sub-groups within each country, across two rounds of data collection in Czechia, and over a three-year period between the data collections in the two countries. Furthermore, in Czechia, we implemented additional allocation tasks, in order to benchmark the size of discrimination. The estimated magnitude of bias against young adults is similar in size to discrimination against immigrants and foreigners. Finally, we document similar patterns when we focus on relatively younger and older recipients, instead of absolute age categories.

In both countries, unfavorable treatment of young adults is most severe among decision-makers who are seniors. The estimated bias in allocations against young adults by seniors is at least twice as large as the bias observed among middle-aged decision-makers. We further show that reduced allocations to young recipients are driven not only by a lower degree of altruism,

but also by an increased desire to actively cause them financial harm. Among seniors, the prevalence of destructive behavior when the recipient is another senior is only 3% in the US and 4% in Czechia, but it increases to 25% in the US and to 23% in Czechia when the recipient is a young adult.

Next, we find a host of negative stereotypes about young adults. To study this issue, we elicit a range of self-reported measures of stereotypes about different age groups among the US respondents. We used a comprehensive list containing 13 stereotype measures spanning morality, work attitude, and well-being domains. We find a clear pattern. Young adults are perceived as less moral, less friendly, less prone to help others, less respectful, less responsible, less hardworking, and less competent, relative to middle-aged and senior respondents' own age group. In addition, they are perceived as having an easier life and generally greater well-being. These stereotypes about young adults are robust across gender, age groups, income groups, education levels, and political views.

Several pieces of evidence suggest that negative stereotypes about young adults contribute to lower pro-sociality towards this age group. In the US sample, we provide descriptive evidence to show that perceptions of lower morality, worse work-attitudes, and greater well-being are all tightly linked with a lower willingness to act pro-socially towards recipients from a given age group in the allocation task. In other words, young adults are associated with those characteristics that are linked with people's lower willingness to give. These robust correlations can reflect the effects of negative stereotypes on pro-sociality, but they can also be due to unfavorable preferences motivating people to form unfavorable stereotypes.

To probe this association further, we conduct an experiment that tests a causal link between one specific stereotype about young adults and social behavior. We focus on the perception of 'having an easy life,' because we could take advantage of suitable statistical data we collected that allow us to reliably manipulate this belief. Specifically, in the Czech sample, we test whether correcting a misperception about the extent of hardship faced by young adults, measured by the prevalence of symptoms of anxiety and depression, increases pro-social behavior towards this group. Symptoms of anxiety and depression are easy-to-understand signals of hardship. Yet, in contrast to physical health and economic conditions, symptoms of anxiety and depression are relatively difficult for other persons to observe in real life, and thus these types of hardship are prone to misperceptions. In a large supplementary survey, we first show that people heavily underestimate the prevalence of anxiety and depression suffered by

young adults. As the next step, we find that exogenous provision of accurate statistical facts about the prevalence of symptoms of depression and anxiety across generations increases allocations in the experimental task towards young adults. The effect holds both shortly after provision of the information, and in a follow-up conducted three weeks after the information treatment. These results suggest that beliefs about young adults having disproportionately easy lives is one of the causal factors that contributes to lower altruism towards this group.

Related literature. This paper contributes to several bodies of work. First, it is related to experiments that use controlled incentivized tasks to study the existence and malleability of discriminatory preferences towards different, real-life social groups. One-shot, anonymous allocation tasks have been employed to cleanly uncover biases in social preferences based on ethnicity (Fershtman and Gneezy 2001; Bernhard, Fischbacher, and Fehr 2006; Bauer et al. 2018; Berge et al. 2020; Cettolin and Suetens 2019; Haushofer et al. 2023), religion (Le Rossignol, Lowes, and Nunn 2023; Bauer, Chytilova, and Ochieng 2024), political views (Kranton et al. 2017, 2020), and the intensity of social ties (Goette, Huffman, and Meier 2006; Fehr, Bernhard, and Rockenbach 2008; Gangadharan et al. 2019). Economic experiments focusing on how people condition their social behavior based on the age of a recipient are scarce and rely on relatively small samples. Charness and Villeval (2009) conduct an inter-generational experiment among 174 subjects, with half being adults under 30 and the other half composed of seniors over 50, and measure stereotypes about seniors and how cooperation rates are affected by age composition in strategic environments. Recent work in social psychology employs non-behavioral measures and documents unfavorable attitudes towards young adults in the US, using survey questions on perceived negative traits or thermometer survey questions (Farkas et al. 2007; Brown 2013; Francioli and North 2021). Our paper contributes by (i) providing the first experimental evidence of bias against young adults using incentivized measures of social preferences, (ii) establishing the robustness of the main pattern across two different countries and a range of socio-economic groups, (iii) documenting that the preference bias is closely tied to negative stereotypes about young adults, namely, their perceived lack of morality, poor work attitudes, and the perception that they have easy lives.

Our paper relates to growing literature that explores the idea that social preferences and group boundaries shape policy views and political conflicts (Almas, Cappelen, and Tungodden 2020; Enke 2020; Bonomi, Gennaioli, and Tabellini 2021; Guriev and Papaioannou 2022; Fehr, Epper, and Senn 2023; Charness and Fehr 2024). Our finding that people are generally less pro-

social towards younger people and that this feature of social preferences is linked with lower support for governmental policies aimed to help young adults may help to explain why many voters and politicians seem to place relatively low priority on addressing policy issues that concern younger generations. While the standard political economy explanations highlight the aging profile of voters and the short-term time horizons of politicians, our findings suggest that this phenomenon may also have an underpinning in social preferences.

Our findings speak to the important question about sources of discrimination towards older people in hiring decisions. Numerous correspondence experiments in the US and Europe have found systematically lower callback rates of older job applicants as compared to middle-aged applicants (Neumark, Burn, and Button 2020; Lippens, Vermeiren, and Baert 2023). While correspondence experiments provide credible evidence of the existence of discrimination, they typically struggle to uncover the source – whether the observed discrimination is due to preferences or due to beliefs about productivity (Bertrand and Duflo 2017). We identify several unfavorable views about senior adults that are particularly relevant for beliefs about productivity and may contribute to statistical discrimination in hiring decisions: that older people are perceived as less competent, less hard-working, and less healthy than middle-aged adults, in line with earlier work (Fiske et al. 2002; Cuddy, Fiske, and Glick 2008). Interestingly, we do not find bias in social preferences against older adults. Thus, taken at face value, our findings indicate that discrimination faced by older people on the labor market originates in beliefs about their competence, rather than in preference-based discrimination. Less is known about hiring discrimination against young adults because, to best of our knowledge, so far there is only one correspondence experiment that directly contrasts discrimination against both older adult and young adult job applicants, relative to younger middle-aged applicants. Farber et al. (2019) show that, in the US, not only older applicants but also young adults receive lower callback rates, relative to younger middle-aged applicants. Our findings suggest that both discriminatory preferences and unfavorable beliefs about the work attitudes of young adults could play a role in explaining their unfavorable treatment.

The remainder of this paper proceeds as follows. In Section 2, we describe the experimental design and document a systematic bias in social preferences against young adults. In Section 3, we provide evidence of negative stereotypes about young adults. In Section 4, we present descriptive and causal evidence of the link between stereotypes and social behavior towards young adults. Section 5 offers concluding remarks.

2. Bias in social preferences against young adults

2.1. Experimental design

The study is based on two online experiments designed to uncover biases in social preferences based on age. Experiment 1 was conducted in Czechia in 2020 and Experiment 2 in the US in 2023, among samples designed to be representative of the populations of each country. In both experiments, we implement the same allocation task to measure pro-social and anti-social preferences towards different age groups. In the US, we additionally measure stereotypes about the different age groups across various domains (see Section 3), and document how they are related to choices in the allocation task (see Section 4). In Czechia, we implemented an information provision experiment to test the causal role of stereotypes in one specific domain (see Section 4).

Sample. Experiment 1 was conducted among an online sample of adults in Czechia (N=2,027).[4] We took advantage of the infrastructure of two data-collection agencies (NMS Market Research and PAQ Research), using the largest online panel in the country (the Czech National Panel). By design, the sample is broadly representative of the adult Czech population in terms of age, sex, education, employment status, municipality size, and regional distribution (Table A1). In terms of age, which is of special interest for this study, the sample includes adults aged 18-92, with a mean age equal to 48.2 (std. dev = 16.6). In the analyses, we divide the sample into four sub-samples by age: 18-24, 25-44, 45-64, and 65+, to mimic the age categories of the recipients in the allocation tasks. Each group is relatively sizable, though the youngest group is somewhat smaller because it spans the shortest age range. The number of observations is 162 for young adults 18-24, 736 for 25-44, 640 for 45-64, and 489 for seniors 65+. We elicited the experimental tasks twice among the same subjects—in Wave 1 in October 2020 and in Wave 2 three weeks later (November 2020). We conducted an information provision experiment—described in Section 4—within Experiment 1. When documenting youngism in this section, we analyze responses for participants in the randomly allocated CONTROL condition (n=992).

Experiment 2 was conducted in November 2023 among a US sample (N=1,004), recruited on Prolific to be representative of the adult US population in terms of sex, age, and ethnicity. Sample characteristics are presented in Table A2. Participants are 18-86 years old,

[4] According to Special Eurobarometer 493 "Discrimination in the European Union", perceived age-based discrimination ("discrimination on the basis of being perceived as too old or too young") in Czechia is close to the EU28 average—in Czechia, 40% of respondents perceive age-based discrimination as widespread and 56% as rare, compared to 40% and 54% in EU28.

with a mean age equal to 46.0 (std. dev. = 16.0). The number of observations by age group is 89 for young adults aged 18-24, 405 for those 25-44, 353 for 45-64 and 158 for seniors 65+.

Eliciting pro-social and anti-social preferences. To measure pro-social and anti-social preferences, we administered a series of allocation tasks that we label a Help or Harm task (HHT) (Bartoš et al. 2021). HHT combines features of the well-established Dictator and Joy of Destruction games (Abbink and Sadrieh 2009). The participants were asked to increase or decrease rewards to a set of people with different characteristics. The default allocation was CZK 100 in Czechia and USD 5 in the US.[5] Participants could keep the money at the default level (an active choice was required), increase the reward to any amount up to CZK 200 / USD 10, or reduce it to any amount above and including CZK 0 / USD 0, using a slider originally located in the middle of the scale (see Figure A1).

The advantage of implementing a salient reference point is that we can identify the prevalence of both pro-social and anti-social behavior. We denote behavior as pro-social when subjects choose to increase rewards above the default, revealing that a participant cares positively about the recipient. We refer to behavior as anti-social when subjects allocate less than the default, thus actively causing financial harm to the recipient. Such behavior cannot be explained by selfish motivations, because it does not imply any pecuniary benefit to the participants. Further, the instructions make it clear that the decision makers could not also be recipients, to avoid the potential role of indirect reciprocity. For simplicity and to economize on survey time, there were no pecuniary costs for the decision-makers when they were choosing whether to engage in pro-social or anti-social behavior; there were costs only in terms of effort.

Manipulating the age of a recipient. To identify whether a participant behaves differently towards recipients from different age groups, each participant made four decisions in HHT. Each choice affected a recipient in a different age group: a recipient aged 18-24, 25-44, 45-64, or 65+. The Online Appendix D, Sections I.3 (Czechia) and II.1 (US) present the specific wording of the task. The order of the four decisions was randomized at the individual level. The subjects knew that thirty participants would be randomly selected and that one of their choices would be implemented.[6]

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[5] Between 2020 and 2023, average quarterly exchange rates fluctuated between 21.3 and 24.6 CZK for 1 USD.

[6] In Experiment 2 (US), each participant made these four choices in HHT. In Experiment 1 (Czechia), each participant made 21 choices in HHT, of which one could have been payoff relevant. In addition to the four allocations to recipients of different ages, each participant made 17 decisions affecting recipients with various other characteristics (nationality, region of residence, political orientation, ethnicity, religion), allowing us to compare the magnitude of differential treatment based on age with other dimensions of group biases in social

We interpret differences in allocations as evidence of biases in social preferences, because recipients were completely passive and anonymous, and thus differences in allocations cannot be explained by beliefs about future back transfers (statistical discrimination). Further, given that our sample covers the whole age span of the adult population, we can measure two types of age-based biases in social preferences: youngism, measured as the difference in allocations to young adults (or more broadly to relatively younger individuals) as compared to those in one's own age group, and oldism, measured as the difference in allocations to seniors (or more broadly to relatively older individuals), as compared to those in one's own age group. Finally, because HHT allows us to distinguish pro-social and anti-social behavior, we can investigate whether differential treatment based on age reflects weaker pro-social preferences towards a given age group, or whether it reflects stronger anti-social preferences such as spite, a socially more dangerous type of preferences.

Validation of preference measures. Using data from Experiment 1, we find several reassuring patterns, suggesting that our preference measures are reliable and that subjects paid attention to their decisions. First, people make relatively consistent allocations across the two waves of experimental data collection. The correlations between Wave 1 and Wave 2 allocations are high, and the allocation patterns based on recipient age are very similar across waves, as we describe below (Figure A2). Second, in line with a host of studies documenting systematic links between experimental measures of social preferences and real-life social and political behavior (e.g., Enke, Rodríguez-Padilla, and Zimmermann 2022; Rustagi, Engel, and Kosfeld 2010; Almas, Cappelen, and Tungodden 2020), we find the choices in HHT to be intuitively linked to stated policy preferences. Participants who allocated greater amounts to recipients were more likely to state that they support governmental policies providing financial support to others. Next, when we explore the specificity of this relationship, we find that the positive links tend to be substantially larger when allocations in HHT and support for policies concern the same age group (coefficients on the diagonal of Table A3), than when allocations and support for policies target different age groups (coefficients away from the diagonal). For example, the correlation between allocations to recipients 18-24 y/o and stated support for financial subsidies for adults 18-24 y/o is 0.46, while the coefficient diminishes to 0.27 and 0.12 when we correlate it with support for policies providing financial assistance to middle-aged adults and seniors,

behavior, e.g. ethnic discrimination. It was randomly determined at the individual level whether the four decisions affecting recipients from different age groups were made before or after these 17 decisions.

respectively. Similarly, the correlation between allocations to seniors and support for financial help to seniors, the middle-aged, and young adults is 0.56, 0.26 and 0.17, respectively.[7]

2.2. Results: Preference bias against young adults

Main pattern. We find that participants in both Experiment 1 (Czechia) and Experiment 2 (US) condition their allocation decisions on the age of the recipients, and allocate less money to young adults (18-24 y/o) than to recipients from older age groups. In general, the average allocations increase with the age of the recipient (Panel A of Figures 1 and 2). In Czechia, on average, young adults receive CZK 113, lower middle-aged CZK 125, upper middle-aged CZK 135 and seniors CZK 146. In the US, the average allocations to recipients from these age groups are USD 6.8, 7.1, 7.3, and 7.9, respectively. All of the differences in allocations are highly statistically significant (Panels A of Figures 1 and 2) and by the nature of the within-subject design, they are also robust to controlling for observable characteristics or individual fixed effects (Columns 1 of Table 1 for the Czech sample and Table 2 for the US sample; robustness checks in Table A4). Despite somewhat higher average generosity in the US sample, the similarity of the age gradient across the two settings is remarkable.

Next, we show that this pattern arises because decision-makers systematically treat young adult recipients unfavorably, compared to recipients from their own or older age groups (Panels B - E of Figures 1 and 2, and Columns 2-5 of Tables 1 and 2). Participants who are 25+ years old allocate substantially less money to young adults than to recipients from their own group. The magnitude of this bias increases with age of the respondents and is largest for those 65+ years old. Decision-makers from the oldest age group allocate CZK 104 to young adults and CZK 157 to seniors in Czechia. In the US, the respective allocations are USD 6.3 and USD 8.6 (Panels E of Figures 1 and 2).

Further, we explore whether the observed pattern is an outcome of systematically unfavorable behavior towards the young or of general in-group favoritism of recipients from one's own age group. To test this, we analyze the social behavior of individuals who make

[7] We also see intuitive correlations when we study allocations in the Czech sample to other groups besides those based on age. The amount allocated to an immigrant is negatively correlated with voting for a right-wing political party with an anti-immigration agenda (-0.12, p-value < 0.001), voting 'leave' in a hypothetical EU exit referendum (-0.16, p-value < 0.001), supporting authoritarian rule (-0.07, p-value < 0.001), and is positively correlated with support for accepting Ukrainian refugees after the outbreak of the Russia-Ukraine war (0.15, p-value < 0.001). These correlations are close to zero and statistically insignificant if we use the amount allocated to a Czech-born person instead of the amount allocated to an immigrant. We also see a negative correlation between voting leave in a hypothetical EU exit referendum and the amount allocated to a person in a different EU country (-0.16, p < 0.001).

allocation decisions both to relatively younger and relatively older recipients, i.e., those in the two middle-aged groups (25-64 years old). In contrast to behavior towards the young, we do not detect any unfavorable treatment of senior individuals. In fact, in both countries, recipients over the age of 65 tend to be treated equally or even favorably compared to members of decision-makers' own age group (Figures 1 and 2, Tables 1 and 2). Thus, while we find strong evidence of youngism, we do not find any systematic evidence of oldism among the middle-aged decision-makers.[8]

The only age group that treats senior individuals less favorably than their own age group are young adults (Panels B in Figures 1 and 2 and Column 2 of Tables 1 and 2), but the bias against seniors by the youngest participants is much smaller in magnitude (three times for the Czech sample and two and half times for the US sample) than the bias in behavior exhibited by seniors when allocating money to young adults.

Severity of the bias. Several results show that the unfavorable treatment of young adults reflects a serious form of animosity because it is driven not only by less pro-social behavior, but also by a higher prevalence of anti-social behavior (Columns 6 and 8 of Tables 1 and 2). Specifically, among senior decision-makers in Czechia, only 4% decided to reduce the reward below the default allocation when the recipient was another senior, but 23% did so when the recipient was a young adult. In the US, the numbers are very similar – 3% and 25%, respectively. At the same time, the prevalence of pro-social behavior, i.e., allocating more than the default, is higher when the decisions impact another senior (74% in Czechia and 96% in US) than when they impact a young adult (28% in Czechia and 67% in US). The results also hold for most extreme cases of anti-social behavior (i.e., allocating zero) and pro-social behavior (i.e., allocating CZK 200 in Czechia and USD 10 in US), (Columns 7 and 9 of Tables 1 and 2). Figure A3, which plots the cumulative distribution functions of the money allocations towards recipients of different age groups, further illustrates that the unfavorable treatment of young adults is visible across the entire choice set.

[8] Another way to document that youngism is more prevalent than oldism is to take advantage of the within-subject design of the experiment and classify people into types: 1) "youngist" if they allocate less to young adults (but not to seniors) than their own age group; 2) "oldist" when they allocate less to seniors over 65 (but not to young adults) compared to their own age-group; 3) "youngist & oldist" if the allocations towards both young adults and seniors are lower compared to their own age-group; 4) "non-ageist" if they allocate the same amount to young adults, seniors and their own age group, and 5) "other". The estimated prevalence of these types in Czechia is 24% youngist, 5% oldist, 17% youngest & oldist, 33% non-ageist and 21% other (CONTROL condition in wave 1). In US, the estimated prevalence is 27% youngist, 8% oldist, 11% youngist & oldist, 39% non-ageist and 15% other.

Next, we take advantage of the fact that in the Czech sample we used the same experimental tasks to uncover biases in social preferences in multiple domains beyond age to gauge the relative magnitude of youngism compared to biases based on ethnicity, political views, locality, and nationality. Figure 3 documents that the bias against young adults is similar in magnitude to bias against immigrants or foreigners. It is somewhat smaller than the bias against the Roma minority, an ethnic group that faces severe discrimination in Czechia (Bartoš et al. 2016), and it is larger than the bias against people with different political views. Figure 3 also shows that youngism is not only aimed at a specific group of young adults, but at relatively younger individuals in general. Therefore, the results suggest that less favorable behavior by older respondents is not directed towards a specific age cohort but is based on relative age.

Robustness. We provide several robustness tests of the bias against young adults we observe. First, our estimates are robust to various sets of control variables, including a set of controls selected by a double-selection LASSO linear regression procedure (Table A4, Columns 1-4). Second, in the main analysis for the Czech sample, we pool the choices of participants from two waves of data collections, implemented three weeks apart. The bias in behavior against younger adults is very similar when their choices are analyzed separately in each wave (Table A4, Panel A, Columns 5 and 6).

Third, the use of a "within-subject" design, as compared to a "between-subject" design when eliciting behavior towards individuals with different group attributes, has the advantage of being able to identify bias in social preferences at the individual level, and boosts the number of observations, but it can potentially affect the size of the estimated differential treatment, if subjects realized the purpose of the study. In principle, social desirability biases could reduce the estimated size of the bias if some subjects choose to hide their true preferences, and experimenter demand effects may induce subjects towards greater differentiation in behavior. In Table A4 (Panel A, Column 7 for the Czech sample and in Panel B, Column 5 for the US sample), we show that the main pattern holds when we restrict the sample to only the very first decision made by each participant, effectively mimicking a "between-subject" design. This suggests that the use of a within-subject design does not drive the bias in social preferences we observe, although we obtain less precise estimates for the US sample. Fourth, the lower willingness to help the youngest generation is also present in participant's responses to survey questions about support for policies targeting different generations (Table A5, CONTROL mean).

Finally, we document stability of youngism during a period of dramatic health and social shock. The data collection in Czechia was implemented in the fall of 2020, during the Covid-19 pandemic. We find that the estimated bias against young adults is very similar in regions with below- and above-median incidence of Covid-19 cases (Panel A of Table A6). Furthermore, given that we replicate the presence of youngism in the US sample in 2023, the phenomenon cannot be driven exclusively by inter-generational tensions caused by the Covid-19 pandemic.

Heterogeneity. We further take advantage of the size and diversity of our sample, and explore possible heterogeneity across demographic characteristics of the participants. We find that unfavorable treatment of young adults is a robust behavioral regularity that holds across gender, a more fine-grained age-group classification, income groups, and education levels (Figure 4). For the US sample, we also document that the phenomenon is robust across political views, with somewhat larger point estimates for conservative participants. Having their own children or grandchildren aged 18-24 does not seem to reduce the bias (Figure A4). In contrast, with the exception of young adults aged 18-24 (and for the US sample also 25-34), participants from all other demographic categories treat senior participants equally or more favorably relative to their own age group (Figure A5).

To summarize, we find robust evidence of systematic bias in social preferences against young adults. While people seem to care to a similar degree about the well-being of their own age group and seniors above the age of 65 (and more generally about relatively older people), they seem to lack empathy, or even feel spite for young adults (and more generally for relatively younger people than themselves).

3. Stereotypes about young adults

In this section, we present additional results from Experiment 2 in the US, which documents that young adults face negative stereotypes in multiple domains.

3.1. Elicitation of views about different age groups

We compiled a list of 13 stereotypes. These can be divided into three categories, capturing perceptions (i) in a moral domain (moral – immoral; helping others – selfish; respectful –

disrespectful; friendly – unfriendly; having similar political views to the decision-maker – having different political views; liking their lifestyle – disliking their lifestyle), (ii) in a work attitudes domain (responsible – irresponsible; hard-working – lazy; competent – incompetent), and (iii) in a well-being domain (having an easy life - facing challenges; happy – sad; healthy/fit – unhealthy/frail; rich – poor). The list of stereotypes is not meant to be exhaustive and includes various stereotypes that we hypothesized could be relevant for monetary allocations in the Help or Harm task. Some overlap with the dimensions highlighted by the stereotype content models (Fiske et al. 2002, Franciolli and North 2021).

After making choices in the Help or Harm task, US respondents were asked about their general views about Americans from the four age groups (18-24, 25-44, 45-64, and 65+ years old). The order in which age groups were presented was randomized. The stereotypes were presented using 13 sliders in a fixed order (e.g., one slider had "moral" and "immoral" on opposite ends) and respondents stated their views on a 11-point scale, with any deviation from a neutral 5 representing a stereotype tilted towards one or the other option. We rescale the values so that the neutral option takes a value of 0 and the two extreme options -5 and 5, negative values indicating negative views and positive values indicating positive views. We also group results to indices in the three key domains of morality, work attitudes, and well-being. We construct the indices as arithmetic means over the rescaled values.[9] The Online Appendix D, Section II.4 presents the full wording of the task.

Despite the self-reported nature of stereotype questions, we find several intuitive patterns indicating that participants exerted effort to answer them (Figure A7). First, we document a negative age gradient of perceived health or fitness for participants across all age groups. Second, participants perceive that an average person from their own age group would be more likely than others to share their own political views, and that they would like the lifestyle of that person more than the lifestyles of people from other age groups (all p-values<0.001). Third, the stereotypes are intuitively correlated with monetary allocations in the Help or Harm task, as we discuss in the next section.

[9] Figure A6 shows that the individual components of the three indices are intuitively correlated within each group, although the correlations within the well-being group are generally weaker. Because we did not pre-register the construction of the indices, we also present the main results for each component separately.

3.2. Results: Stereotypes about different age groups

Figure 5 (Panel A) plots the relative stereotypes about young adults compared to how older decision-makers (25+ y/o) rate their own age group. It reveals that young adults are perceived as being more immoral and having worse work attitudes. Specifically, young adults are perceived as less moral in general, less likely to help others, less respectful, less friendly, less responsible, less hard-working, less competent, to have more distant political views and a more negatively-viewed lifestyle (all p-values < 0.001). On the well-being domain, young adults are perceived as having relatively easier lives, to be happier and healthier, but also poorer (all p-values < 0.01).[10]

In comparison, stereotypes about senior individuals are not as different from the stereotypes about decision-makers' own age group (Panel B of Figure 5). While differences in perceptions about young adults and decision-makers' own age group are larger than -1/+1 for most stereotypes, for seniors this is the case in only two dimensions – they are seen as less healthy and as having different political views (both p-values < 0.001). In contrast to stereotypes about young adults, which are overwhelmingly negative, some stereotypes about seniors are favorable; for example, they are perceived as being relatively more moral, respectful, and responsible (all p-values < 0.01).

Seniors in our study are also perceived as relatively less hard-working (p-value<0.001), less competent (p-value=0.002), and less healthy (p-value<0.001), findings that are consistent with commonly observed hiring discrimination against older job applicants in correspondence studies. The fact that we observe negative stereotypes towards both young adults and seniors in the domain of work attitudes that HR recruiters are likely to focus heavily on is also consistent with the inverse U-shape in call-backs documented in Farber et al. (2019). At the same time, our data show that unfavorable stereotypes about young adults span a much broader range of domains than solely work attitudes.

The negative stereotyping of young adults we observe is robust across gender, a more fine-grained age-group classification, income groups, education levels, and political views (Figure A8). In contrast, point estimates of the differences in perceptions of seniors and decision-makers' own age group are mostly centered around zero (Figure A9).

[10] Figure A7 presents the average ratings of all stereotype-domains for the four age groups, for the pooled sample (Panel A) and also by the age of the decision maker (Panels B-E).

In summary, we provide evidence that young adults are generally negatively stereotyped as being relatively more immoral and as having worse work attitudes. They are also perceived as enjoying greater well-being than other groups.

4. The link between stereotypes and social preferences

In this section, we explore whether negative stereotypes about young people are the foundation of less pro-social behavior towards them. Using data from the US data collection, we first show that the set of stereotypes about young adults, i.e., lower perceived morality, worse perceived work attitudes, and higher perceived well-being, are all positively correlated with lower rewards in the allocation task. To probe this association further, we next report results of an experiment embedded in the data collection in Czechia that tests a causal link between one specific stereotype about young adults and social behavior.

4.1 Descriptive evidence

Figure 6 shows that there are intuitive and statistically significant pairwise correlations between stereotypes and rewards in HHT. Higher rewards are associated with perceptions of the recipient being more moral, having positive work attitudes, and lower well-being. Linking these correlations to the stereotypes held against young adults, we observe that 12 out of 13 stereotypes held against them are correlated with lower rewards in HHT, and the remaining one is correlated positively (not being rich). In contrast, the evidence for stereotypes held against senior individuals is mixed - five are negatively and four are positively correlated with rewards, while the remaining four are not correlated due to the stereotypes not being perceived differently from participants' own age group. Also, the relative stereotypes held against seniors are generally of a smaller magnitude than those observed against young adults, as discussed in the previous section.

In summary, characteristics stereotypically associated with young adults closely match the set of characteristics associated with lower rewards in HHT. In the next section, we test whether the unfavorable stereotyping of young adults can causally contribute to the less favorable treatment of young adults documented in HHT.

4.2 Effects of perceptions about young adults having easy lives

We focus on one specific stereotype about young adults, particularly that they have easy lives. We have chosen this stereotype because in a supplementary survey we collected statistical data about the prevalence of anxiety and depression, and thus we can reliably manipulate beliefs about hardship faced by young adults in this domain.[11] While anxiety and depression are easy-to-understand signals of hardship, in contrast to physical health and economic conditions, they are relatively difficult to observe in real life. Thus, this type of hardship is prone to misperceptions. In fact, most people, as we document below, strongly misperceive the prevalence of anxiety and depression among young adults, which offers an opportunity to test the causal effect of this belief on prosocial behavior, by testing whether correcting these misperceptions leads to increased allocations in HHT.

Misperceptions about young adults having easy lives. We first document that most people underestimate the extent of hardship experienced by young adults in the mental health domain. In a supplementary longitudinal survey among a representative sample of adults (n=2,167) implemented in spring 2020 in Czechia (Bartoš, Cahlíková, Bauer, Chytilová, 2020), we find that 36% of young adults aged 18-24 have experienced symptoms of at least moderate depression or anxiety, significantly more than any other age group.[12] This result is surprising to the respondents: when we elicited beliefs within the same supplementary survey, 95% of the respondents underestimated the prevalence of depression and anxiety symptoms among young adults by 25 percentage points on average. In contrast, their estimates of the prevalence among the average population were relatively accurate. More information about the design and the results of the supplementary longitudinal survey is available in Online Appendix B.

Design of the information provision experiment. The information-provision experiment was conducted within Experiment 1 (Czechia, October-November 2020). The participants were randomly allocated to either the HARDSHIP (n=1,035) or the CONTROL (n=992) condition in Wave 1. In the HARDSHIP condition, they were given actual information about the prevalence of symptoms of depression and anxiety among different age groups of the Czech

[11] An additional result from Experiment 2 in the US documents that this is indeed an important domain to focus on. In a prompted question, we asked participants to choose up to three of the most important reasons for their decision in HHT. The first most important reason that justified a decision to transfer less money to a young adult than to an individual from one's own age group was that they have easy lives (16%).

[12] The prevalence of depression and anxiety was measured using a set of questions selected from batteries of questions developed by psychologists that are predictive of a professional diagnosis of depression (PHQ, Kroenke and Spitzer 2002) and/or anxiety (GAD, Spitzer et al. 2006).

adult population in a short description accompanied by graphically represented statistical facts, based on measures from the supplementary longitudinal survey. In the CONTROL condition, participants did not receive any information about the survey. The rest of the survey was identical for the HARDSHIP and the CONTROL conditions. We do not observe systematic differences across HARDSHIP and CONTROL conditions in terms of observable characteristics and attrition between Waves 1 and 2. Our main goal is to estimate whether the HARDSHIP condition affected social preferences, especially towards young adults, as measured in HHT and support for governmental policies focusing on young adults, the middle-aged, and seniors. The effects are estimated in the short-run (on the day of the intervention) and three weeks later. More details about the design and outcome variables are available in Online Appendix C. The full wording of the experimental protocol is available in the Online Appendix D.

Results. We find that the HARDSHIP condition robustly increases allocations to young adults, and the effect is lasting (Table 3, Columns 1-2). The HARDSHIP condition increases allocations by CZK 6.0 in Wave 1 (p-value = 0.017) and by CZK 6.1 when measured with a three-week delay (p-value = 0.013). The point estimates are robust to adjusting p-values for multiple hypothesis testing, to using various regression specifications, with different sets of control variables, and to using a set of variables selected using a two-stage LASSO procedure. The treatment effects are quite similar across gender, income, age of the respondent, and whether the respondent him/herself had experienced symptoms of depression and anxiety. The effects on behavior are somewhat larger for decision-makers with a university degree than for those with a lower education level. We also find positive effects on support for policies targeting young adults, but only immediately after the information intervention in Wave 1 (Table A5). Further, we find that the effects of the HARDSHIP condition on HHT allocations towards older recipients are also positive, but the point estimates generally decrease with the age of the recipient. In terms of support for policies helping middle-aged individuals and seniors, we do not detect any meaningful effects. Online Appendix C provides supplementary figures and tables documenting the effects of the information provision experiment and robustness tests mentioned above, and several additional results suggesting that priming and experimenter demand are unlikely to explain our findings.

In summary, providing statistical facts about the actual prevalence of hardship, in terms of anxiety and depression, that young people face leads to increased rewards in the allocation task and temporarily increases stated support for policies aimed at this age group. This supports

the interpretation that stereotypes about the lives of young adults causally contribute to bias in social preferences towards this group, as documented above.

5. Conclusions

Motivated by concerns about inter-generational conflicts, we explore how people from different generations are treated and viewed by others. We implemented consequential allocation tasks designed to identify age-based biases among two large, nationally representative online samples in the US and the EU (Czechia). The findings of this paper paint a bleak picture about the nature of inter-generational social preferences in the settings we study. We found strong, consistent evidence of "youngism", which refers to systematic bias in social preferences and unfavorable stereotypes against young adults.

We find that people allocate substantially less money in controlled allocation tasks to young adults than to those in their own or older age groups. These effects are remarkably general. The unfavorable treatment of young adults is very similar across the two countries, it is temporally stable, holds across various socio-economic sub-groups within each country, and it is particularly severe when the decision-makers are seniors. The estimated magnitude of the bias is large. The reduction in pro-sociality is larger than it is against people with different political views, and it is similar in size to discrimination against immigrants and foreigners. Next, we examined how different generations are viewed. Older generations associate young adults with negative traits (lower morality, lower willingness to help, lower responsibility, lower competence, and lower willingness to work hard), while they also perceive them as having easier lives and greater well-being, relative to older age groups. Finally, we show several pieces of descriptive and causal evidence suggesting that these perceptions are potentially important foundations of the unfavorable behavior towards young people that we documented.

The nature of inter-generational social preferences identified in this paper may help to explain why many politicians in a number of countries seem to place relatively low priority on addressing policy issues that concern younger generations. While standard explanations highlight the aging profile of voters and the short-term time horizons of politicians, our findings suggest a new explanation, namely that this phenomenon may have a social-preference-based underpinning. Political competition in a population with a bias against young adults is predicted to favor political parties that focus on programs accommodating the preferences of relatively older voters, at the expense of parties that focus more on the priorities of younger voters.

Further, to the extent that political leaders are aware that most voters care more about the welfare of their own and relatively older generations, this may reduce their incentives to prioritize policies that focus on a more distant future.

Given the potentially far-reaching implications for political economy, intergenerational solidarity, and labor market outcomes, and the fact that age is a salient social category in every society, we hope the sharp evidence of systematic bias in social preferences against young adults documented in this paper will inspire further research that would study how general this phenomenon is across different societies, and how it can most effectively be reduced. One promising direction is to consider policies that can tackle different types of inaccurate stereotypes about young adults, and test how they affect inter-generational preferences. Our paper shows that correcting inaccurate beliefs about young people's lives can partially reduce the preference bias, but this should be seen only as a first step. A perception of moral decline over generations (Mastroianni and Gilbert 2023) is another plausible source of inter-generational antagonism and would be consistent with descriptive patterns observed in our data. Similarly, from ancient times, psychologists and philosophers have debated negative public views of younger generations (Freeman 1908), characterizing young adults as selfish, lacking respect for authority and the elderly, and strongly preferring leisure to work, though recent empirical studies often find little factual basis for such stereotypes (Trzesniewski and Donnellan 2010). Building fuller empirical understanding about the sources of youngism is, in our view, an important and pressing area of future research.

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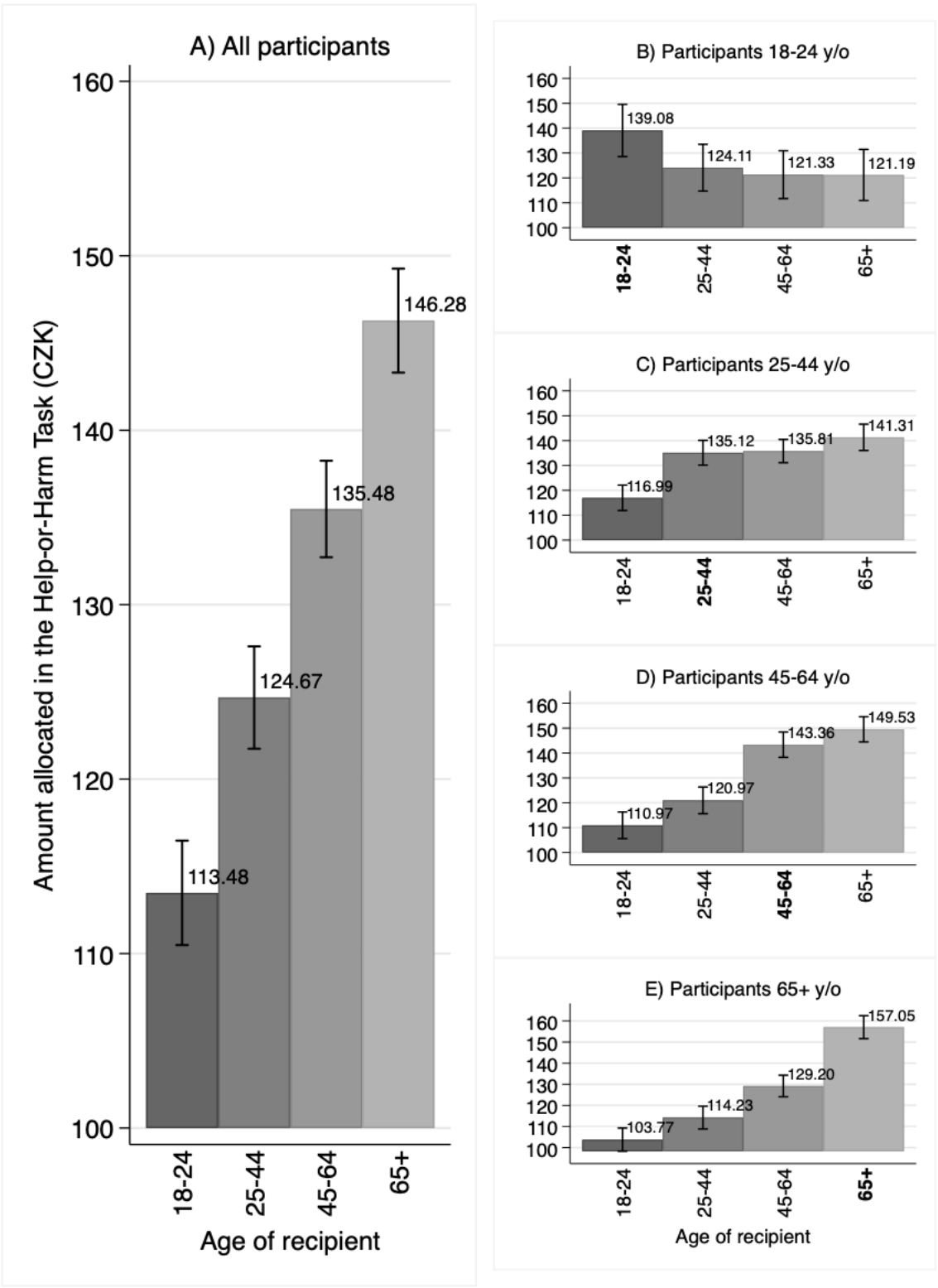
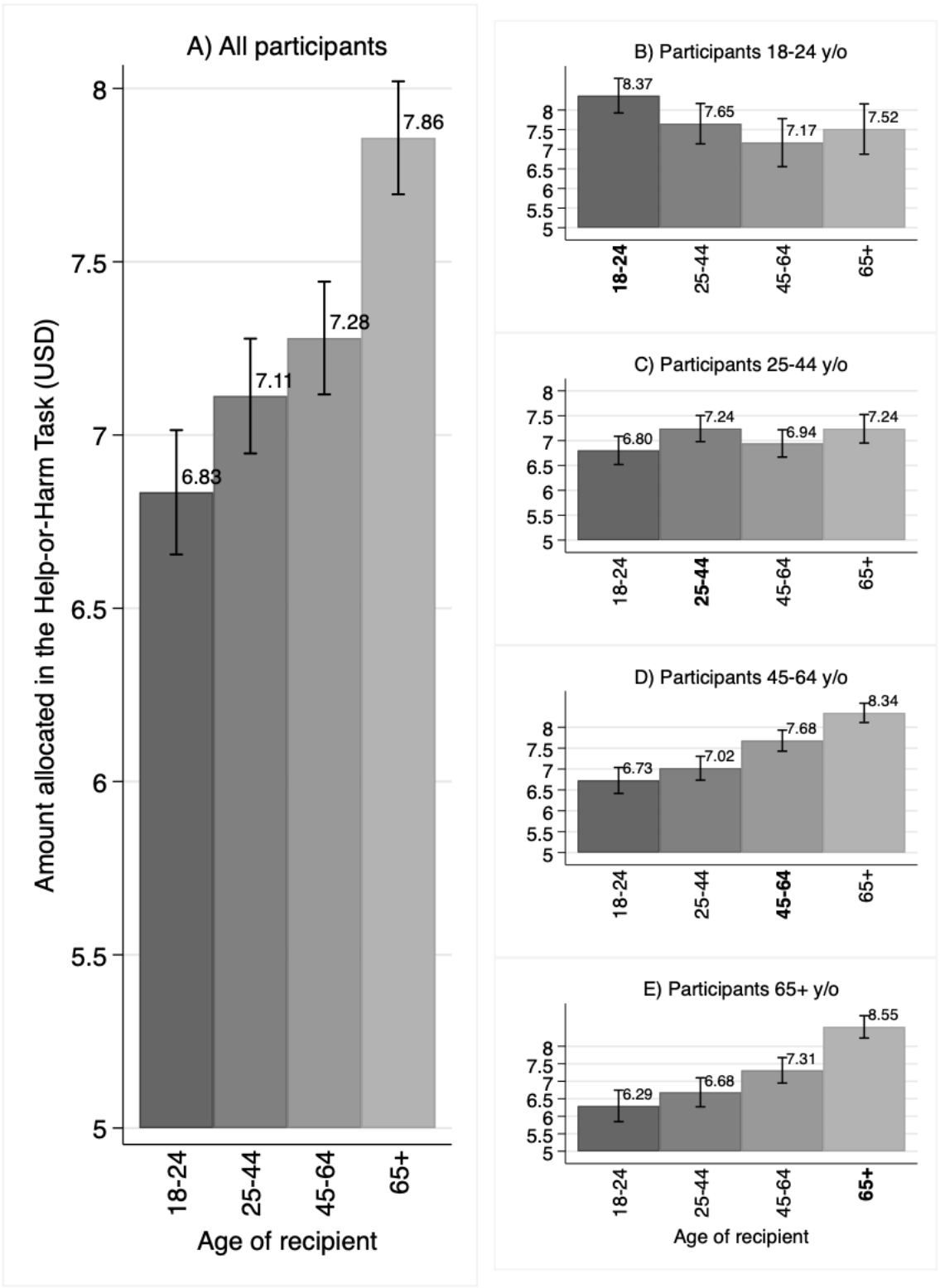
FIGURE 1. PREFERENCE BIAS AGAINST YOUNG ADULTS: ALLOCATIONS IN THE HELP OR HARM TASK TO RECIPIENTS IN DIFFERENT AGE GROUPS (EXPERIMENT 1: CZECHIA)



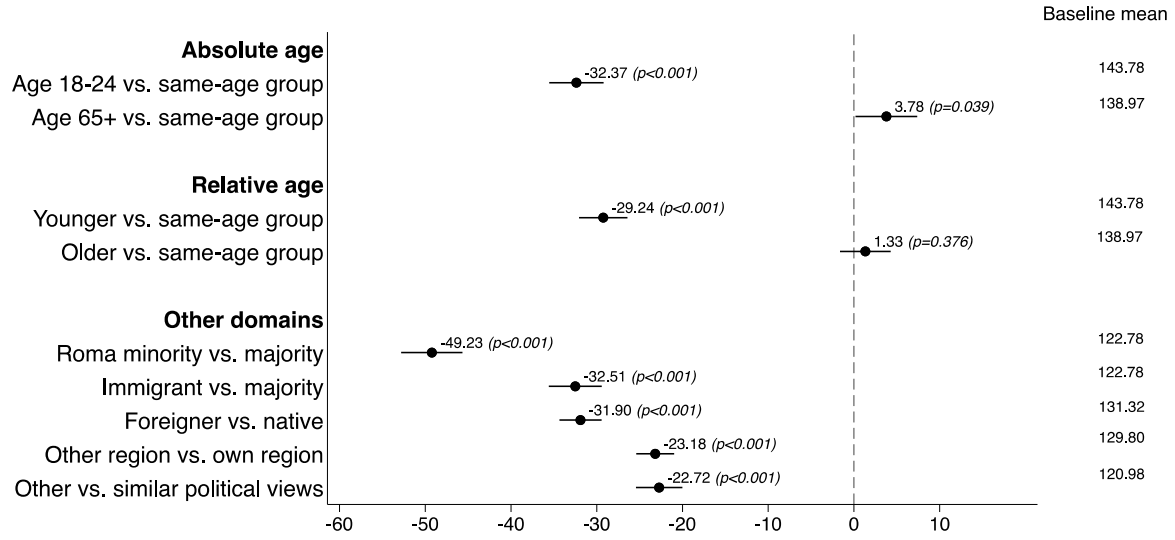
Notes: Mean allocations in the Help or Harm task by the age group of the recipient in Experiment 1. CONTROL condition respondent data for Wave 1 and 2 (three-week delay) are used. Results by wave are similar and presented in Figure A2. Panel A reports data for all respondents, Panels B-E report data for subsamples of respondents in a specific age-range. The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level.

FIGURE 2. PREFERENCE BIAS AGAINST YOUNG ADULTS: ALLOCATIONS IN THE HELP OR HARM TASK TO RECIPIENTS IN DIFFERENT AGE GROUPS (EXPERIMENT 2: US)



Notes: Mean allocations in the Help or Harm task by the age group of the recipient in Experiment 2. Panel A reports data for all respondents, Panels B-E report data for subsamples of respondents in a specific age-range. The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level.

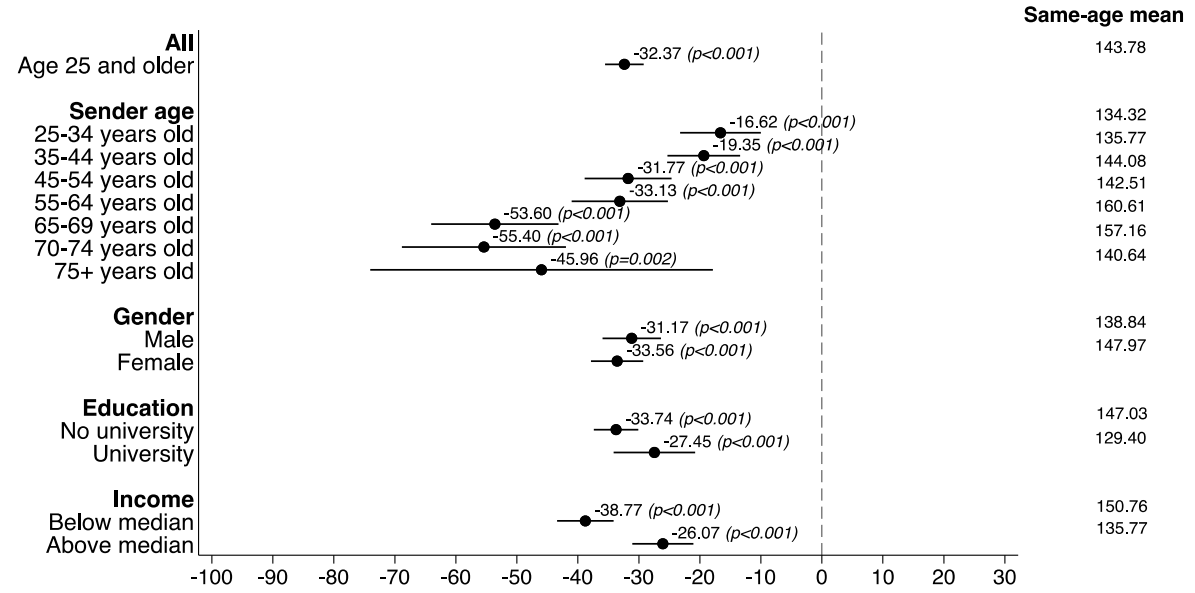
FIGURE 3. RELATIVE SIZE OF DISCRIMINATORY PREFERENCES ACROSS DOMAINS (EXPERIMENT 1: CZECHIA)



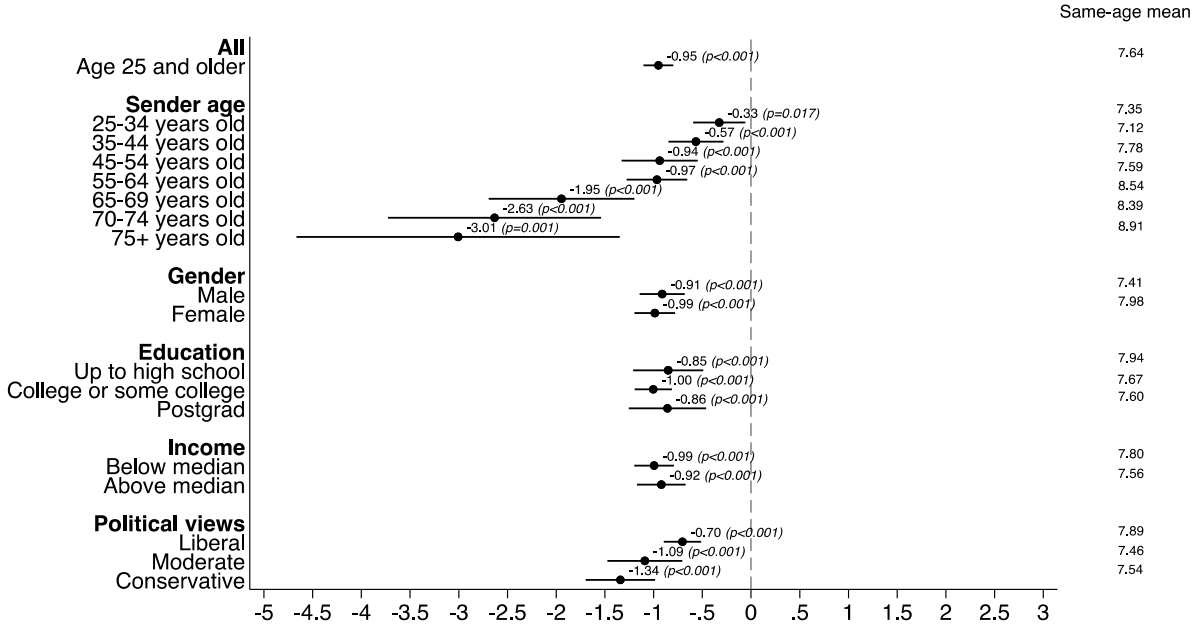
Notes: OLS coefficient plots. Estimated Help or Harm task transfer differences to recipients with different group attributes. CONTROL condition respondent data for Wave 1 and 2 (three-week delay) used. The dependent variable is the Help or Harm task allocation in CZK. The regressions control for gender, age category (6 categories), household size, number of children, education (4 categories), economic status (7 categories in E1), household income (11 categories in E1), region (14 regions), town size (7 categories), the ordering of HHT allocations (24 combinations), for whether the HHT age module was implemented before the other HHT modules, and for a wave fixed effect. The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student t-test (two-sided) p-values are reported in the figure. The column on the right shows mean allocations for recipients from the baseline group (respondent's ingroup).

FIGURE 4. YOUNGISM IN SOCIAL PREFERENCES: HETEROGENEITY ACROSS SUB-GROUPS

PANEL A: EXPERIMENT 1 (CZECHIA): HELP OR HARM TRANSFER TO RECIPIENT AGED 18-24 VS. SAME AGE GROUP



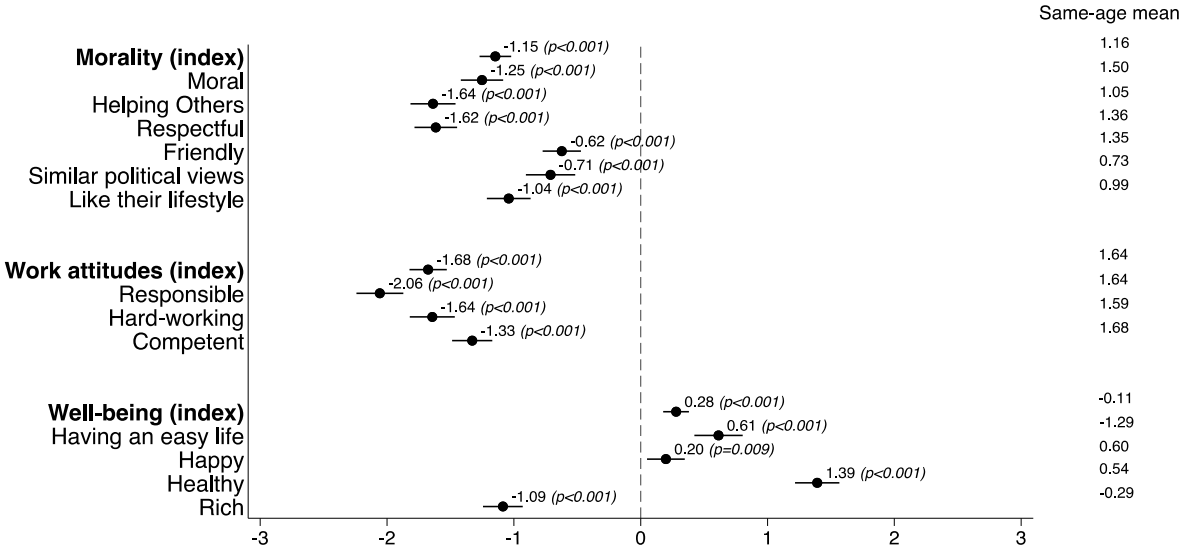
PANEL B: EXPERIMENT 2 (US): HELP OR HARM TRANSFER TO RECIPIENT AGED 18-24 VS. SAME AGE GROUP



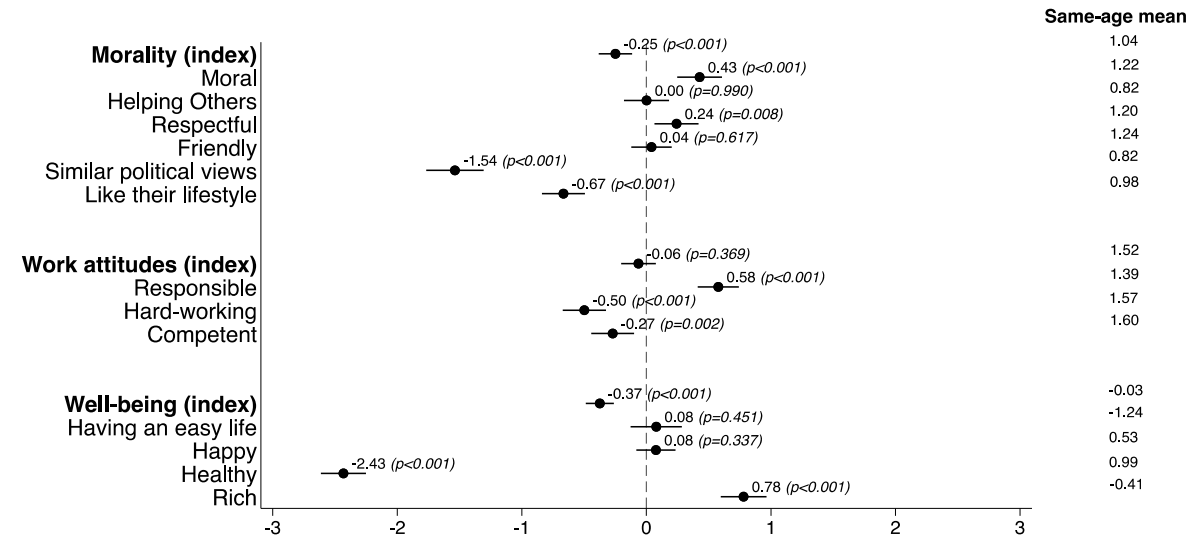
Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 18-24 vs. the same age group as the respondent on allocations in the Help or Harm task. In Experiment 1 (E1), CONTROL condition respondent data for Wave 1 and 2 (three-week delay) used. The dependent variable is the Help or Harm task allocation in CZK (Panel A) or USD (Panel B). The regressions control for gender, age category (6 categories), household size, number of children, education (4 categories), economic status (7 categories in E1, 6 in E2), household income (11 categories in E1, 9 in E2), and the ordering of HHT allocations (24 combinations). In Experiment 1, we additionally control for region (14 regions), town size (7 categories), for whether the HHT age module was implemented before the other HHT modules, and for a wave fixed effect. The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student t-test (two-sided) p-values are reported in the figure. We report estimates by respective respondent characteristics. Note that youngism cannot be estimated for senders 18-24 years old, as they are the youngest age group in the study. The column on the right shows mean allocations for recipients in the same age group as the respondent.

FIGURE 5. STEREOTYPES REGARDING YOUNG ADULTS AND SENIORS (EXPERIMENT 2: US)

PANEL A: STEREOTYPES REGARDING AGE GROUP 18-24 VS. SAME AGE GROUP (RESPONDENTS ABOVE 25 Y/O)

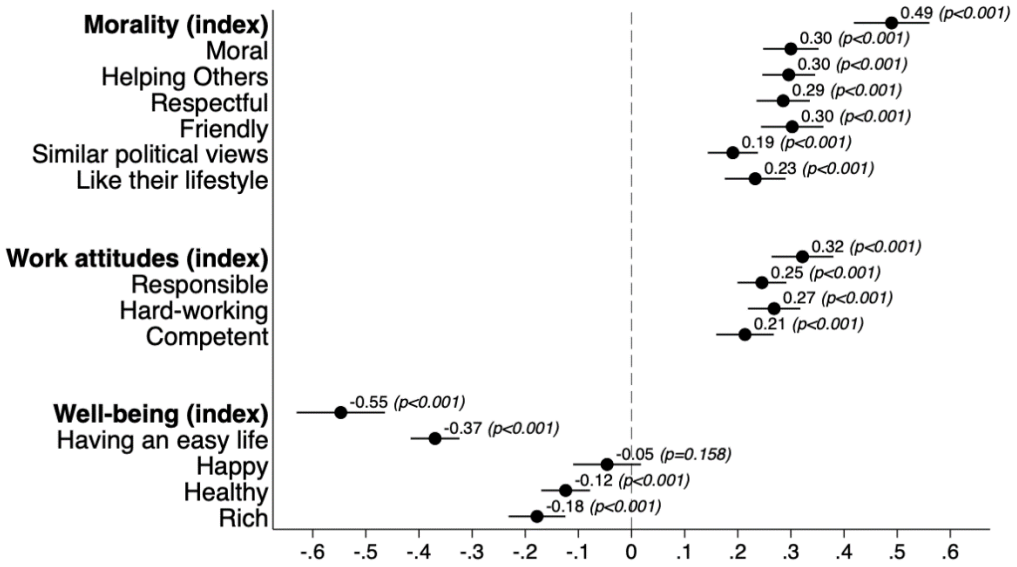


PANEL B: STEREOTYPES REGARDING AGE GROUP 65+ VS. SAME AGE GROUP (RESPONDENTS 18-64 Y/O)



Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 18-24 vs. the same age group as the respondent (Panel A) and estimated effects of the recipient being from age group 65+ vs. the same age group as the respondent (Panel B) on stereotypes in the different domains. Experiment 2 sample, respondents above 25 y/o (Panel A), and 18-64 y/o (Panel B). The dependent variable is the stated stereotype about an age-group in the specified domain, on a scale <-5, 5> (0 = neutral). Indices at the top are simple averages over stereotypes in a given category. The regressions use the same set of control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student t-test (two-sided) p-values are reported in the figure. The column on the right shows mean perceptions of respondents' own age group.

FIGURE 6. CORRELATIONS BETWEEN THE ALLOCATIONS IN THE HELP OR HARM TASK AND THE PERCEIVED CHARACTERISTICS OF THE RECIPIENT'S AGE GROUP (EXPERIMENT 2: US)



Notes: OLS coefficient plots. Estimated correlations between the allocations in the Help or Harm task (USD) and the perceived characteristics of the recipient's age group, from a regression in which the stereotypes are included one-by-one. Experiment 2 full sample, the results are very similar when we restrict the sample to respondents above 25 y/o, i.e. those for whom we document youngism. The regression additionally includes the same set of control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level (4 observations per respondent). The estimated effects and Student t-test (two-sided) p-values are reported in the figure.

TABLE 1. EFFECT OF THE RECIPIENT'S AGE ON ALLOCATIONS: REGRESSION ANALYSIS (EXPERIMENT 1: CZECHIA)

Dependent variable	Amount allocated in the Help or Harm task (CZK 0-200)					Anti-social behavior		Pro-social behavior	
						Below default	Minimum (CZK 0)	Above default	Maximum (CZK 200)
Sample	All	18-24 y/o	25-44 y/o	45-64 y/o	65+ y/o	All	All	All	All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Recipient 25-44 years old	11.19***	-14.97***	18.14***	10.00***	10.46***	-0.08***	-0.01***	0.09***	0.04***
	(1.18)	(5.42)	(2.16)	(1.65)	(2.23)	(0.01)	(0.00)	(0.01)	(0.01)
	[<0.001]	[0.007]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[0.001]	[<0.001]	[<0.001]
Recipient 45-64 years old	22.00***	-17.74***	18.82***	32.39***	25.42***	-0.12***	-0.03***	0.18***	0.08***
	(1.42)	(5.39)	(2.19)	(2.56)	(2.78)	(0.01)	(0.00)	(0.01)	(0.01)
	[<0.001]	[0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Recipient 65+ years old	32.80***	-17.89***	24.32***	38.55***	53.28***	-0.12***	-0.03***	0.27***	0.18***
	(1.79)	(6.46)	(2.70)	(3.07)	(3.65)	(0.01)	(0.01)	(0.02)	(0.01)
	[<0.001]	[0.007]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]	[<0.001]
Control variables	baseline	baseline	baseline	baseline	baseline	baseline	baseline	baseline	baseline
Mean recipient 18-24 years old	113.48	139.08	116.99	110.97	103.77	0.20	0.06	0.38	0.17
Observations	7,528	564	2,728	2,380	1,856	7,528	7,528	7,528	7,528
F-test [p-value] 25-44 y/o vs. 45-65 y/o	<0.001	0.443	0.662	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
F-test [p-value] 25-44 y/o vs. 65+ y/o	<0.001	0.539	0.025	<0.001	<0.001	<0.001	0.004	<0.001	<0.001
F-test [p-value] 45-64 y/o vs. 65+ y/o	<0.001	0.969	0.013	0.018	<0.001	0.578	0.574	<0.001	<0.001

Notes: OLS coefficients. Estimated effects of the recipient being in the older age groups (3 dummy variables for recipient 25-44 y/o, 45-64 y/o, and 65+ y/o, respectively), relative to recipient being 18-24 years old (omitted category) on allocations in the Help or Harm task (HHT). Experiment 1 sample, CONTROL condition respondent data for Wave 1 and 2 (three-week delay) used. The dependent variable in Columns 1-5 is the Help or Harm task allocation in CZK. The dependent variables in Columns 6-9 are binary variables equal to one if the allocation is below the default allocation of CZK 100, equal to CZK 0, above the default of CZK 100, and equal to CZK 200, respectively. The regressions use the same baseline set of control variables as Figure 4 (Panel A: Czechia sample). Standard errors clustered at the respondent level in parentheses, associated T-test p-values (two-sided) in brackets, reported also as *p<0.10; **p<0.05; ***p<0.01. The bottom

three lines present F-test p-values when we compare the estimated coefficients for the age groups above 25 y/o. Table A4 reports robustness checks, including a specification with individual x wave fixed effects, different sets of control variables (including LASSO-selected ones) and results separately for Wave 1 and 2 of Experiment 1. The results are robust.

TABLE 2. EFFECT OF THE RECIPIENT'S AGE ON ALLOCATIONS: REGRESSION ANALYSIS (EXPERIMENT 2: US)

Dependent variable	Amount allocated in the Help or Harm task (USD 0-10)					Anti-social behavior		Pro-social behavior	
						Below default	Minimum (USD 0)	Above default	Maximum (USD 10)
Sample	All	18-24 y/o	25-44 y/o	45-64 y/o	65+ y/o	All	All	All	All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Recipient 25-44 years old	0.28***	-0.71***	0.44***	0.29***	0.39**	-0.05***	-0.01**	0.04***	0.00
	(0.06)	(0.21)	(0.09)	(0.08)	(0.15)	(0.01)	(0.00)	(0.01)	(0.01)
	[<0.001]	[0.001]	[<0.001]	[<0.001]	[0.010]	[<0.001]	[0.030]	[0.001]	[0.912]
Recipient 45-64 years old	0.45***	-1.20***	0.14	0.95***	1.02***	-0.06***	-0.00	0.08***	-0.00
	(0.08)	(0.31)	(0.13)	(0.12)	(0.18)	(0.01)	(0.00)	(0.02)	(0.01)
	[<0.001]	[<0.001]	[0.287]	[<0.001]	[<0.001]	[<0.001]	[0.300]	[<0.001]	[0.929]
Recipient 65+ years old	1.02***	-0.85**	0.43***	1.62***	2.26***	-0.09***	-0.00	0.12***	0.11***
	(0.10)	(0.33)	(0.15)	(0.15)	(0.25)	(0.01)	(0.01)	(0.02)	(0.01)
	[<0.001]	[0.011]	[0.004]	[<0.001]	[<0.001]	[<0.001]	[0.858]	[<0.001]	[<0.001]
Control variables	baseline	baseline	baseline	baseline	baseline	baseline	baseline	baseline	baseline
Mean recipient 18-24 years old	6.83	8.37	6.80	6.73	6.29	0.18	0.02	0.70	0.36
Observations	4,020	356	1,620	1,412	632	4,020	4,020	4,020	4,020
F-test [p-value] 25-44 y/o vs. 45-65 y/o	0.007	0.020	0.004	<0.001	<0.001	0.292	0.251	0.016	0.832
F-test [p-value] 25-44 y/o vs. 65+ y/o	<0.001	0.659	0.975	<0.001	<0.001	0.002	0.075	<0.001	<0.001
F-test [p-value] 45-64 y/o vs. 65+ y/o	<0.001	0.109	0.001	<0.001	<0.001	0.006	0.251	<0.001	<0.001

Notes: OLS coefficients. Estimated effects of the recipient being in older age groups (3 dummy variables for recipient 25-44 y/o, 45-64 y/o, and 65+ y/o, respectively), relative to recipient being 18-24 years old (omitted category) on allocations in the Help or Harm task (HHT). Experiment 2 sample. The dependent variable in Columns 1-5 is the Help or Harm task allocation in USD. The dependent variables in Columns 6-9 are binary variables equal to one if the allocation is below the default allocation of USD 5, equal to USD 0, above the default of USD 5, and equal to USD 10, respectively. The regressions use the same baseline set of control variables as Figure 4 (Panel B: US sample). Standard errors clustered at the respondent level in parentheses, associated T-test p-values (two-sided) in brackets, reported also as *p<0.10; **p<0.05; ***p<0.01. The bottom three lines present F-test p-values when we compare the estimated coefficients for the age groups above 25 y/o. Table A4 reports robustness checks, including a specification with individual fixed effects and different sets of control variables (including LASSO-selected ones). The results are robust.

TABLE 3. EFFECTS OF THE HARDSHIP TREATMENT ON ALLOCATIONS AND SUPPORT FOR POLICIES (EXPERIMENT 1: CZECHIA)

Dependent variable	Amount allocated in the Help or Harm task (CZK 0-200)		Support for policy focusing on the young (18-24)			
	Recipient 18-24 years old		mental health	mental health	financial situation	financial situation
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immediate effect						
HARDSHIP	5.98**	6.18**	4.98***	4.89***	3.38***	3.63***
	(2.49)	(2.48)	(1.20)	(1.20)	(1.29)	(1.29)
	[0.017]	[0.013]	[0.000]	[0.000]	[0.009]	[0.005]
Control variables	baseline	LASSO	baseline	LASSO	baseline	LASSO
Control mean	113.43	113.43	60.70	60.70	56.17	56.17
Observations	2,027	2,027	2,027	2,027	2,027	2,027
Panel B: Three-weeks effect						
HARDSHIP	6.06**	6.29**	0.43	0.48	0.84	1.04
	(2.44)	(2.45)	(1.29)	(1.27)	(1.36)	(1.38)
	[0.013]	[0.010]	[0.735]	[0.708]	[0.540]	[0.448]
Control variables	baseline	LASSO	baseline	LASSO	baseline	LASSO
Control mean	113.54	113.54	61.44	61.44	56.40	56.40
Observations	1,837	1,837	1,837	1,837	1,837	1,837

Notes: OLS coefficients. Estimated effects of the HARDSHIP condition on the Help or Harm task allocations in CZK (Columns 1-2) and support for policies (Columns 3-6), all regarding the 18-24 y/o age group. For the exact wording of the measures of support for various policies, see Online Appendix D, Section I.4. Experiment 1 sample, Wave 1 data used in Panel A, Wave 2 data in Panel B. The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). Huber–White robust standard errors, associated T-test p-values (two-sided) in brackets, reported also as *p<0.10; **p<0.05; ***p<0.01.

Online Appendix

Youngism: Discrimination and Stereotypes

Vojtěch Bartoš, Michal Bauer, Jana Cahlíková, Julie Chytilová

This version: October 1, 2024

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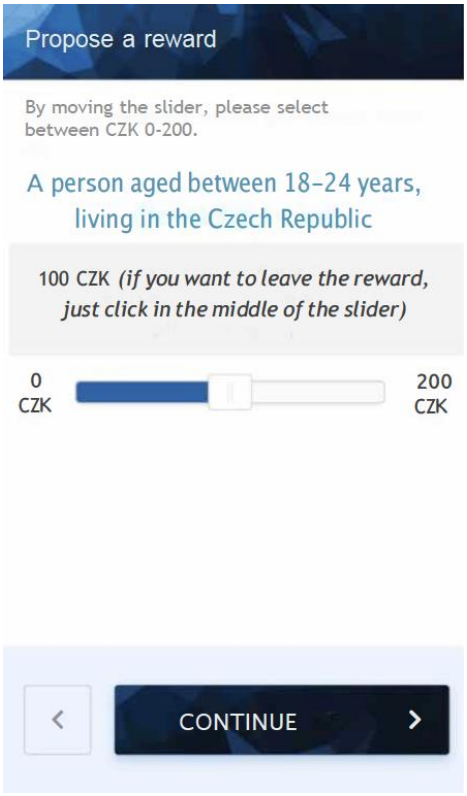
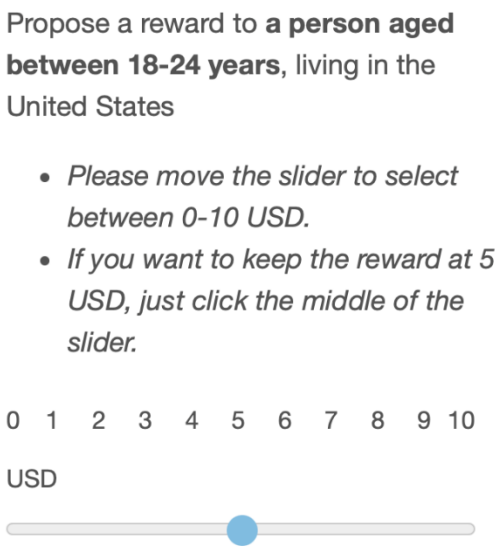
Online Appendix A. Appendix Figures and Tables

Figure A1. Help-or-Harm task decision screen

Panel A: Experiment 1 (Czechia)

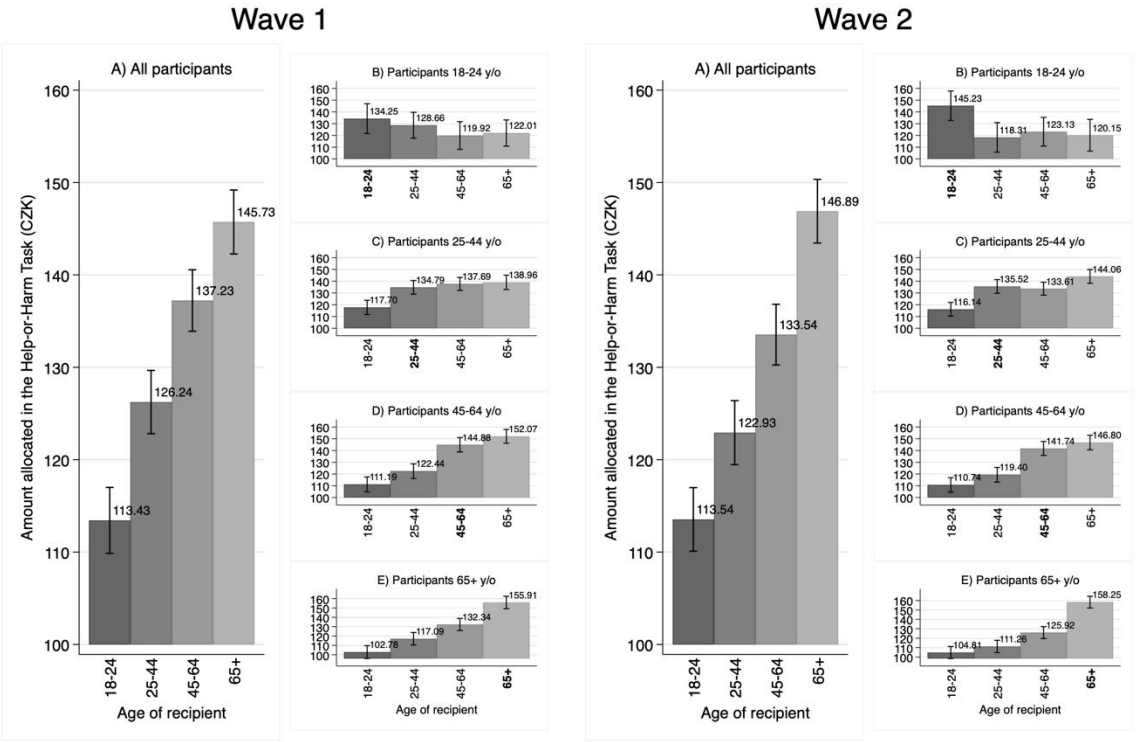


Panel B: Experiment 2 (US)



Notes: In Panel A, the translation into English from Czech is displayed.

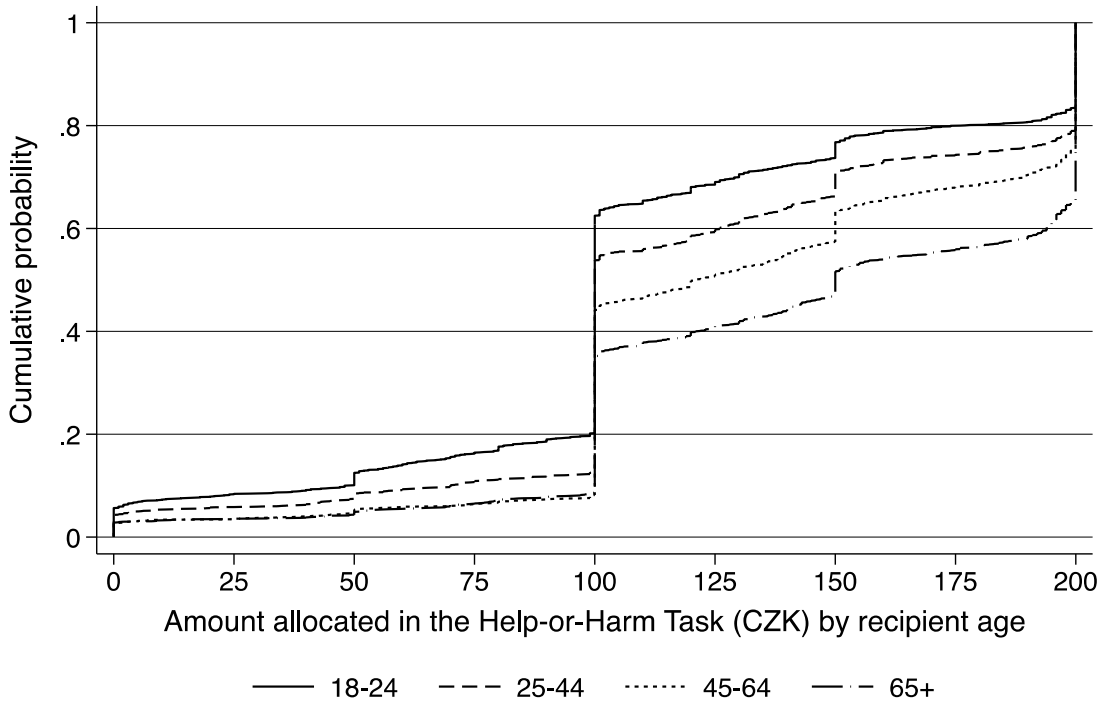
Figure A2: Allocations in the Help-or-Harm task across waves (Experiment 1, Czechia)



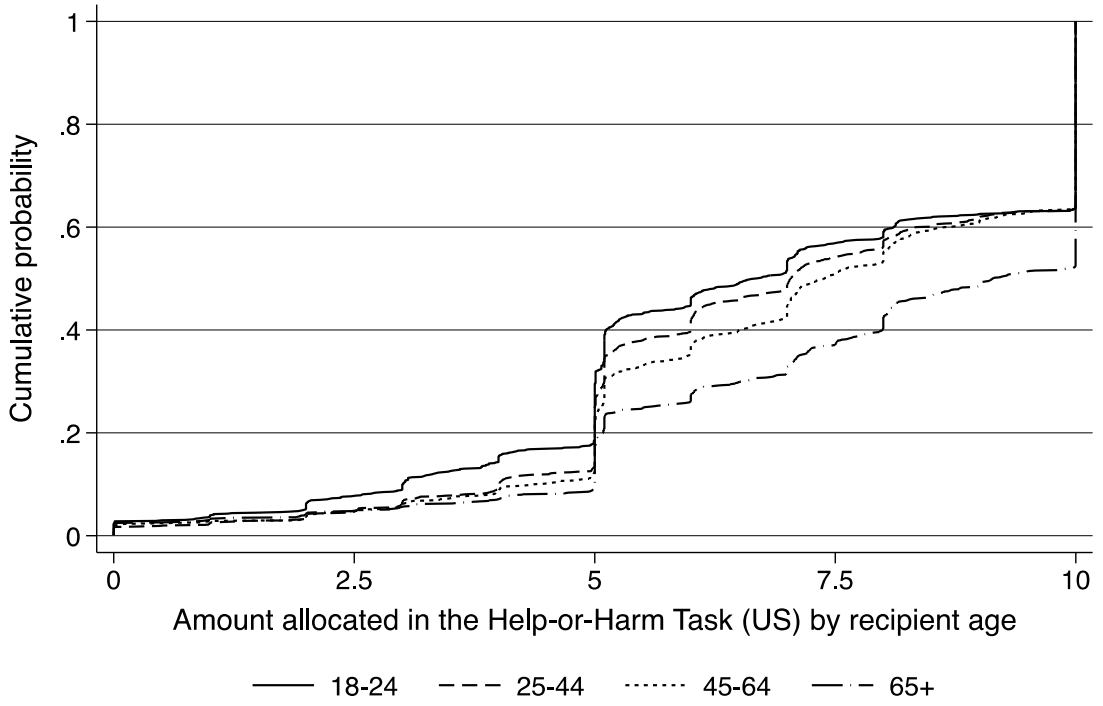
Notes: Mean allocations in the Help-or-Harm task by the age group of the recipient in Experiment 1, separated by Wave 1 and Wave 2 (three-week delay) data collections. CONTROL condition respondent data used. Panel A reports data for all respondents, Panels B-E report data for subsamples of respondents in a specific age-range. The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level.

Figure A3. Allocations in the Help-Or-Harm task to recipients in different age groups (CDFs)

Panel A: Experiment 1 (Czechia)

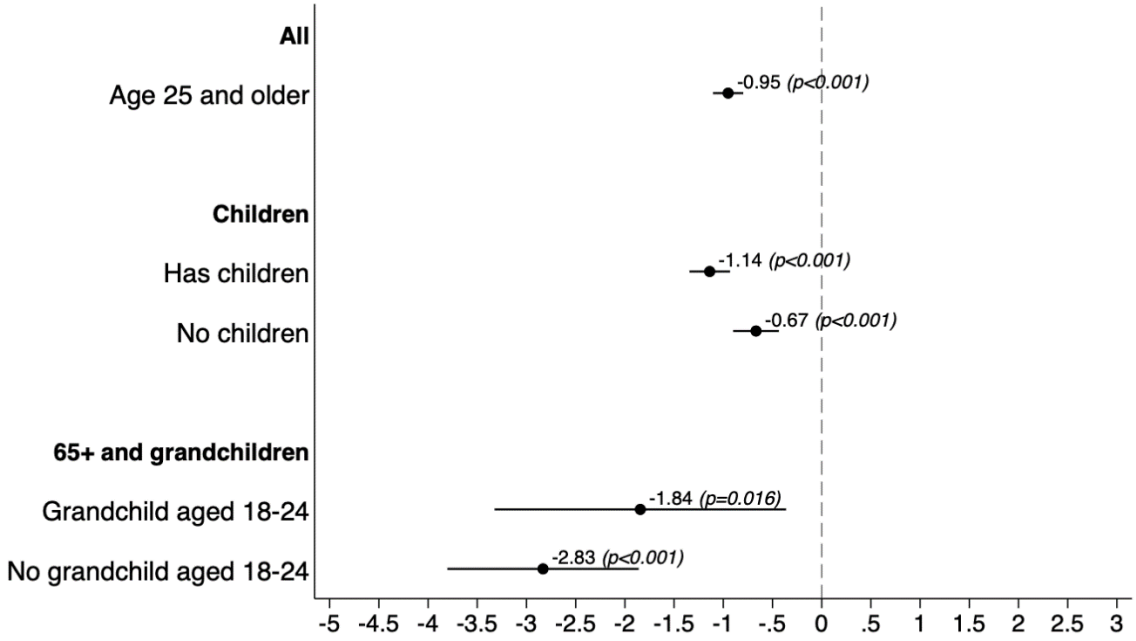


Panel B: Experiment 2 (US)



Notes: Cumulative distributions functions (CDFs) of allocations in the Help-or-Harm task by the age group of the recipient in Experiments 1 and 2. In Experiment 1, CONTROL condition respondent data for Wave 1 and 2 (three-week delay) are used.

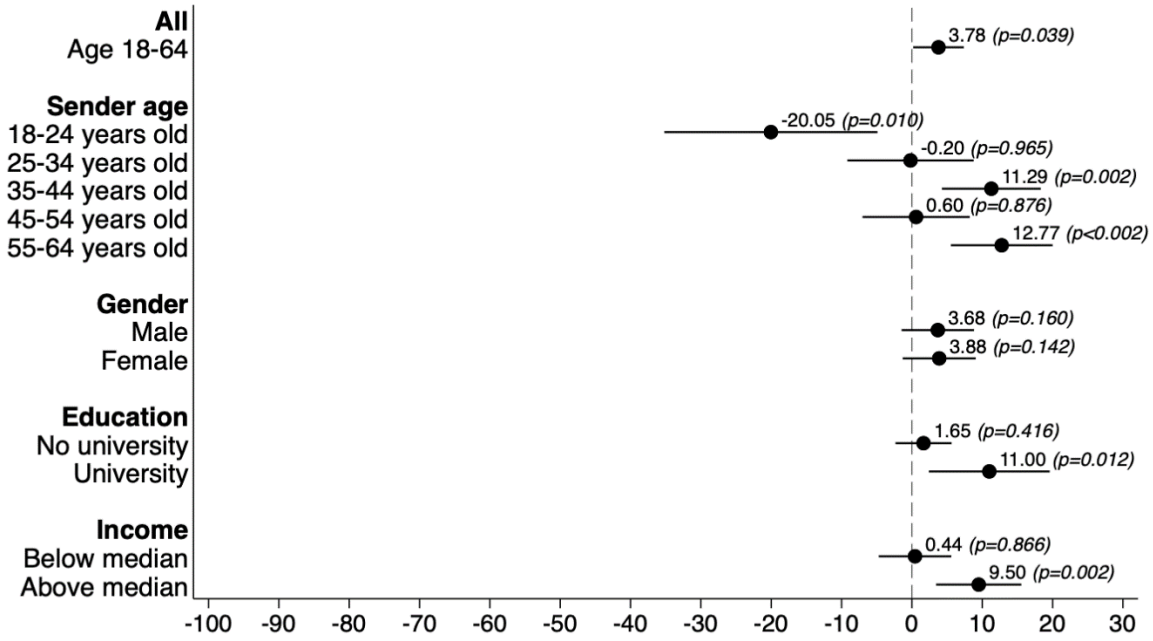
Figure A4. Youngism in social preferences: Heterogeneity by the presence of children/grandchildren (Experiment 2: US)



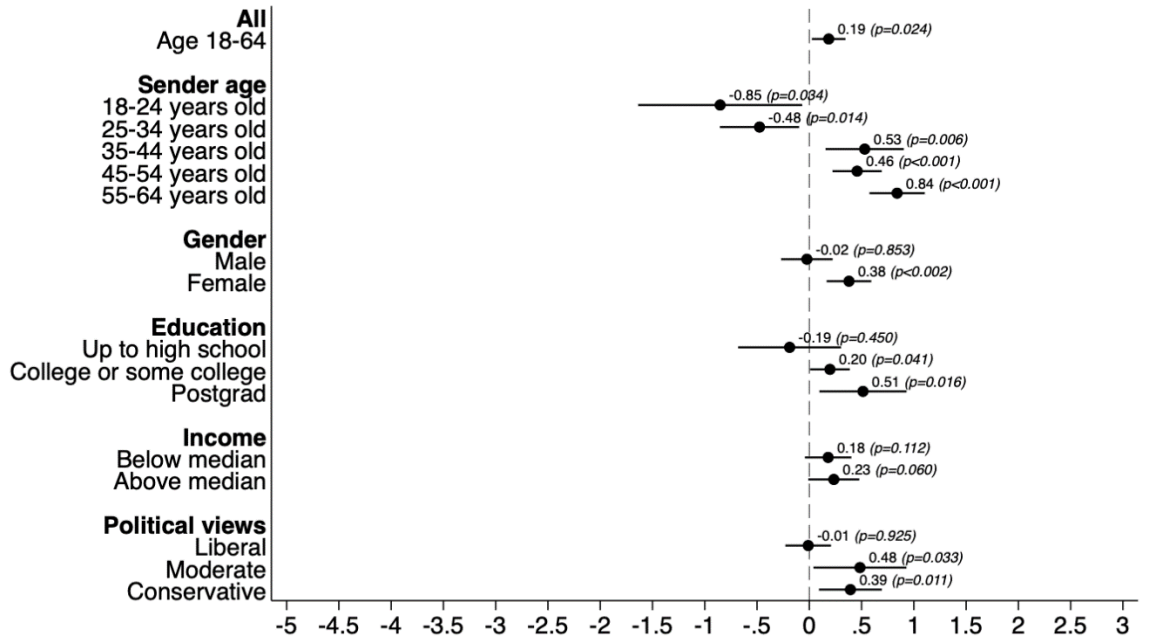
Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 18-24 vs. the same age group as the respondent on allocations in the Help-or-Harm task. The dependent variable is the Help-or-Harm task allocation in USD. The regressions control for the same baseline control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student's t-test (two-sided) p-values are reported in the figure. We report estimates by whether the respondent reports having children and grandchildren who are young adults, respectively.

Figure A5. Oldism in social preferences: Heterogeneity across sub-groups

Panel A: Experiment 1 (Czechia): Help-or-Harm transfer to recipient aged 65+ vs. same age group



Panel B: Experiment 2 (US): Help-or-Harm transfer to recipient aged 65+ vs. same age group



Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 65+ vs. the same age group as the respondent on allocations in the Help-or-Harm task. In Experiment 1 (E1), CONTROL condition respondent data for Wave 1 and 2 (three-week delay) used. The dependent variable is the Help-or-Harm task allocation in CZK (Panel A) or USD (Panel B). The regressions control for the same baseline control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student's t-test (two-sided) p-values are reported in the figure. We report estimates by respective respondent characteristics. Note that oldism cannot be estimated for senders above the age of 65, as they are the oldest age group in the study.

Figure A6. Correlation matrix between the different age-group perceptions (Experiment 2: US)

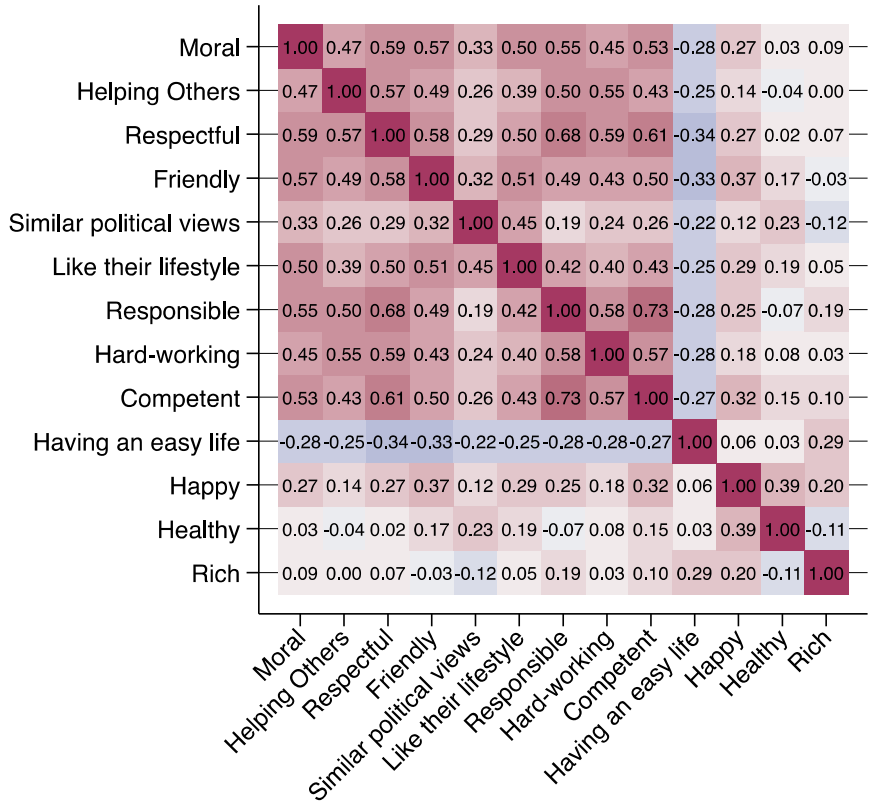
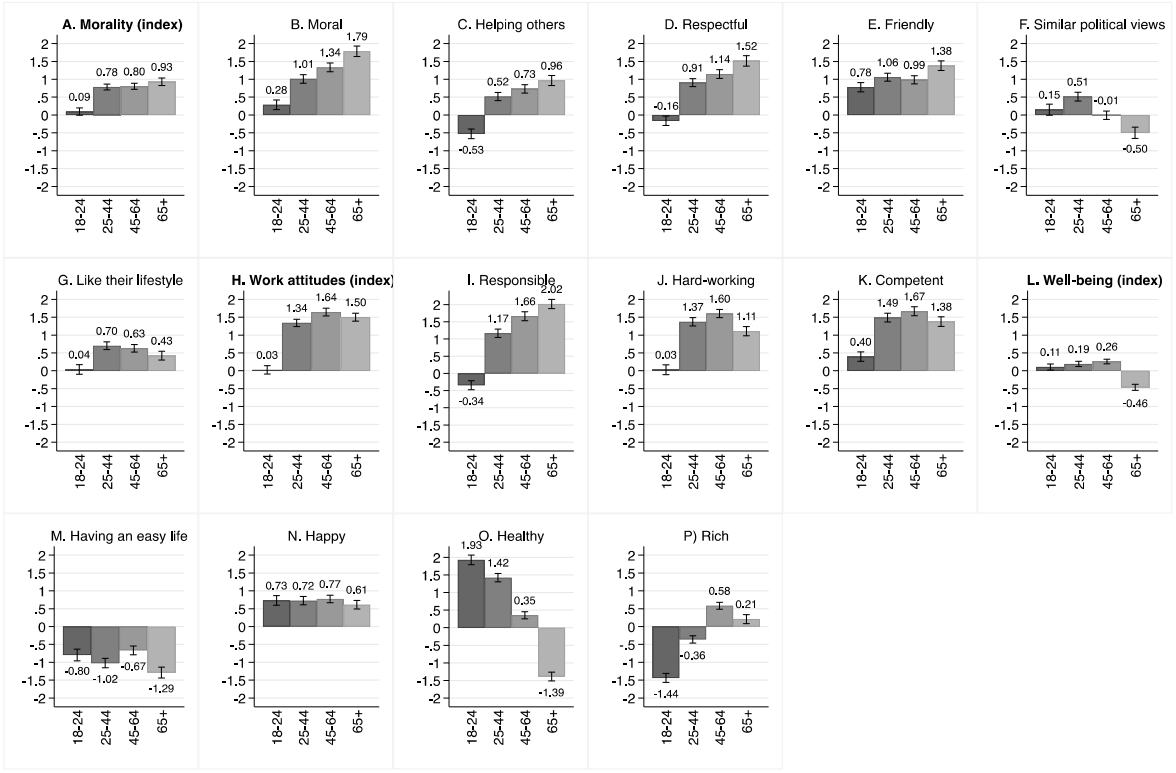
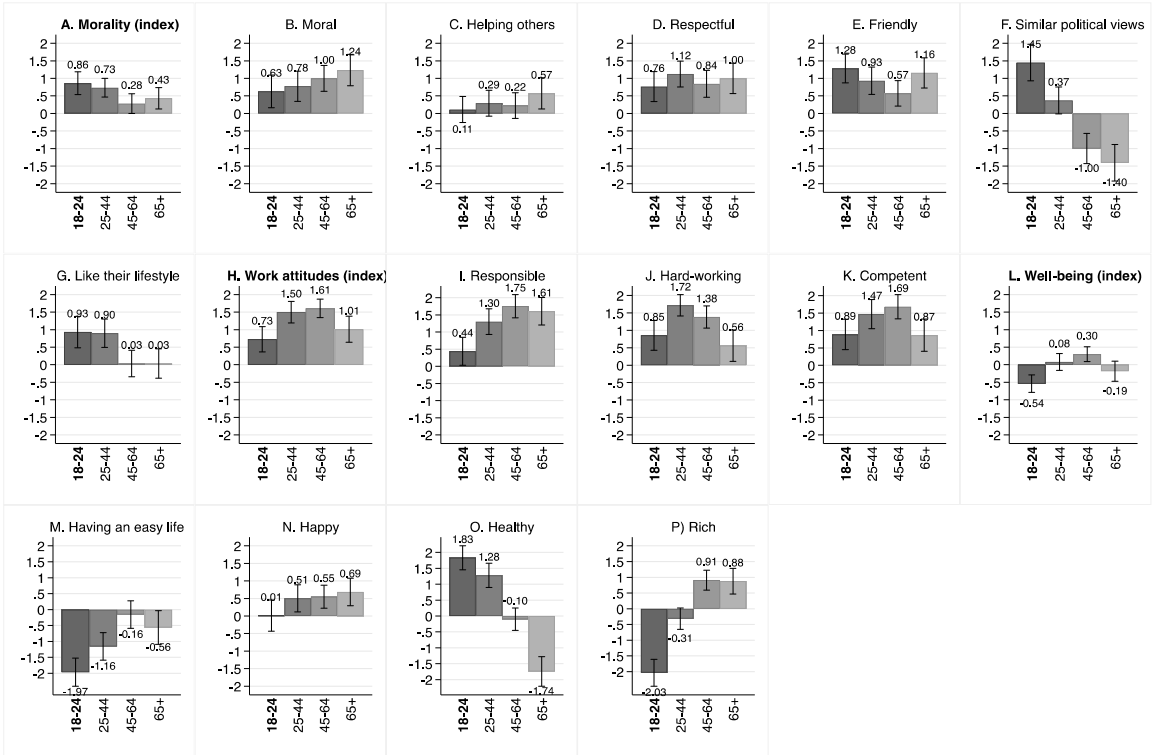


Figure A7. Stereotypes regarding the different age groups (Experiment 2: US)

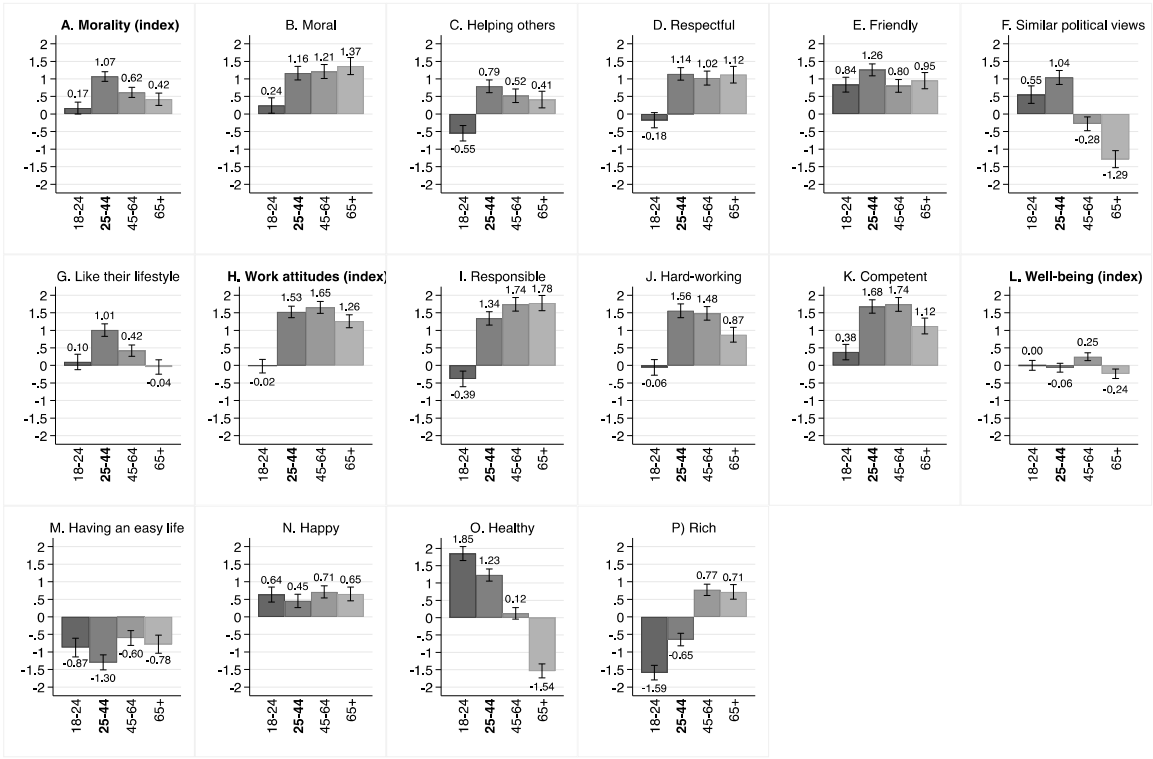
Panel A: Whole sample (Respondents aged 18+)



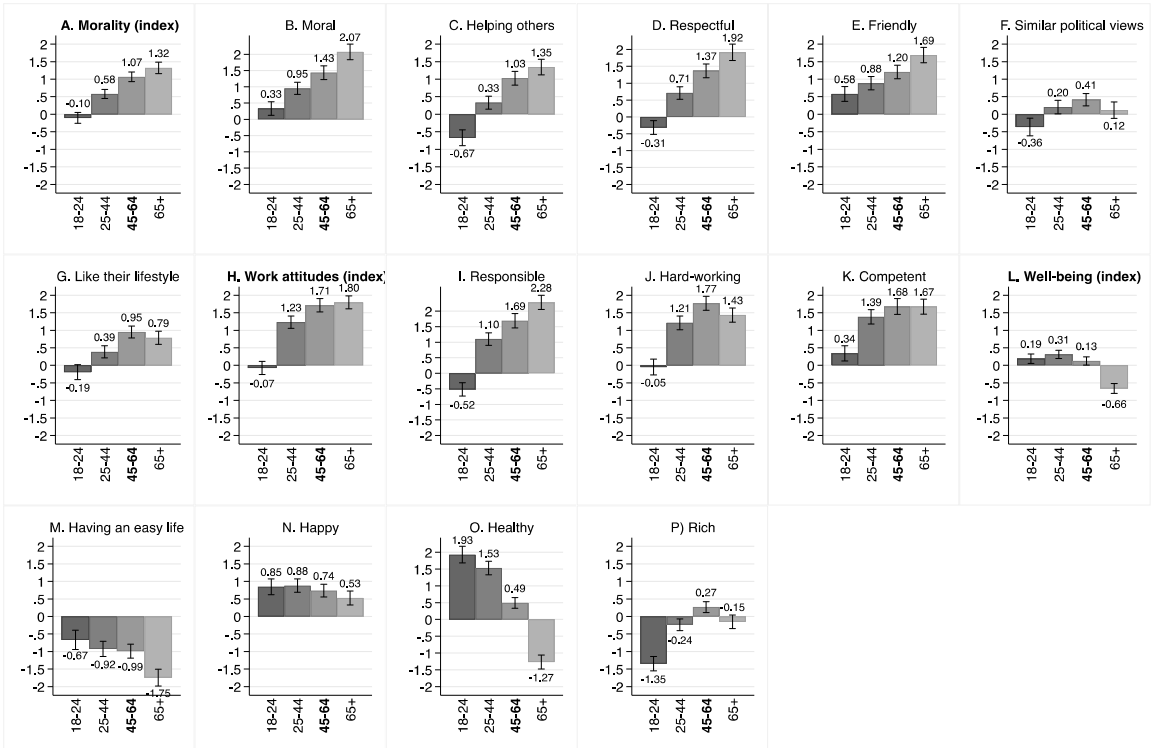
Panel B: Respondents 18-24 y/o



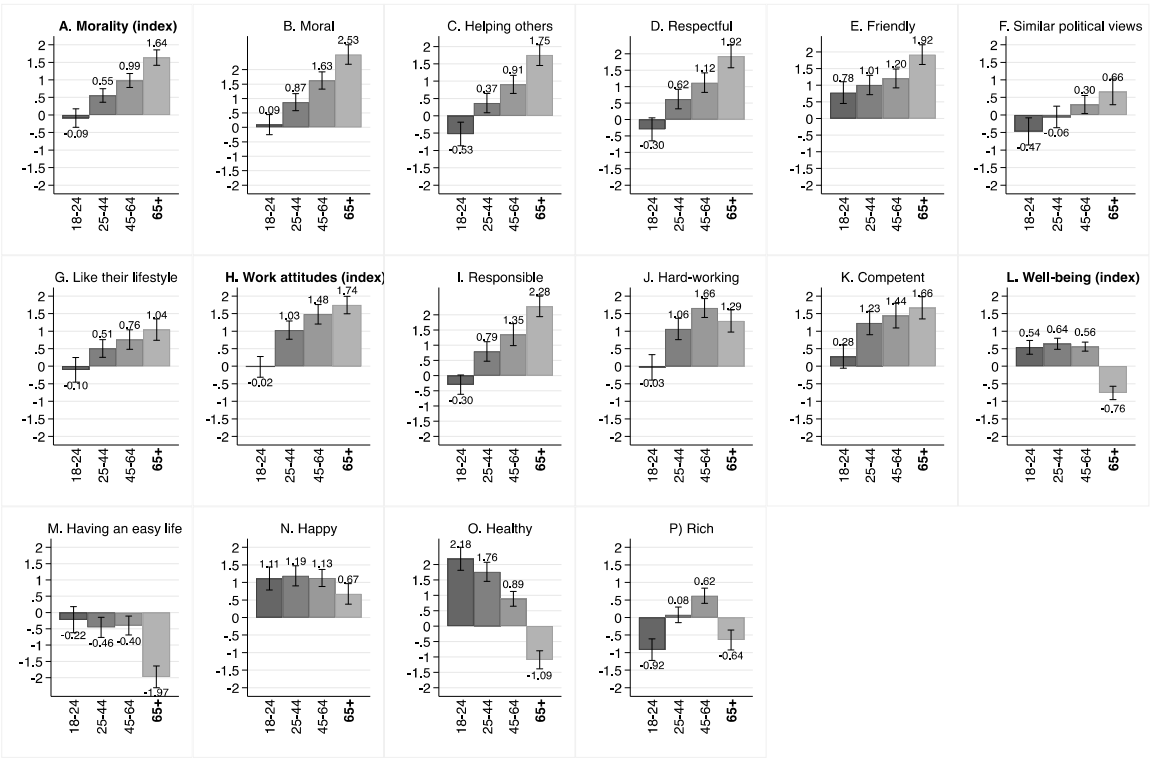
Panel C: Respondents 25-44 y/o



Panel D: Respondents 45-64 y/o



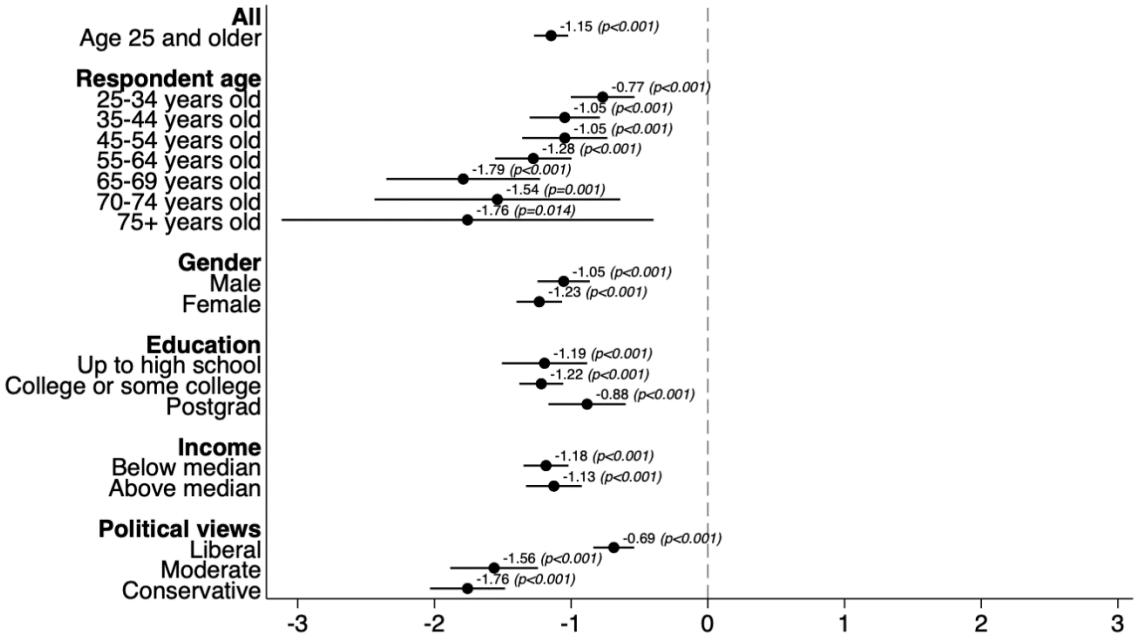
Panel E: Respondents 65+ y/o



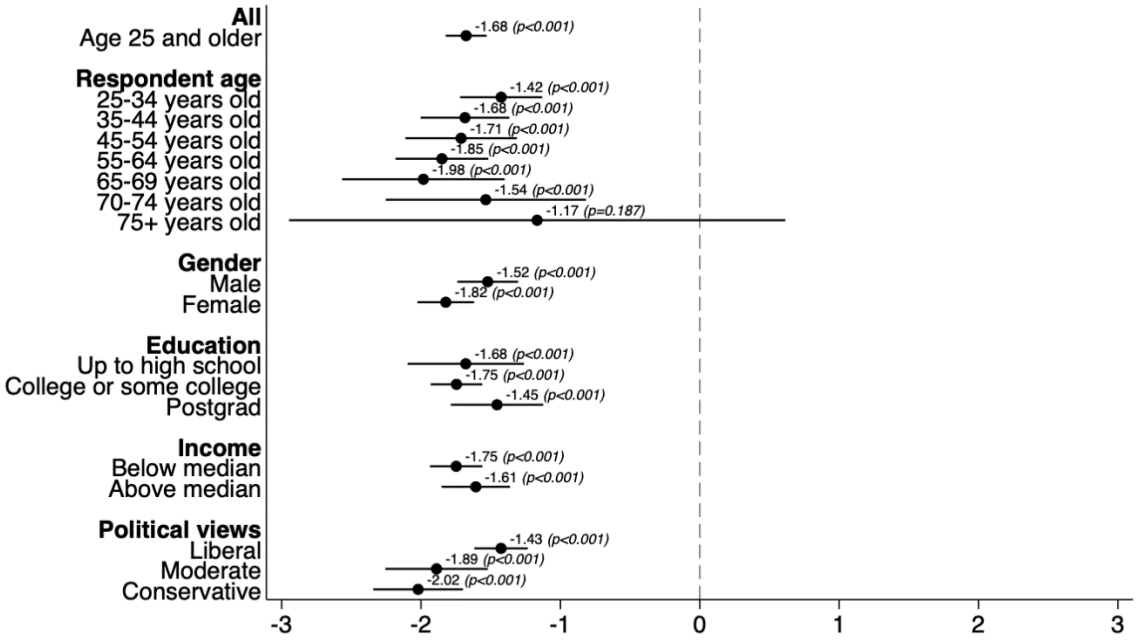
Notes: Mean ratings of the different age groups across different perception domains, for the whole Experiment 2 sample (Panel A) and separately by respondent's age group (Panels B-E). The stereotypes and indices are on a scale <-5, 5> (0 = neutral). The Morality index is calculated as an average over the following stereotype-ratings: 1) moral, 2) helping others, 3) respectful, 4) friendly, 5) similar political views, and 6) like their lifestyle. The work attitudes index is calculated as an average over the following stereotype-ratings: 1) responsible, 2) hard-working, and 3) competent. The well-being index is calculated as an average over the following stereotype-ratings: 1) having an easy life, 2) happy, 3) healthy, and 4) rich. The whiskers denote the 95% confidence interval.

Figure A8. Stereotypes regarding young adults: Heterogeneity across sub-groups (Experiment 2: US)

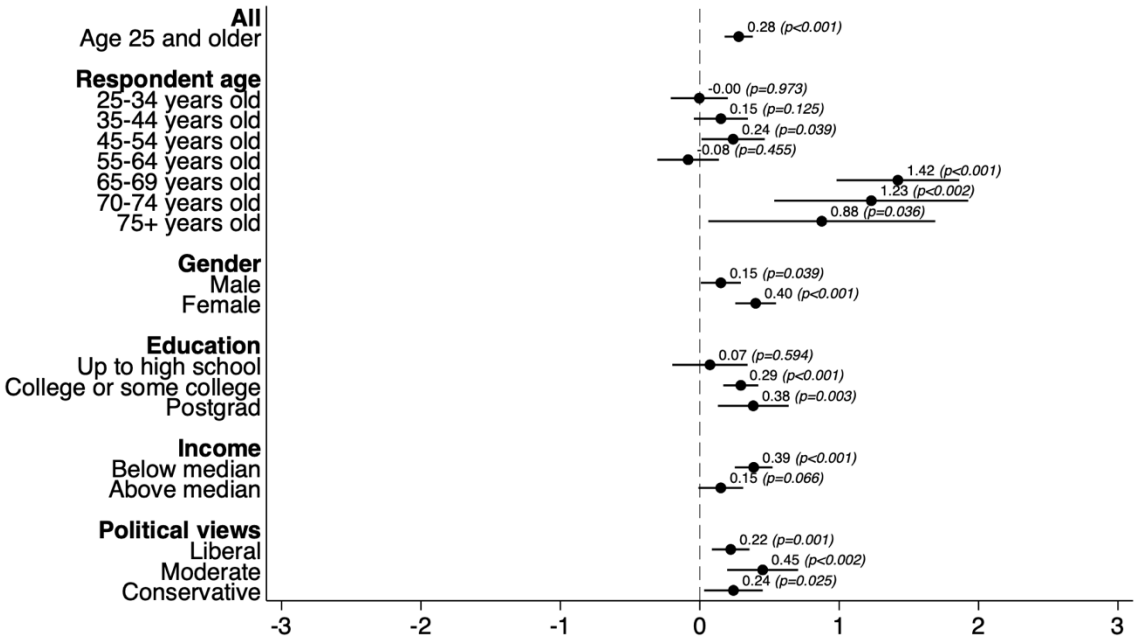
Panel A: Morality (index)



Panel B: Work attitudes (index)



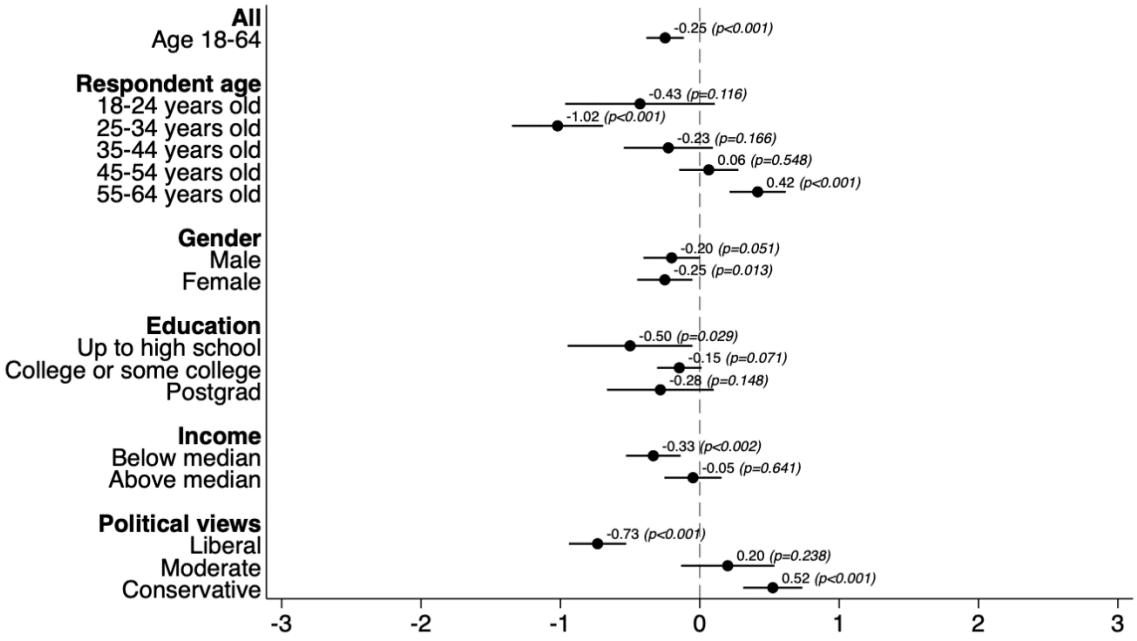
Panel C: Well-being (index)



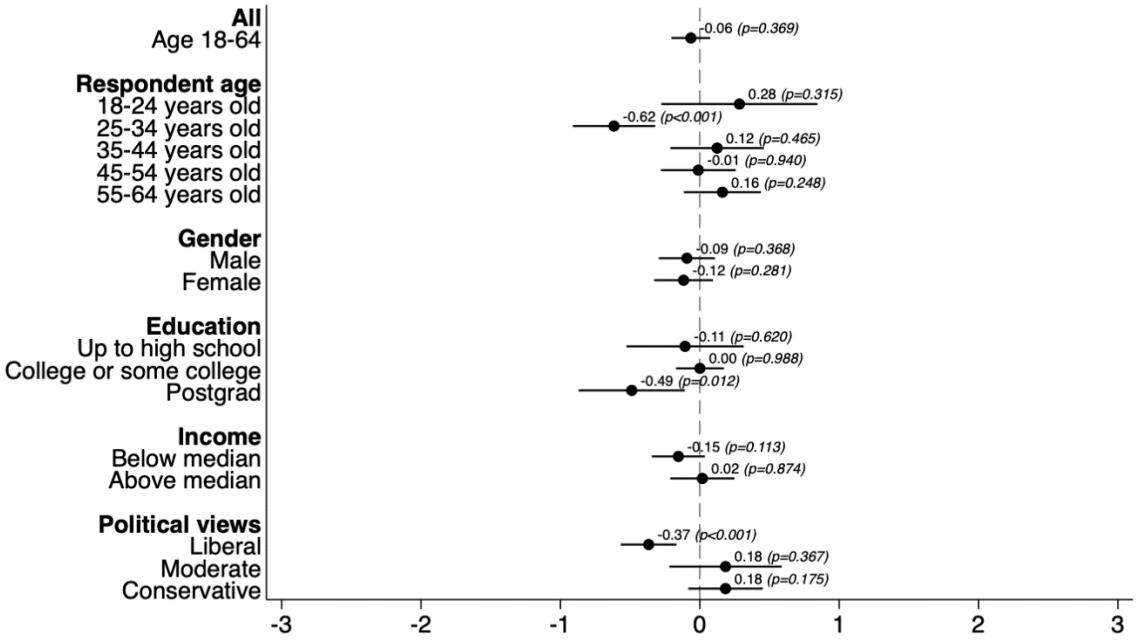
Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 18-24 vs. the same age group as the respondent on stereotype indices. We report estimates by respective respondent characteristics. The Morality index (Panel A) is calculated as an average over the following stereotype-ratings: 1) moral, 2) helping others, 3) respectful, 4) friendly, 5) similar political views, and 6) like their lifestyle. The work attitudes index (Panel B) is calculated as an average over the following stereotype-ratings: 1) responsible, 2) hard-working, and 3) competent. The well-being index (Panel C) is calculated as an average over the following stereotype-ratings: 1) having an easy life, 2) happy, 3) healthy, and 4) rich. The stereotypes and indices are on a scale <-5, 5> (0 = neutral). Experiment 2 sample, respondents above 25 y/o. The regressions use the same set of control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student's t-test (two-sided) p-values are reported in the figure.

Figure A9. Stereotypes regarding seniors: Heterogeneity across sub-groups (Experiment 2: US)

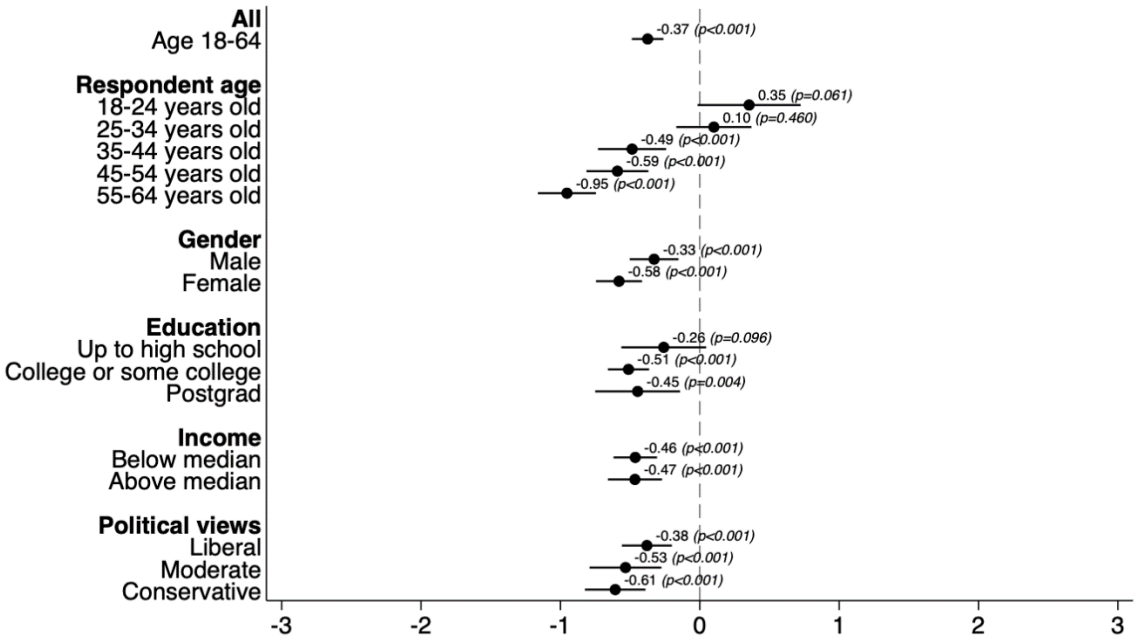
Panel A: Morality (index)



Panel B: Work attitudes (index)



Panel C: Well-being (index)



Notes: OLS coefficient plots. Estimated effects of the recipient being from age group 65+ vs. the same age group as the respondent on stereotype indices. We report estimates by respective respondent characteristics. The Morality index (Panel A) is calculated as an average over the following stereotype-ratings: 1) moral, 2) helping others, 3) respectful, 4) friendly, 5) similar political views, and 6) like their lifestyle. The work attitudes index (Panel B) is calculated as an average over the following stereotype-ratings: 1) responsible, 2) hard-working, and 3) competent. The well-being index (Panel C) is calculated as an average over the following stereotype-ratings: 1) having an easy life, 2) happy, 3) healthy, and 4) rich. The stereotypes and indices are on a scale <-5, 5> (0 = neutral). Experiment 2 sample, respondents 18-64 y/o. The regressions use the same set of control variables as in Figure 4 (Panel B: US sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student's t-test (two-sided) p-values are reported in the figure.

Table A1. Sample statistics and randomization check (Experiment 1: Czechia)

	(1)	(2)	(3)	(4)	(5)	(6)
	Sample mean	CONTROL	HARDSHIP	(2) vs. (3) p-value	Czech population	diff. (1) vs. (5)
Female	0.50	0.50	0.49	0.584	0.51	-0.01
Age	48.16	47.99	48.32	0.568		
Age category				0.952		
age cat 18-24	0.08	0.08	0.08		0.08	0.00
age cat 25-34	0.16	0.17	0.15		0.16	0.00
age cat 35-44	0.21	0.21	0.21		0.2	0.00
age cat 45-54	0.17	0.17	0.17		0.17	0.00
age cat 55-64	0.15	0.14	0.15		0.15	0.00
age cat 65+	0.24	0.24	0.24		0.24	0.00
Region				0.275		
Prague	0.12	0.13	0.11		0.12	0.00
Central Bohemia	0.13	0.13	0.13		0.13	0.00
South Bohemia	0.06	0.07	0.05		0.06	0.00
Plzeň	0.05	0.05	0.06		0.06	-0.01
Karlovy Vary	0.03	0.02	0.03		0.03	0.00
Ústí	0.08	0.08	0.08		0.08	0.00
Liberec	0.04	0.05	0.04		0.04	0.00
Hradec Králové	0.05	0.05	0.05		0.05	0.00
Pardubice	0.05	0.05	0.05		0.05	0.00
Vysočina	0.05	0.05	0.04		0.05	0.00
South Moravia	0.11	0.12	0.11		0.11	0.00
Olomouc	0.06	0.05	0.07		0.06	0.00
Zlín	0.05	0.06	0.05		0.06	-0.01
Moravia-Silesia	0.11	0.10	0.12		0.12	-0.01
Municipality size				0.530		
Below 999	0.17	0.17	0.16		0.17	0.00
1,000-1,999	0.10	0.10	0.11		0.1	0.00
2,000-4,999	0.12	0.12	0.13		0.11	0.01
5,000-1,9999	0.18	0.19	0.18		0.18	0.00
2,0000-4,9999	0.12	0.11	0.13		0.12	0.00
5,0000-9,9999	0.08	0.08	0.07		0.1	-0.02
Above 100,000	0.23	0.23	0.24		0.22	0.01
Education				0.545		
primary	0.12	0.11	0.13		0.11	0.01
lower secondary	0.33	0.34	0.33		0.34	-0.01
upper secondary	0.35	0.35	0.36		0.35	0.00
university	0.20	0.20	0.19		0.2	0.00
Economic status				0.704		
Employee	0.46	0.47	0.46		0.48	-0.02
Enterpreneur	0.07	0.07	0.07		0.10	-0.03
Unemployed	0.05	0.05	0.05		0.03	0.02
Retired	0.30	0.29	0.30		0.30	0.00
Student	0.06	0.06	0.07		0.06	0.00
Parental leave or other	0.06	0.07	0.06		0.05	0.01
Household size	2.59	2.57	2.62	0.202		
Number of children	0.48	0.45	0.50	0.063		
Household income				0.402		
Up to 10,000 CZK	0.03	0.03	0.02			
10,001 - 15,000 CZK	0.08	0.09	0.07			
15,001 - 20,000 CZK	0.07	0.07	0.08			
20,001 - 25,000 CZK	0.10	0.10	0.11			
25,001 - 30,000 CZK	0.11	0.12	0.11			

30,001 - 35,000 CZK	0.09	0.09	0.09
35,001 - 40,000 CZK	0.11	0.11	0.11
40,001 - 50,000 CZK	0.12	0.11	0.13
50,001 - 60,000 CZK	0.07	0.07	0.06
Over 60,000 CZK	0.06	0.07	0.07
I don't know / Don't want to say	0.15	0.15	0.16
Observations	2027	992	1035

Notes: Sample means for the Experiment 1 in Columns 1, 2, and 3. Column 4 reports p-values of Pearson's chi-squared test for equality between the CONTROL and HARDSHIP conditions for categorical variables, whereas for the remaining variables (age, household size, number of children) we use a Wilcoxon rank-sum test. The sample is representative of the Czech population 18+ in terms of sex, age, education, region, municipality size, employment status, age x sex, age x education. Column 5 reports means for the Czech population for the variables based on which the sample is benchmarked (this excludes exact age, household size, number of children, and household income). Simple differences between Columns 1 and 5 are presented in Column 6.

Table A2. Sample statistics (Experiment 2: US)

	(1) Sample mean	(2) US population	(3) diff. (1) vs. (2)
Female	0.51	0.51	0.00
Age	45.96		
Age category			
age cat 18-24	0.09	0.11	-0.02
age cat 25-34	0.21	0.27	-0.06
age cat 35-44	0.19	0.24	-0.05
age cat 45-54	0.16	0.20	-0.04
age cat 55-64	0.19	0.24	-0.05
age cat 65+	0.16	0.20	-0.04
Education			
secondary or lower	0.16		
college or some college	0.65		
graduate	0.19		
Economic status			
Employee	0.61		
Enterpreneur	0.08		
Unemployed	0.10		
Retired	0.12		
Student	0.04		
Parental leave or other	0.05		
Household size	2.71		
Number of children	1.22		
Household income			
Up to 24,999 USD	0.13		
25,000 - 49,999 USD	0.24		
50,000 - 74,999 USD	0.21		
75,000 - 99,999 USD	0.17		
100,000 - 149,999 USD	0.14		
150,000 - 199,999 USD	0.06		
Over 200,000 USD	0.04		
I don't know / Don't want to say	0.02		
Observations	1,005		

Notes: Sample means for Experiment 2 in Columns 1. The sample is representative of the US population in terms of age (five brackets: 18-24, 25-34, 35-44, 45-54, 55+), sex (male/female) and ethnicity (White/Mixed/Asian/Black/Other) and is recruited on Prolific as a US representative sample). Column 2 reports means for the US where available (US Census Bureau). Simple differences between Columns 1 and 2 are presented in Column 3.

Table A3. Relationship between allocations in the Help-or-Harm task and policy support (Experiment 1: Czechia)

Dependent variable	Support for policy focusing on:					
	The young (18-24)		The middle (25-64)		The old (65+)	
	mental health	financial situation	mental health	financial situation	mental health	financial situation
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A						
Amount allocated to recipients 18-24 years old	0.365	0.460	0.263	0.273	0.110	0.117
Prob > |t|	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1882	1882	1882	1882	1882	1882
Panel B						
Amount allocated to recipients 25-44 and 45-64 years old	0.291	0.294	0.365	0.439	0.227	0.235
Prob > |t|	0.000	0.000	0.000	0.000	0.000	0.000
Observations	3764	3764	3764	3764	3764	3764
Panel C						
Amount allocated to recipients 65+ years old	0.167	0.148	0.264	0.189	0.428	0.559
Prob > |t|	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1882	1882	1882	1882	1882	1882

Notes: Correlations between allocations in the Help-or-Harm (HHT) task and stated policy support (See Online Appendix 3.4 for full wording). Spearman's rho reported. P-values for a hypothesis testing that the variables are independent reported. Panels report correlations by HHT recipient age groups (pooled for middle-aged group in Panel B because policy support questions were asked only for the 25-64 y/o group). Experiment 1 CONTROL condition respondent data for Wave 1 and 2 (three-week delay) are used.

Table A4. Effect of the Recipient's Age on Allocations: Robustness

Panel A: Experiment 1 (Czechia)

Dependent variable	Amount allocated in the Help-or-Harm task (CZK 0-200)						
Sample	Waves 1 and 2	Waves 1 and 2	Waves 1 and 2	Waves 1 and 2	Wave 1	Wave 2	Wave 1, first decision only (between-subject design)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Recipient 25-44 years old	11.19***	11.19***	11.19***	11.19***	12.81***	9.39***	23.68*
	(1.17)	(1.18)	(1.35)	(1.17)	(1.49)	(1.49)	(13.92)
Recipient 45-64 years old	22.00***	22.00***	22.00***	22.00***	23.80***	20.00***	3.43
	(1.42)	(1.42)	(1.64)	(1.42)	(1.72)	(1.76)	(15.12)
Recipient 65+ years old	32.80***	32.80***	32.80***	32.80***	32.30***	33.36***	57.76***
	(1.78)	(1.79)	(2.05)	(1.78)	(2.10)	(2.10)	(18.47)
Control variables	none	baseline	individual x wave FE	LASSO	baseline	baseline	baseline
Mean recipient 18-24 y/o	113.48	113.48	113.48	113.48	113.43	113.54	116.37
Observations	7528	7528	7528	7528	3968	3560	519

Panel B: Experiment 2 (US)

Dependent variable	Amount allocated in the Help-or-Harm task (USD 0-10)				
Sample	All	All	All	All	First decision only (between-subject design)
	(1)	(2)	(3)	(4)	(5)
Recipient 25-44 years old	0.28***	0.28***	0.28***	0.28***	0.41
	(0.06)	(0.06)	(0.06)	(0.06)	(0.60)
Recipient 45-64 years old	0.45***	0.45***	0.45***	0.45***	0.29
	(0.08)	(0.08)	(0.09)	(0.08)	(0.57)
Recipient 65+ years old	1.02***	1.02***	1.02***	1.02***	0.92
	(0.10)	(0.10)	(0.11)	(0.10)	(0.62)
Control variables	none	baseline	individual FE	LASSO	baseline
Mean recipient 18-24 years old	6.83	6.83	6.83	6.83	7.13
Observations	4,020	4,020	4,020	4,020	1,005

Notes: OLS coefficients. Estimated effects of the recipient being in the older age groups (3 dummy variables for recipient 25-44 y/o, 45-64 y/o, and 65+ y/o, respectively), relative to recipient being 18-24 years old (omitted category) on allocations in the Help-or-Harm task (HHT). In Panel A, Experiment 1 sample, CONTROL condition respondent data for Wave1 and 2 (three-week delay) are used. In Panel B, Experiment 2 sample is used. The dependent variable is the Help-or-Harm task allocation in CZK (Panel A) and USD (Panel B). Baseline control variables are defined in the Notes to Figure 4. Standard errors clustered at the respondent level in parentheses.

Table A5. Effects of the HARDSHIP treatment on support for policies (Experiment 1: Czechia)

Dependent variable	Support for policy focusing on:					
	The young (18-24)		The middle (25-64)		The old (65+)	
	mental health	financial situation	mental health	financial situation	mental health	financial situation
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Immediate effect						
HARDSHIP	4.98***	3.38***	0.25	2.20*	-1.73	1.43
	(1.20)	(1.29)	(1.14)	(1.18)	(1.10)	(1.20)
CONTROL mean	60.70	56.17	68.56	70.45	78.81	72.13
Observations	2,027	2,027	2,027	2,027	2,027	2,027
Panel B: Three-weeks effect						
HARDSHIP	0.43	0.84	1.58	1.02	0.05	-0.46
	(1.29)	(1.36)	(1.21)	(1.26)	(1.15)	(1.25)
CONTROL mean	61.44	56.40	65.91	67.91	77.60	74.10
Observations	1,837	1,837	1,837	1,837	1,837	1,837

Notes: OLS coefficients. Estimated effects of the HARDSHIP condition on support for policies. Experiment 1 sample. The dependent variables are measures of support for various policies (See Online Appendix C, Section I.4 for full wording). The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). Standard errors clustered at the respondent level in panel A, Huber–White robust standard errors in panels B and C. T-test p-values (two-sided) reported as *p<0.10; **p<0.05; ***p<0.01.

Table A6. Heterogeneity split by regional Covid-19 incidence (Experiment 1)

Dependent variable	Amount allocated in the Help-or-Harm task			
Recipient HHT	All	All	18-24 y/o	18-24 y/o
Sample	Regions with below median Covid-19 incidence	Regions with above median Covid-19 incidence	Regions with below median Covid-19 incidence	Regions with above median Covid-19 incidence
	(1)	(2)	(3)	(4)
Panel A: Effect of the relative age of a recipient (CONTROL condition)				
Recipient 25-44 years old	14.25***	8.01***		
	(1.58)	(1.54)		
	[<0.001]	[<0.001]		
Recipient 45-54 years old	23.93***	19.99***		
	(1.93)	(1.88)		
	[<0.001]	[<0.001]		
Recipient 65+ years old	34.02***	31.53***		
	(2.36)	(2.36)		
	[<0.001]	[<0.001]		
Panel B: Effect of the HARDSHIP treatment				
HARDSHIP			6.12**	5.87**
			(2.77)	(2.75)
			[0.027]	[0.033]
Control variables	baseline	baseline	baseline	baseline
Mean recipient from the same age group	141.63	145.31		
CONTROL mean			111.54	115.51
Observations	3,840	3,688	1,966	1,898

Notes: OLS coefficients. The dependent variable is the Help-or-Harm task (HHT) allocation in CZK. Experiment 1 sample, pooling data for Wave 1 and 2 (three-week delay). Panel A shows estimated effects of the recipient being relatively younger or older vs. same age as the respondent on allocations in HHT; only CONTROL condition respondent data used. Panel B shows estimated effects of the HARDSHIP treatment on allocations in the HHT for recipients in the 18-24 age category. Results are shown separately for participants from regions from below- and above-median Covid-19 incidence (7-day incidence per 100,000 population) at the start date of the given survey wave. Below-median incidence ranges between 322-583 cases, above-median between 606-943 per 100,000 population. The Covid-19 regional statistics (14 regions) are provided by the Czech Ministry of Health and available as open datasets at https://onemocneni-aktualne.mzcr.cz/api/v2/covid-19 (accessed on March 2, 2023). The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). Standard errors clustered at the respondent level. T-test p-values (two-sided) reported as *p<0.10; **p<0.05; ***p<0.01.

Online Appendix B. Supplementary survey on the prevalence of depression and anxiety

Method. In the supplementary survey, implemented before Experiment 1, we measure (i) the prevalence of the symptoms of depression and anxiety, and (ii) beliefs about the prevalence of these symptoms in the Czech population. The data serve two main purposes. First, by comparing beliefs with the true prevalence of these mental health problems, we measure the extent to which people misperceive their prevalence across the age groups. Second, we use data on the true prevalence of these problems as factual input for the HARDSHIP condition of Experiment 1, in order to causally manipulate beliefs in this domain.

Sample. The survey module focusing on symptoms of depression and anxiety was integrated into a longitudinal study "Life during the pandemic" (Prokop et al. 2021) among a sample that is broadly representative of the adult Czech population in terms of sex, age, education, region, and employment status (Table A7). Prague and municipalities with more than 50,000 inhabitants are oversampled (boost 200%). The survey was implemented by the same data collection agencies as the Experiment 1 (NMS Market Research and PAQ Research). In Experiment 1, we made sure the participants were different from those in the supplementary survey, but were sampled from the same population (participants in the Czech National Panel), to maximize comparability.

A battery of questions designed to measure symptoms of depression and anxiety was implemented during six waves of data collection between March and June 2020. In the analysis, we use the sample of 1,964 respondents who participated in all six waves. The results are very similar when we compute the prevalence of depression and anxiety among all respondents participating in each wave, and also when we weight the observations to be representative of the Czech adult population. Beliefs about the prevalence of depression and anxiety were elicited once, in September 2020 (N = 2,167).

Measuring symptoms of depression and anxiety. In each wave, we asked a battery of questions predictive of a professional diagnosis of depression and anxiety, developed by psychologists (Ridley et al. 2020). This battery includes six questions selected from the Patient Health Questionnaire depression scale (PHQ-8) (Kroenke and Spitzer 2002) and from the Generalized Anxiety Disorder scale (GAD-7) (Spitzer et al. 2006). Specifically, respondents were asked to report how often they have been bothered by the following problems over the prior two weeks: (i) trouble falling or staying asleep, or sleeping too much, (ii) feeling nervous, anxious, or on edge, (iii) experiencing poor appetite or overeating, (iv) feeling tired or having little energy, (v) having little interest or pleasure in doing things, (vi) becoming easily annoyed or irritable. For each question respondents could choose one of four possible answers: not at all (0 points), several days (1 point), more than half of the days (2 points), nearly every day (3 points); for the full wording, see the Online Appendix C, Section III.1. We construct an index of depression and anxiety symptoms by taking the sum of the points in all six questions, which ranges between 0 and 18 points. Our main variable of interest is a dummy variable equal to one if a respondent scored at least 8 points in this index, indicating moderately severe or severe symptoms of depression or anxiety.

All six waves of this data collection took place during the Covid-19 pandemic. To obtain a measure of the prevalence of depression and anxiety before the pandemic started, we asked the respondents to answer the battery of six questions retrospectively, i.e., to report how much the problems described bothered them during two weeks preceding the outbreak of the pandemic in the Czech Republic, i.e., three months before they answered these questions. Based on their responses, 6% of the respondents suffered from moderately severe or severe symptoms of depression or anxiety before the pandemic. This estimate obtained by using retrospective questions is consistent with other pre-pandemic surveys implemented on different samples, e.g., with data from the Institute for Health Metrics and Evaluation, which indicates a presence of these symptoms among 7-8% of the population of the Czech Republic in 2016.

Beliefs about the prevalence of depression and anxiety. In order to elicit quantitative point beliefs, we asked the respondents to provide their best estimate of the prevalence of people with symptoms of at least moderate depression or anxiety in March 2020 (the first wave of the Covid-19 pandemic) for four groups: the population as a whole, young people (18-24 years old), middle-aged (25-64) and seniors (65+). As a benchmark, we informed the participants of the prevalence of the symptoms among the whole adult population before the pandemic started (6%). Providing such an anchor can reduce measurement error. The belief elicitation was not incentivized, in part because previous research has documented that incentives have little effect on stated beliefs other than in political domains (Haaland, Roth, and Wohlfart 2022).

There are several reasons we decided to measure beliefs among a different sample of participants than those who participated in the information provision experiment (Experiment 1). First, our aim was to avoid creating a feeling of being tested because we wanted to evaluate the effect of a simple information on behavior in a similar fashion that might eventually be used in practice at larger scales. The survey was designed to create a natural-looking environment resembling a real-world situation in which people receive simple information and then make decisions, without being asked questions about their prior beliefs about facts or statistics that are later revealed in the treatment. Similarly, asking the participants in Experiment 1 about their prior or posterior beliefs might draw excessive attention to the topic, thus potentially increasing the risk of experimenter demand effect. Finally, because we elicit beliefs about depression and anxiety for various age groups, the task might increase cognitive strain and survey fatigue, which can in turn induce measurement error.

A disadvantage of measuring prior beliefs on a different sample is that a researcher cannot estimate heterogeneous treatment effects by prior beliefs. Such analysis is informative especially when different groups of respondents updated their beliefs in opposite directions, e.g., if some originally underestimated and others overestimated the true share of young adults with depression and anxiety. In such a case, the effect of the intervention might go in opposite directions for these two groups, and the observed average effect would be muted. However, we knew before implementing Experiment 1 that this was unlikely to be the case in the population we study, because a vast majority of respondents (95%) underestimated the share of young adults with symptoms of depression and anxiety, as we document below.

Results. We start by describing the actual prevalence of symptoms of depression and anxiety across different age groups, as measured among the respondents to the longitudinal survey "Life during the pandemic" (N = 1,964) conducted in Czechia. As our main measure of interest, we identify the share of respondents reporting moderately severe or severe symptoms of depression or anxiety (denoted as "symptoms of depression or anxiety" or as "symptoms of DA"), based on an index constructed from answers to a battery of six questions described above. Around 6% of all respondents had symptoms of depression or anxiety before the Covid-19 crisis; the prevalence of these symptoms more than tripled to 20% during the first wave of the pandemic (Bartoš et al. 2020). Reassuringly, we find several intuitive relationships: the measured symptoms of DA are positively correlated with being a single parent (0.06, p-value = 0.007) and with having recently experienced a large fall in income (0.17, p-value < 0.001).

Importantly, we find substantial and robust heterogeneity in the prevalence and severity of symptoms of DA across age groups. Panel A of Figure A10 shows that the youngest cohorts were substantially more likely to suffer from depression and anxiety both before and during the Covid-19 crisis than other age groups. For young adults, the prevalence of symptoms was 12% before the pandemic, increased to 36% roughly one month after the start of the pandemic (March 2020), and decreased to around 22% three months later (June 2020). Throughout the period, the prevalence of symptoms of DA among other age groups was roughly half of the levels observed for young adults: in March 2020, it was 36% for 18-24 y/o, 19% for 25-44 y/o, 21% for 45-64 y/o and 13% for seniors 65+. The corresponding numbers for June 2020 were 22%, 9%, 10% and 7%. We reach similar conclusions when, instead of using the cutoff to create a dummy variable indicating serious symptoms of DA, we use an index constructed by taking the sum of points in all questions, reflecting how often respondents suffer from various types of problems, which takes values 0-18. This index is also systematically higher for young adults than others (Panel B of Figure A10). The age differences are also apparent when we

analyze the responses to questions designed to detect symptoms of depression and anxiety separately (Panels C and D).

Next, we show that most respondents are unaware of age-based inequality in the prevalence of symptoms of DA, and they systematically underestimate the prevalence of depression and anxiety among young adults. Beliefs about the average prevalence of these problems in the overall adult population are quite accurate—respondents estimated that, at the end of March 2020, the overall prevalence of symptoms of DA was 22.15%, which is broadly in line with their actual prevalence (19.8%). However, people hold inaccurate beliefs about which age groups were more or less affected (Figure A11). Participants generally expect the oldest group to suffer the most and the youngest group to suffer the least. Respondents heavily underestimate the prevalence of symptoms of DA among young adults, believing that only 11% suffered, while the actual number is 36%. Put differently, 95% of respondents underestimated the prevalence of depression and anxiety for this group (Table A8). In contrast, respondents overestimate the prevalence of symptoms of DA among seniors, believing that 28% suffered, while the actual share was 13%. Their beliefs are relatively accurate for the two middle groups. To summarize, participants believe that the prevalence of symptoms of depression and anxiety strongly increases with age, though the opposite is in fact true.

Underestimation of depression and anxiety among young adults is widespread across various demographic groups. Using the detailed background data, in Table A9 we divide the sample into 49 sub-groups, based on age, gender, education, income, economic status, and geographical regions. The underestimation of depression and anxiety among young adults is present for at least 90% of subjects in virtually all of the sub-groups we analyze, with only four exceptions, including young adults themselves. For this group, the prevalence of underestimation is still high (84%), but lower than the average, in line with intuition.

In summary, using longitudinal data with a well-established module monitoring symptoms of depression and anxiety, we find that young adults are around twice as likely to suffer from this form of hardship. Next, we document that a vast majority of subjects across various demographic groups are not aware of this health inequality, believing that young adults are the least likely to suffer from symptoms of DA. In the next section, we test whether diffusing accurate information affects social preferences towards young adults.

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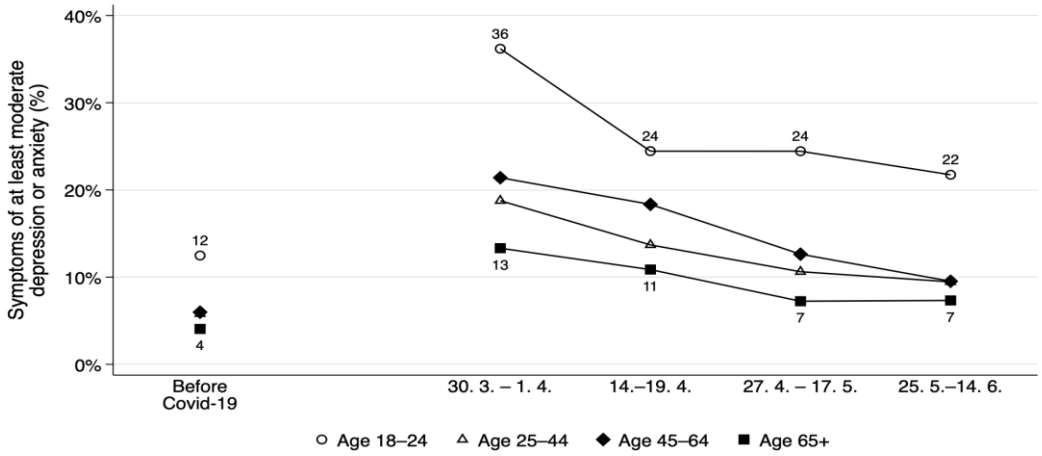
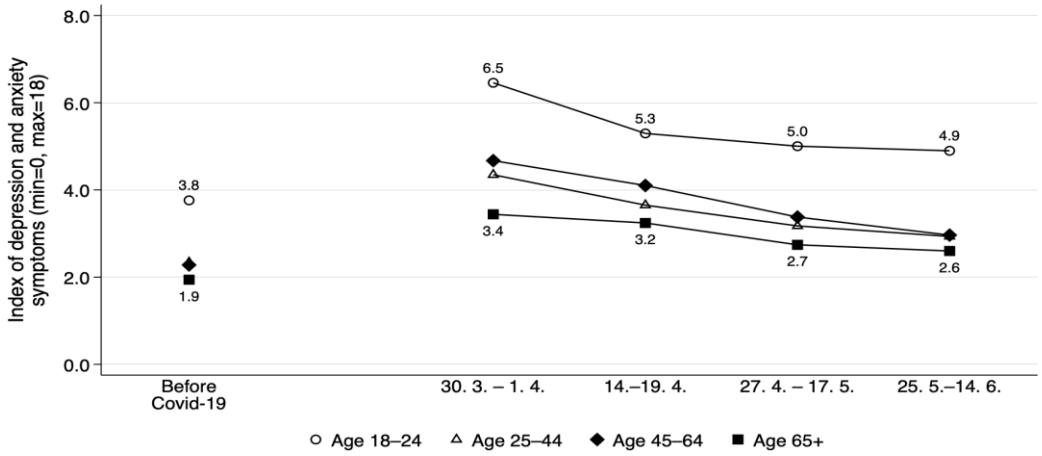
Figure A10. Symptoms of depression and anxiety by age group (Supplementary survey: Czechia)

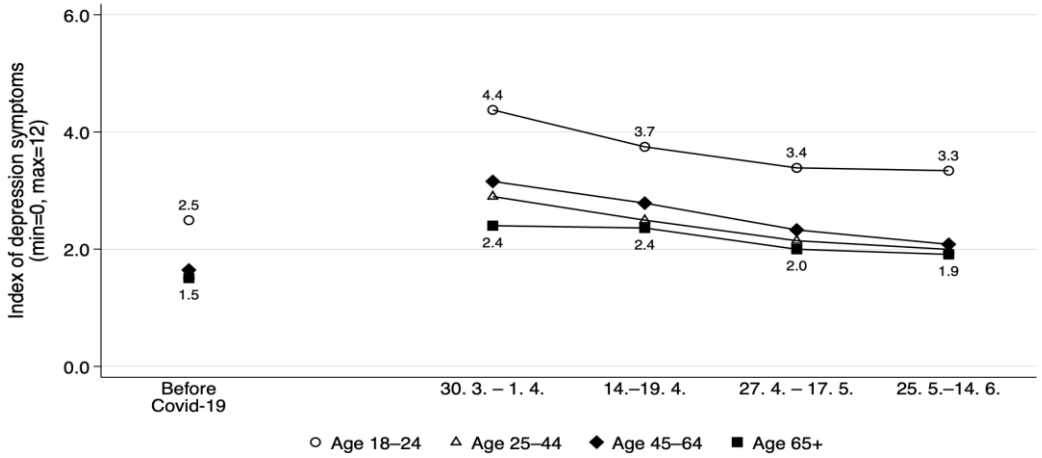
Panel A: Symptoms of at least moderate depression or anxiety (index>=8)



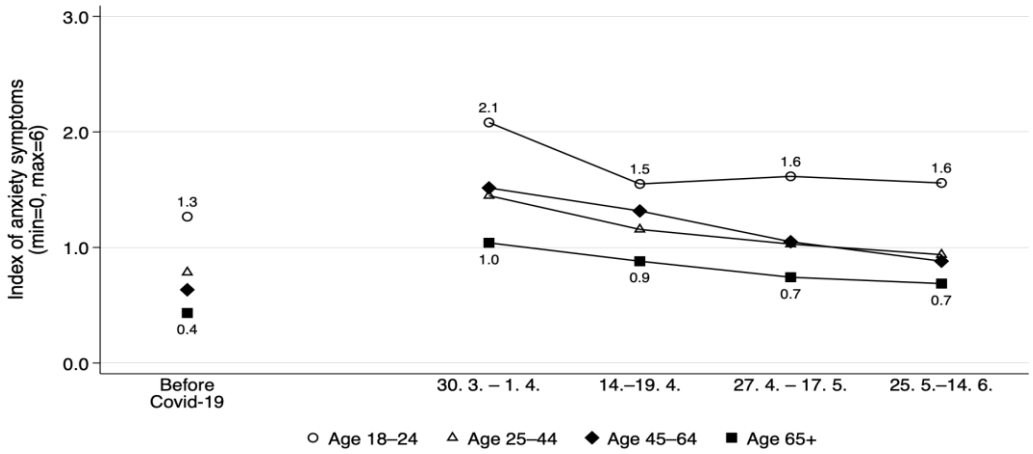
Panel B: Index of depression and anxiety symptoms (min=0, max=18)



Panel C: Index of depression symptoms (min=0, max=12)

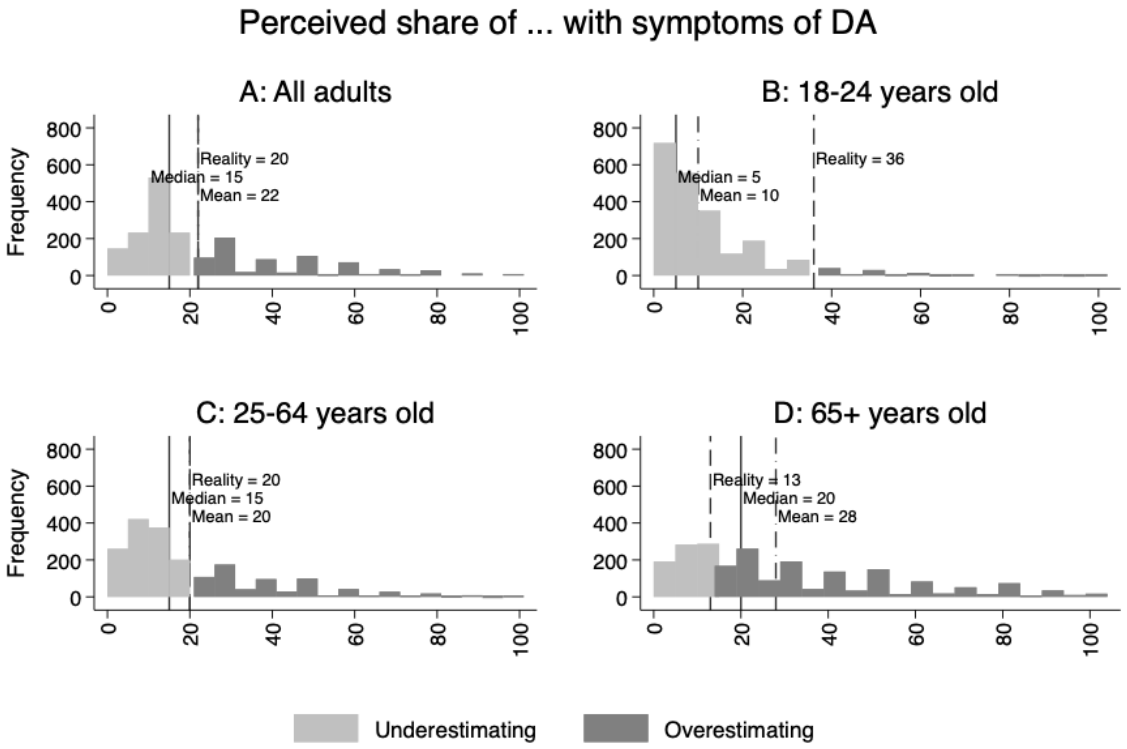


Panel D: Index of anxiety symptoms (min=0, max=6)



Notes: Means. Index of depression and anxiety symptoms is calculated based on a subset of questions from the PHQ-8 and GAD-7 scales. The respondents were asked to report how often they have been bothered by the following problems over the last two weeks: (i) trouble falling or staying asleep, or sleeping too much, (ii) feeling nervous, anxious or on edge, (iii) poor appetite or overeating, (iv) feeling tired or having little energy, (v) little interest or pleasure in doing things, (vi) becoming easily annoyed or irritable. For each question they could choose from four possible answers: not at all (0 points), several days (1 point), more than half the days (2 points), nearly every day (3 points) (for the full wording, see Online Appendix C Section III.1). We construct an index of depression and anxiety symptoms by taking the sum of the points in all six questions, which ranges between 0 and 18 points. In Panel A, our main variable of interest is a dummy variable equal to one if a respondent scored at least 8 points in this index, indicating moderately severe or severe symptoms of depression or anxiety. Panel B reports data for the full index. Panels C and D report data separately for symptoms of depression and anxiety, respectively.

Figure A11. Perceptions of the share of people with symptoms of depression and anxiety (DA). Supplementary survey (Czechia)



Notes: Perceived share of people of different age groups with symptoms of depression and anxiety (DA). Sample from the Supplementary survey; beliefs were elicited in September 2020. Distribution of the prior beliefs of respondents about what percentage of people suffer from symptoms of DA during the first wave of the Covid-19 pandemic. Panel A reports beliefs about the whole adult population, while panels B-D report beliefs about the population in a specific age-range. The light and dark grey colours show the percentage of respondents who underestimate and overestimate the actual prevalence of symptoms of DA, respectively.

Table A7. Supplementary survey on mental health (Czechia): Summary statistics as of September 2020.

	(1) Sample mean	(2) Sample mean (weighted)	(3) Czech population	(4) diff. (2) vs. (3)
Female	0.51	0.52	0.51	0.01
Age	51.97	49.17		
Age category				
age cat 18-24	0.05	0.08	0.08	0.00
age cat 25-34	0.12	0.15	0.16	-0.01
age cat 35-44	0.17	0.19	0.2	-0.01
age cat 45-54	0.19	0.18	0.17	0.01
age cat 55-64	0.18	0.16	0.15	0.01
age cat 65+	0.29	0.25	0.24	0.01
Region				
Prague	0.28	0.13	0.12	0.01
Central Bohemia	0.09	0.14	0.13	0.01
South Bohemia	0.04	0.06	0.06	0.00
Plzeň	0.04	0.05	0.06	-0.02
Karlovy Vary	0.02	0.03	0.03	0.00
Ústí	0.07	0.07	0.08	-0.01
Liberec	0.04	0.04	0.04	0.00
Hradec Králové	0.05	0.06	0.05	0.01
Pardubice	0.04	0.05	0.05	0.00
Vysočina	0.04	0.06	0.05	0.01
South Moravia	0.09	0.10	0.11	-0.01
Olomouc	0.05	0.06	0.06	0.00
Zlín	0.05	0.06	0.06	0.00
Moravia-Silesia	0.11	0.11	0.12	-0.02
Municipality size				
Below 999	0.07	0.16	0.17	-0.01
1,000-1,999	0.03	0.09	0.1	-0.01
2,000-4,999	0.06	0.10	0.11	-0.01
5,000-1,9999	0.12	0.18	0.18	0.00
2,0000-4,9999	0.08	0.13	0.12	0.01
5,0000-9,9999	0.18	0.11	0.1	0.01
Above 100,000	0.47	0.23	0.22	0.01
Education				
primary	0.05	0.10	0.11	-0.01
lower secondary	0.28	0.35	0.34	0.01
upper secondary	0.36	0.34	0.35	-0.01
university	0.31	0.21	0.2	0.01
Economic status				
Employee	0.49	0.47	0.48	-0.01
Enterpreneur	0.05	0.08	0.10	-0.02
Unemployed	0.04	0.04	0.03	0.01

Retired	0.33	0.30	0.30	0.00
Student	0.04	0.05	0.06	-0.01
Parental leave or other	0.06	0.06	0.05	0.01
Household size				
Number of children	2.37	2.51		
Household income	0.39	0.43		
Up to 10,000 CZK	0.02	0.02		
10,001 - 15,000 CZK	0.08	0.09		
15,001 - 20,000 CZK	0.08	0.07		
20,001 - 25,000 CZK	0.08	0.09		
25,001 - 30,000 CZK	0.12	0.12		
30,001 - 35,000 CZK	0.10	0.10		
35,001 - 40,000 CZK	0.10	0.11		
40,001 - 50,000 CZK	0.13	0.12		
50,001 - 60,000 CZK	0.09	0.08		
Over 60,000 CZK	0.08	0.07		
I don't know / Don't want to say	0.12	0.14		
Observations	2167	2167		

Notes: Sample means for the supplementary survey in Columns 1. The sample is representative of the Czech population 18+ in terms of sex, age, education, region, municipality size, employment status before the Covid-19 pandemic, age x sex, age x education. Prague and municipalities above 50,000 are oversampled (boost 200%). Column 2 reports weighted sample means that correct for the oversampling. Column 3 reports means for the Czech population for the variables based on which the sample is benchmarked (this excludes exact age, household size, number of children, and household income). Simple differences between Columns 2 and 3 are presented in Column 4.

Table A8. Perceptions of the share of people with symptoms of depression and anxiety (DA) (Supplementary survey: Czechia)

		Sample				
		All	18-24 years old	25-44 years old	45-64 years old	65+ years old
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Share of people with symptoms of depression and anxiety (DA) among…						
	Real	**Perceived**				
… whole population	19.8	22.2	27.1	22.4	22.6	20.5
... age 18-24	36.2	10.7	17.9	12.1	10.4	8.5
... age 25-64	20.1	19.9	24.7	20.3	20.9	17.6
… age 65+	13.3	28.2	29.4	27.2	28.8	28.1
Panel B: Misperceptions about prevalence of people with symptoms of DA among …						
… whole population		2.4	7.3	2.6	2.8	0.7
... age 18-24		-25.5	-18.3	-24.1	-25.8	-27.7
... age 25-64		-0.1	4.6	0.2	0.8	-2.5
… age 65+		14.9	16.1	13.8	15.5	14.8
Panel C: Share of those underestimating prevalence of DA among …						
… whole population		0.53	0.49	0.51	0.51	0.56
... age 18-24		0.95	0.84	0.94	0.95	0.97
... age 25-64		0.69	0.56	0.68	0.69	0.72
… age 65+		0.35	0.32	0.37	0.36	0.33
Panel D: Share of those overestimating prevalence of DA among …						
… whole population		0.47	0.51	0.49	0.49	0.44
... age 18-24		0.05	0.16	0.06	0.05	0.03
... age 25-64		0.31	0.44	0.32	0.31	0.28
… age 65+		0.65	0.68	0.63	0.64	0.67
Observations		2167	114	623	792	638

Notes: Column 1 reports actual prevalence of at least moderately severe symptoms of DA in the supplementary survey sample. Columns 2-6 report beliefs. Supplementary survey data sample used, subgroups by respondent age in Columns 3-6. Panel A report mean values. Panel B reports difference between beliefs and true prevalence of symptoms. Panels C and D report share of respondents under- and overestimating the prevalence of DA.

Table A9. Perceptions of the share of people with symptoms of depression and anxiety (DA): Heterogeneity across sub-groups (Supplementary survey: Czechia)

	Misperceptions of DA prevalance for the given age category				
	Age 18-24		Age 65+		
	Share underestimating DA prevalance	Share overestimating DA prevalance	Share underestimating DA prevalance	Share overestimating DA prevalance	Observations
All	0.95	0.05	0.35	0.65	2,167
male	0.96	0.04	0.40	0.60	1,072
female	0.93	0.07	0.31	0.69	1,095
Age category					
age 18-24	0.84	0.16	0.32	0.68	114
age 25-34	0.94	0.06	0.40	0.60	254
age 35-44	0.94	0.06	0.36	0.64	369
age 45-54	0.96	0.04	0.38	0.62	405
age 55-64	0.94	0.06	0.35	0.65	387
age 65+	0.97	0.03	0.33	0.67	638
Region					
Prague	0.96	0.04	0.36	0.64	601
Central Bohemia	0.94	0.06	0.38	0.62	197
South Bohemia	0.94	0.06	0.31	0.69	94
Plzeň	0.96	0.04	0.36	0.64	96
Karlovy Vary	0.85	0.15	0.25	0.75	40
Ústí	0.94	0.06	0.40	0.60	144
Liberec	0.89	0.11	0.26	0.74	85
Hradec Králové	0.98	0.02	0.39	0.61	98
Pardubice	0.98	0.02	0.34	0.66	91
Vysočina	0.92	0.08	0.31	0.69	85
South Moravia	0.95	0.05	0.39	0.61	201
Olomouc	0.94	0.06	0.40	0.60	105
Zlín	0.93	0.07	0.28	0.72	100
Moravia-Silesia	0.94	0.06	0.35	0.65	230
Town size					
Below 999	0.96	0.04	0.36	0.64	143
1,000-1,999	0.91	0.09	0.31	0.69	74
2,000-4,999	0.91	0.09	0.33	0.67	129
5,000-19,999	0.94	0.06	0.36	0.64	252
20,000-49,999	0.93	0.07	0.31	0.69	164
50,000-99,999	0.96	0.04	0.38	0.62	386
Above 100,000	0.95	0.05	0.36	0.64	1,019
Education					
primary	0.83	0.17	0.28	0.72	113
lower secondary	0.92	0.08	0.35	0.65	612
upper secondary	0.96	0.04	0.37	0.63	772
university	0.97	0.03	0.35	0.65	670
Economic status					
Employee	0.95	0.05	0.38	0.62	1,055

Enterpreneur	0.98	0.02	0.30	0.70	99
Student	0.86	0.14	0.31	0.69	86
Parental leave	0.93	0.07	0.38	0.62	95
Retired	0.96	0.04	0.33	0.67	722
Unemployed	0.86	0.14	0.30	0.70	76
Other	0.94	0.06	0.35	0.65	34
Household income					
Up to 10,000 CZK	0.91	0.09	0.37	0.63	35
10,001 - 15,000 CZK	0.91	0.09	0.28	0.72	174
15,001 - 20,000 CZK	0.95	0.05	0.32	0.68	171
20,001 - 25,000 CZK	0.94	0.06	0.33	0.67	178
25,001 - 30,000 CZK	0.93	0.07	0.34	0.66	259
30,001 - 35,000 CZK	0.95	0.05	0.39	0.61	224
35,001 - 40,000 CZK	0.97	0.03	0.32	0.68	226
40,001 - 50,000 CZK	0.96	0.04	0.39	0.61	274
50,001 - 60,000 CZK	0.97	0.03	0.38	0.62	190
Over 60,000 CZK	0.98	0.02	0.43	0.57	170
I don't know / Don't want to say	0.92	0.08	0.35	0.65	266
Minimum among all groups	0.83	0.02	0.25	0.57	
Maximum among all groups	0.98	0.17	0.43	0.75	

Notes: Means. Supplementary survey data sample used.

Online Appendix C. Effects of information provision about hardship: Additional information

Information intervention. The information-provision experiment was conducted within Experiment 1 (Czechia, October-November 2020). The participants were randomly allocated to either the HARDSHIP (n=1,035) or the CONTROL (n=992) condition in Wave 1. In the HARDSHIP condition, they were given actual information about the prevalence of symptoms of depression and anxiety among the Czech adult population in a short description accompanied by graphically represented statistical facts, based on measures from the supplementary longitudinal survey of Czech adults, described in greater detail in Online Appendix B. To increase the credibility of the information, the respondents in the HARDSHIP condition were offered access to a hyperlink to the research study from which the graph was taken. About a half (46%) of the respondents expressed interest and were sent the link after the survey ended, indicating relatively high levels of genuine interest in the information. In the CONTROL condition, participants did not receive any information about the mental health survey. The rest of the survey was identical for the HARDSHIP and the CONTROL conditions. The full wording of the experimental protocol is available in the Online Appendix D.

We do not observe systematic differences across HARDSHIP and CONTROL conditions in terms of observable characteristics, indicating that randomization was successful (Table A1). In terms of attrition, the participation rate in Wave 2 is high (90.6%) and does not differ across conditions (Table A10). We also find no evidence of differential attrition by baseline covariates, suggesting that different types of individuals were not participating in the HARDSHIP and CONTROL conditions in Wave 2.

We did not measure prior beliefs on the prevalence of depression and anxiety in the different age-groups. However, the vast majority of respondents (95%) from a similar representative sample of the Czech population underestimated the share of young adults with mental health problems (Online Appendix B). Measuring prior beliefs is informative especially when different groups of respondents updated their beliefs in opposite directions. In such a case, the effect of the intervention might go in opposite directions for these two groups, and the observed average effect would be muted. Here, almost all respondents should update in the direction of young adults facing more mental health problems than what they originally expected.

Outcomes: social behavior, policy support. Our main goal is to estimate whether the HARDSHIP condition affected social preferences, especially towards young adults, as measured in the allocation tasks (HHT). In addition, we also test the effects on support for governmental policies aiming to improve mental health and personal financial situations. First, we asked respondents to report how much they think the government should support and invest into services focusing on mental health, such as phone crisis hotlines and mental health specialists, focusing on (i) young people (18-24 years old), (ii) middle-aged people (25-64), and (iii) seniors (65+). Second, to gauge whether the effects of the intervention are specific for policies on mental health or whether they are more general, we asked how much financial support the government should provide for people from the three age groups. Respondents reported their answers to the six questions on a 0-100 scale. Both types of outcomes – choices in HHT and policy support – were collected twice, once on the day when the intervention took place (Wave 1) and again in a follow-up wave three weeks later (Wave 2).

Results. We find that the HARDSHIP condition robustly increases allocations to young adults and the effect is lasting (Table 3, Columns 1-2). In Wave 1, HARDSHIP condition increases the allocations by CZK 6.0 (p-value = 0.017), from CZK 113.43 in the CONTROL condition, and by CZK 6.1 when measured with a three-week delay (p-value = 0.013). Further, the point estimates are robust to adjusting p-values for multiple hypothesis testing (Panel A of Table A11), to using various regression specifications, with different sets of control variables, and to using a set of variables selected by a two-stage LASSO procedure (Figure A12 and Table A12). The treatment effects are quite similar across gender, income, age of the respondent, and whether the respondent himself/herself had had symptoms

of depression and anxiety (Figure A13). The effects on behavior are somewhat larger for decision-makers with a university degree than for those with a lower level of education.

Next, we estimate the treatment effects on the reported level of support for governmental policies aiming to increase access to mental health services and policies aiming to improve the financial situation of young adults. We find positive effects on both types of policy support immediately after the information intervention in Wave 1 (Panel A of Table 3, Columns 3-6). Nevertheless, the point estimates remain positive, but are small and not statistically significant when policy support is measured three weeks after the treatment (Panel B), suggesting the effects on policy support do not persist.

How does the information treatment affect behavior towards recipients from the older groups, i.e., groups for which people do not underestimate the prevalence of mental health hardship? We find that the effects of the HARDSHIP condition are still positive, but the point estimates generally decrease with the age of the recipient and are only significant for the second youngest age-group: the treatment increases allocations by 4.95 CZK for recipients who are 25-44 y/o (p-value = 0.036), by 2.13 for recipients 45-64 y/o (p-value = 0.346), and by 1.13 CZK for recipients who are 65+ y/o (p-value = 0.644). In terms of support for policies helping middle-aged individuals and seniors, we do not detect any meaningful effects (Table A5).

In Table A11, we test whether the effects of HARDSHIP on behavior for young adults are statistically significantly different from the effects on outcomes targeting older age groups (F-tests in the bottom Panel). We find that the treatment effects on behavior towards young adults are larger than on behavior towards seniors (p-value = 0.08) and older middle group (p-value = 0.09), but not when compared to the effects on behavior towards the younger middle group (p-value = 0.60). The patterns suggest that participants remembered the age range of the group most affected by mental health problems in a relatively coarse way, and allocated more not only to the youngest group (18-24) but also to the second youngest group (25-44). This interpretation is consistent with the observed dynamics of the age gradient of the treatment effects, which is somewhat larger when estimated shortly after the information provision, when people were likely more able to recall differences in depression and anxiety across age categories, than when the effects are estimated with the three-week delay when the point estimates are more similar across age groups (Table A11), in line with models of limited memory (Mullainathan 2002).

Interestingly, the observation that the information provided did not reduce allocations to seniors, although this is the group for which people overestimated the extent of mental health hardship, indicates that a reduction in perceived mental hardship faced by seniors does not reduce empathy towards them.

Potential concerns. Next, we consider whether the observed treatment effects could be explained by experimenter-demand effects or priming effects, perhaps due to a greater salience of mental health problems in general or to the COVID-19 crisis, rather than due to learning about the hardship faced by young adults.[1] Several patterns suggest that priming and experimenter demand are unlikely to explain our findings. First, we find that the effects of HARDSHIP on social behavior are not temporary. Exogenously adding more questions between treatment and choices in allocation tasks in the first wave has little effect on the estimated treatment effects (Table A13). More importantly, we show that the effects on social behavior hold three weeks after the intervention, well beyond the time when any contextual factors are thought to play a role. Second, the observation that the treatment effects are driven primarily by those participants in the HARDSHIP condition who expressed genuine interest in the information provided by requesting a link to a study that contains more information after the end of the data collection, provides further support for the interpretation that the effects are driven by belief-updating based on the information provided. In contrast, if the effects were driven by experimenter demand or priming, there would be no reason to expect this pattern. Specifically, we find that the difference in allocations to young adults between individuals in the treatment group who did not express

[1] To balance the salience of the topic of the COVID-19 pandemic, we ask questions related to COVID-19 vaccinations in both HARDSHIP and CONTROL questions prior to eliciting the outcomes. See Appendix D for the wording.

interest in accessing the study (54% of those treated) and those in the CONTROL condition was negligible (CZK 0.34, p-value = 0.909), while people in the treatment group who were interested in accessing the study (46% of those treated) allocated significantly more (CZK 11.77) than did the participants in CONTROL (p-value < 0.001).[2] Finally, the treatment effects are larger on social behavior and support for policies specifically targeting young adults, i.e., the group most affected by the communicated form of hardship, and the group for which people tend to underestimate the prevalence of depression and anxiety, again in line with the interpretation that belief-updating caused the shift in social behavior. Moreover, recent experimental evidence suggests that demand effects in experiments are typically small or non-existent (De Quidt, Haushofer, and Roth 2018).

Summary. Correcting beliefs of Czech participants about the true prevalence of hardship faced by young adults leads to increased rewards in the allocation task and temporarily increases stated support for policies aimed at this age group, potentially due to increased empathy towards this group. This positive effect is not accompanied by a negative effect on the group of recipients from the senior age group. This documents that stereotypes about the ease of lives of young adults is one of the contributing factors of lower pro-sociality faced by young adults

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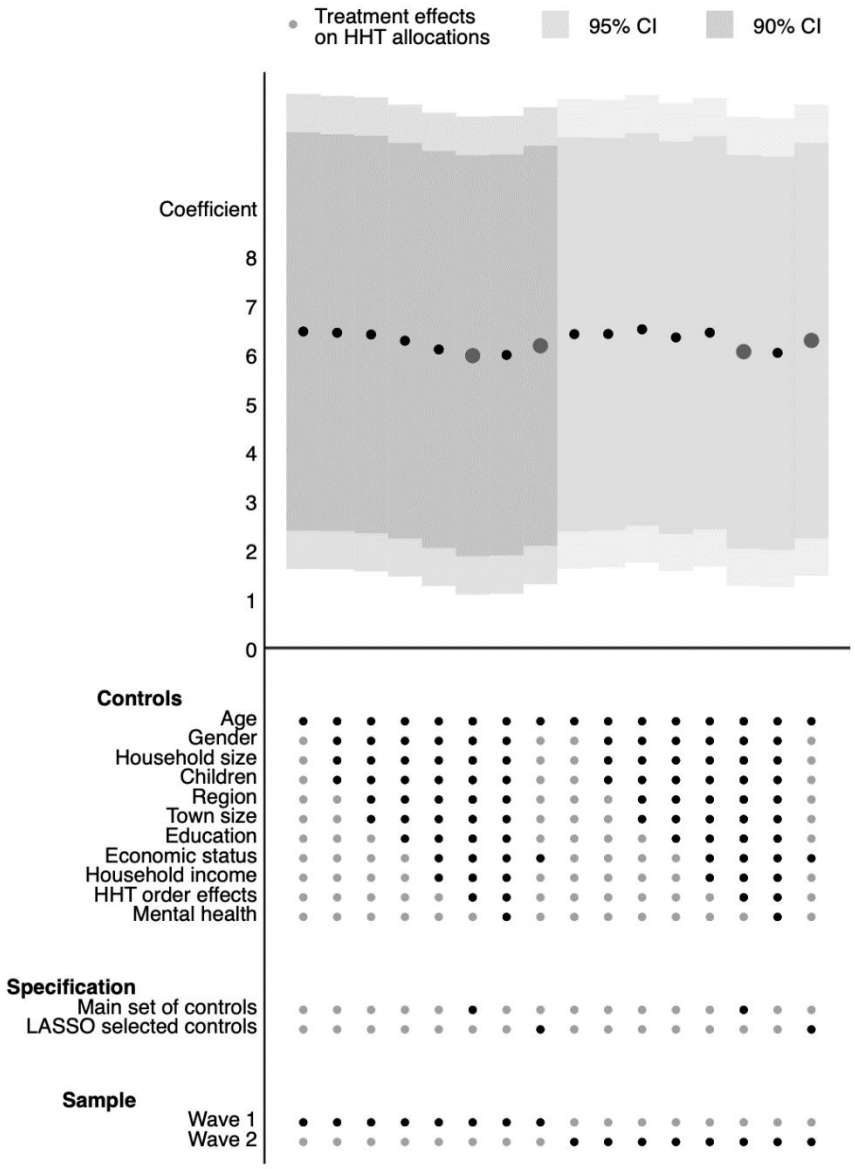
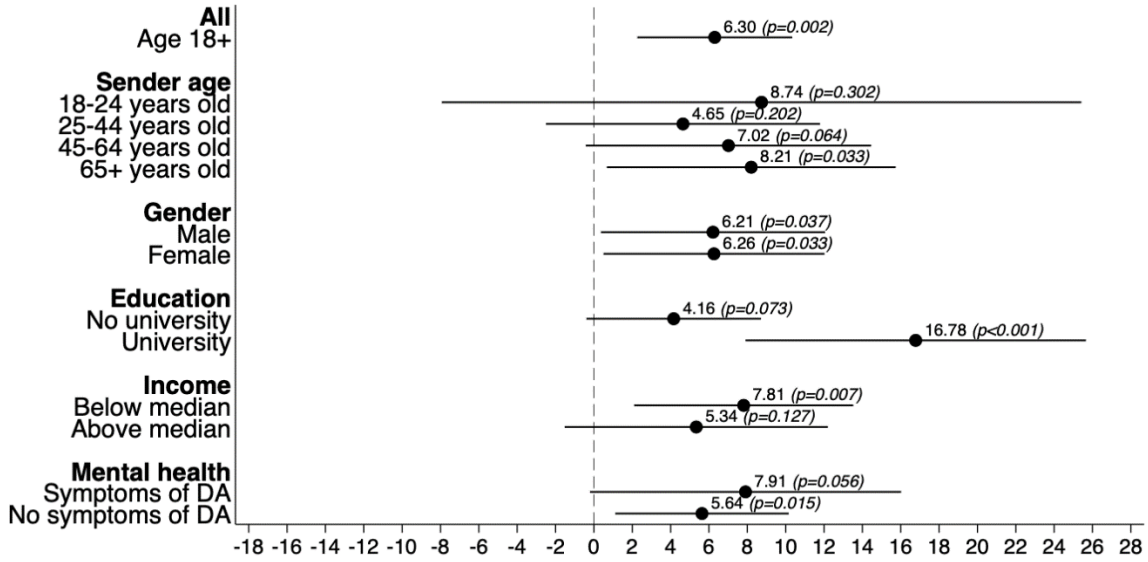
[2] Notice that such comparison is only suggestive due to selection issues. On the other hand, the treatment effects on social behavior cannot be due to the additional information contained in the report, beyond the information provided in HARDSHIP, because the link to this study was given to participants only after the end of Experiment 1.

Figure A12. Effects of the HARDSHIP treatment on allocations to young adults: Robustness checks (Experiment 1: Czechia)



Notes: Experiment 1 sample, wave-specific subsamples identified in the figure. This specification chart plots the estimated effects of HARDSHIP condition on allocations in the Help-or-Harm task (in CZK). Markers show the estimated effects, the darker or lighter whiskers denote the 90% or 95% confidence interval, respectively, based on Huber–White robust standard errors. We report a range of OLS model specifications by sequentially adding sets of control variables from the full list as in Figure 4 (Panel A: Czechia sample). The main specifications are marked by larger-sized circles. Table A12 shows the regression results in detail.

Figure A13. Effects of the HARDSHIP treatment on allocations to young adults: Heterogeneity across sub-groups (Experiment 1: Czechia)



Notes: Experiment 1 sample, we report estimates by respective respondent characteristics indicated in the figure. This specification chart plots the estimated effects of HARDSHIP condition on allocations in the Help-or-Harm task. The dependent variable is Help-or-Harm task allocation in CZK. The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). The whiskers denote the 95% confidence interval based on standard errors clustered at the respondent level. The estimated effects and Student's t-test (two-sided) p-values are reported in the figure.

Table A10. Respondent attrition (Experiment 1: Czechia)

	(1)
Dependent variable	No attrition
HARDSHIP	0.02
	(0.01)
CONTROL mean	0.90
Observations	2,027
Omnibus test for a joint effect of interaction terms of HARDSHIP with a set of controls	
P-value	0.39

Notes: OLS coefficients. Experiment 1 Wave 1 sample. Huber-White robust standard errors in parentheses. The dependent variable is an indicator for whether a respondent participated in Wave 2 (three-week delay). T-test p-values (two-sided) reported as *p<0.10; **p<0.05; ***p<0.01. The omnibus randomization test of joint significance presents a p-value of an F-test (two-sided) for joint significance of a sum of coefficients for the HARDSHIP condition and of all interactions of control variables as in Figure 4 (Panel A: Czechia sample) with HARDSHIP condition in an OLS regression, with participation Wave 2 as a dependent variable and HARDSHIP, the set of controls, and interaction terms of HARDSHIP and the set of controls as independent variables.

Table A11. Effects of the HARDSHIP treatment on allocations in the Help-or-Harm task: Regression results (Experiment 1: Czechia)

	(1)	(2)	(3)	(4)
Recipient	18-24 y/o	25-44 y/o	44-64 y/o	65+ y/o
Panel A: Immediate effect				
HARDSHIP	5.98**	4.95**	2.13	1.13
	(2.49)	(2.36)	(2.25)	(2.45)
p-value	[0.017]	[0.036]	[0.346]	[0.644]
p-value (MHT)	{0.053}	{0.083}	{0.535}	{0.644)
Control variables	baseline	baseline	baseline	baseline
CONTROL mean	113.43	126.24	137.23	145.73
Observations	2,027	2,027	2,027	2,027
Panel B: Three-weeks effect				
HARDSHIP	6.06**	6.67***	4.47*	3.75
	(2.44)	(2.41)	(2.32)	(2.45)
p-value	[0.013]	[0.006]	[0.054]	[0.126]
p-value (MHT)	{0.033}	{0.019}	{0.098}	{0.124}
Control variables	baseline	baseline	baseline	baseline
CONTROL mean	113.54	122.93	133.54	146.89
Observations	1,837	1,837	1,837	1,837
Test of equality of coefficients (F-test p-value)				
Immediate effect		0.60	0.09	0.08
Three-week effect		0.76	0.49	0.40

Notes: OLS coefficients. Estimated effects of the HARDSHIP condition on allocations in the Help-or-Harm task. Experiment 1 sample, Wave 1 data used in Panel A, and Wave 2 data used in Panel B. The dependent variable is Help-or-Harm task allocation in CZK. The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). Huber–White robust standard errors reported. P-values reported in square brackets. We also report multiple hypothesis testing corrected p-values in curly brackets using a method developed by Barsbai et al. (2020). The method extends the procedure of List et al. (2019) by allowing for correction in multivariate regression models. We adjust for 4 hypotheses corresponding to the dependent variables in Columns 1 to 4. T-test p-values (two-sided) reported as *p<0.10; **p<0.05; ***p<0.01. Rows in the last panel titled "Test of equality of coefficients (F-test p-value)" report a p-value for a test of equivalence of coefficients across two respective models (18-24 y/o vs. respective column) estimated using seemingly unrelated regressions (*suest* command in Stata 17).

Table A12. Effects of the HARDSHIP treatment on allocations to young adults: Robustness checks (Experiment 1: Czechia)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Help-or-harm task transfer (CZK)							
Panel A: Immediate effect								
HARDSHIP	6.47***	6.44***	6.41***	6.28**	6.10**	5.98**	5.99**	6.18**
	(2.48)	(2.47)	(2.47)	(2.46)	(2.47)	(2.49)	(2.49)	(2.48)
CONTROL mean	113.43	113.43	113.43	113.43	113.43	113.43	113.43	113.43
Observations	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027
Panel B: Three-week effect								
HARDSHIP	6.42***	6.42***	6.51***	6.35***	6.45***	6.06**	6.03**	6.29**
	(2.45)	(2.44)	(2.44)	(2.44)	(2.44)	(2.44)	(2.44)	(2.45)
CONTROL mean	113.53	113.53	113.53	113.53	113.53	113.53	113.53	113.53
Observations	1,837	1,837	1,837	1,837	1,837	1,837	1,837	1,837
Controls								
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household size	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Children	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Townsize	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Education	No	No	No	Yes	Yes	Yes	Yes	Yes
Economic status	No	No	No	No	Yes	Yes	Yes	Yes
Household income	No	No	No	No	Yes	Yes	Yes	Yes
HHT order effects	No	No	No	No	No	Yes	Yes	Yes
Mental health	No	No	No	No	No	No	Yes	Yes
LASSO specification	No	No	No	No	No	No	No	Yes

Notes: OLS coefficients. Estimated effects of the HARDSHIP condition on allocations to recipients 18-24 y/o in the Help-or-Harm task. Experiment 1 sample, Wave 1 data used in Panel A, and Wave 2 data used in Panel B. The dependent variable is Help-or-Harm task allocation in CZK. We report a range of linear probability model specifications by sequentially adding sets of control variables from the full list as in Figure 4 (Panel A: Czechia sample), as indicated in the bottom part of the table. Column 6 constitutes the baseline specification, reported also in Column 1 of Table 2. Column 8 reports results from a double-selection LASSO linear regression model (*dsregress* command in Stata 17) selecting from a set of covariates used in Figure 4 (Panel A: Czechia sample). Huber–White robust standard errors reported. T-test (two-sided) p-values reported as *p < 0.10; **p < 0.05; ***p < 0.01. This table is accompanying Figure A12.

Table A13. Effects of the HARDSHIP treatment on allocations in the Help-or-Harm task: By position of the task in the survey (Experiment 1: Czechia, 10-11/2020)

	(1)	(2)	(3)	(4)
Recipient	18-24 y/o	25-44 y/o	44-64 y/o	65+ y/o
Panel A: Fewer questions between treatment and allocations				
HARDSHIP	5.05	6.81**	2.10	0.14
	(3.55)	(3.35)	(3.12)	(3.44)
CONTROL mean	111.71	128.81	140.67	145.74
Observations	1,055	1,055	1,055	1,055
Panel B: More questions between treatment and allocations				
HARDSHIP	6.45*	3.47	1.62	3.65
	(3.58)	(3.46)	(3.36)	(3.60)
CONTROL mean	115.32	123.42	133.45	145.72
Observations	972	972	972	972

Notes: OLS coefficients. Estimated effects of the HARDSHIP treatment on allocations in the Help-or-Harm task (in CZK). Experiment 1 sample, wave 1 data. Panel A uses data for respondents who made the four HHT decisions affecting recipients of different age before the remaining 17 HHT decisions. Panel B uses data for the remaining sample, i.e. for those making the four age-HHT later. The regressions use the same set of control variables as Figure 4 (Panel A: Czechia sample). Standard errors clustered at the respondent level. T-test p-values (two-sided) reported as *p<0.10; **p<0.05; ***p<0.01.

Online Appendix D. Experimental protocols

I. Experiment 1

[English translation from Czech original]

I.1. HARDSHIP treatment

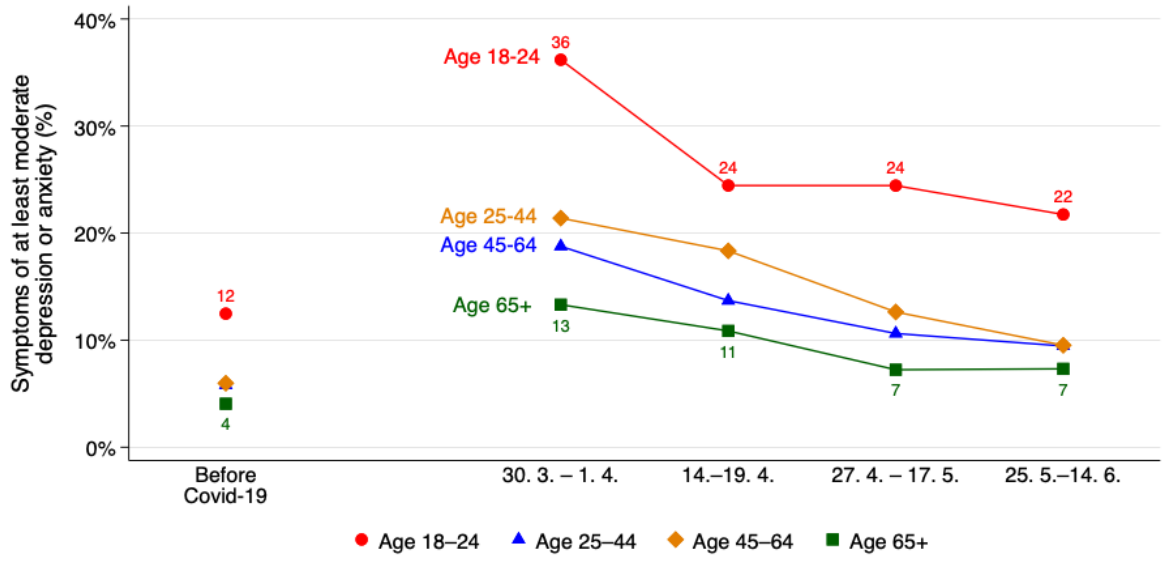
[Screen 1]

Since March 2020, we have regularly surveyed around 2,500 people about the impact of the Covid-19 pandemic on their lives. Using data from the questionnaire, we have found, for example, that the percentage of people reporting symptoms of at least moderate depression or anxiety tripled during the first wave of the pandemic (from 6% to 22%).

[Screen 2]

However, the impact on mental health varied greatly across age groups:
1. They were the worst for young people under 25. Just after the first wave of across-the-board restrictions, 36% of young people showed symptoms of moderate depression or anxiety and their situation was only slowly improving - in June, 22% of 18-24 year olds were still showing symptoms of mental health problems.
2. Other age groups have been significantly less affected, see the graph on the following screen.

[Screen 3]



Source: mental health impacts of the coronavirus pandemic, IDEA CERGE-EI study, 07/2020.

[Screen 4]

Would you like to learn more about the study on which the graph is based?
1. Yes, I would like to receive a link to the study after the survey.
2. No

I.2. Filler questions between the HARDSHIP treatment and the Help-or-Harm task

- How many members, including you, does your household have?

[Prefilter: for multi-member households]

- How many members of your household are aged 18 and over? Do not count yourself.
- How many members in your household are aged 0 to 12 years?
- How many members in your household are aged 13 to 17?

- How many students in your household are aged 18 to 26?

- What is your highest level of education?
  Basic/Secondary school without a diploma/Secondary education with a high school diploma/Higher education

- What is your employment status?
  Employee/Self-employed/Student/On maternity or parental leave/Retired/Unemployed/Other

- What was your employment status before the Covid-19 epidemic (February 2020)?
  Employee/Self-employed/Student/On maternity or parental leave/Retired/Unemployed/Other

[Prefilter: if economic status self-employed or employee]

- Please indicate whether you worked in any of the following sectors before the Covid-19 epidemic (February 2020).
  Healthcare/Nursing profession/Education or school/Services, hospitality/Public transport driver, taxi/Public office/Occupation where I come into contact with a large number of people/None of the above

- What is the size of your place of residence?
  Up to 999 inhabitants/1000 to 1999 inhabitants/2000 to 4999 inhabitants/5,000 to 19,999 inhabitants/20 000 to 49 999 inhabitants/50 000 to 99 999 inhabitants/100 000 inhabitants and over

- In which region do you live?
  Prague/Central Bohemia/South Bohemia/Pilsen/Karlovy Vary/Ústí nad Labem/Liberec/Hradec Králové/Pardubice/Vysočina/South Moravia/Olomouc/Zlín/Moravia-Silesia Region

- What is the current total net monthly income of your household?
  (Include in income all income from employment, pensions, rent and benefits from all members of your household that you have available despite the changes related to the coronavirus epidemic)
  Up to CZK 10 000/10 001 - 15 000 CZK/15 001 - 20 000 CZK/20 001 - 25 000 CZK/25 001 - 30 000 CZK/30 001 - 35 000 CZK/35 001 - 40 000 CZK/40 001 - 50 000 CZK/50 001 - 60 000 CZK/Over 60 000 CZK/Don't know or don't want to answer

- What was the total net monthly income of your household in January 2020 (before the Covid-19 epidemic in the Czech Republic)?
  (Include in your income all income from employment, pensions, rent and benefits available to all members of your household.)
  Up to CZK 10 000/10 001 - 15 000 CZK/15 001 - 20 000 CZK/20 001 - 25 000 CZK/25 001 - 30 000 CZK/30 001 - 35 000 CZK/35 001 - 40 000 CZK/40 001 - 50 000 CZK/50 001 - 60 000 CZK/Over 60 000 CZK/Don't know or don't want to answer

- When do you think the COVID-19 vaccine will be approved?
  Autumn 2020/Winter 2020/21/Spring 2021/Summer 2021/Autumn 2021/Later

- When do you think the COVID-19 vaccine will be available in the country?
  Autumn 2020/Winter 2020/21/Spring 2021/Summer 2021/Autumn 2021/Later

I.3. Help-or-Harm task

Now there will be a different activity. In contrast to traditional survey questions, you are to make several decisions that may have real consequences on the financial reward received by someone else. We will ask you whether you want to increase or decrease the reward of several people. Each of them is a different person, and none of them participated in this survey. After this survey, we will randomly select thirty participants and select one of their decisions that will determine the reward for someone else. Please make your decisions carefully, because each of your decisions may play a role.

Now please make a decision for each of the persons listed below. If you decide not to change their reward, they will receive CZK 100. But you can decide to increase or decrease their reward to any amount between CZK 0 and CZK 200. Please use the slider to determine the reward for each of these individuals.

[Decision-making environment displayed in Figure A1 was displayed on a separate screen for each of the following 21 people]

[Randomization: The Age module was randomly presented before/after the other modules. The order within the modules is also randomized.]

Help-or-Harm task: Age module

- A person aged between 18-24 years, living in the Czech Republic
- A person aged between 25-44 years, living in the Czech Republic
- A person aged between 45-64 years, living in the Czech Republic
- Person aged 65 and over, living in the Czech Republic

Help-or-Harm task: Other modules

- A person living in your region
- A person living in another region in the Czech Republic
- A person living in Prague
- A person whose political opinions are close to yours (i.e., votes for the same political party)
- A person whose political opinions are different from yours (i.e., votes for a party from the opposite side of the political spectrum)
- A person who identifies as a member of the majority population in the Czech Republic
- A person who identifies as a member of the Roma ethnic minority
- A person living in the Czech Republic
- A person who moved to the Czech Republic in the last five years
- A person living in the European Union
- A person living in the United States
- A person living in Africa
- A person living in Asia
- A person living in the Czech Republic, with no religious affiliation
- A person living in the Czech Republic, Christian affiliation
- A person living in the Czech Republic, Muslim affiliation
- A person living in the Czech Republic, Jewish affiliation

I.4. Policy support

How much should the state currently support and invest funding in mental health services, e.g. crisis lines, access to specialist care?
(Scale 0-100. 0 = Not at all; 100= It should be an important priority)

- For minors (14-17 years)
- For young people (18-24 years)
- For middle-aged people (25-64 years)
- For seniors (65 and over)

How much should the state currently financially support the following groups of people?
(Scale 0-100. 0 = Not at all; 100= It should be an important priority)

- Young people (18-24 years)
- Middle-aged people (25-64 years)
- Seniors (65 and over)

II. Experiment 2

II.1. Help-or-Harm task

Unlike in usual survey questions, you will now make several **decisions** that can have a **real impact on someone else's financial reward**. We will ask you whether you want to increase or decrease a reward of several people. Each of them is a different person, but none of them is a participant in this survey. After this survey, we will randomly select thirty participants and choose one of their decisions to determine someone else's reward. So please choose carefully, as **each of your decisions may play a role.**

Now please make a decision for each person listed below. **If you don't change their reward, they will receive 5 USD. However, you can choose to increase or decrease their reward to any amount between 0 USD and 10 USD.** Please use the slider to determine the reward for each of them.

[Decision-making environment displayed in Figure A1 (right) was displayed on a separate screen for each of the following 4 people]

[Randomization: The order within the module is randomized.]

Help-or-Harm task: Age module

- A person aged between 18-24 years, living in the Czech Republic
- A person aged between 25-44 years, living in the Czech Republic
- A person aged between 45-64 years, living in the Czech Republic
- Person aged 65 and over, living in the Czech Republic

II.2. Unprompted questions on Help-or-Harm behavior

We asked participants who allocated different amounts to their own group and to the 18-24 years and 65 and over, respectively, in the Help-or-Harm task, to describe reasons for their decision.
[Randomization: The order in which the question for a young vs. senior were asked was randomized.]

Young vs. own age group [18-24 not asked this question]
Now we want to understand why you decided to allocate the following rewards:

- You gave [X] USD to a person aged 18-24
- You gave [Y] USD to a person aged [own age group]

What were the main reasons for this choice? [Text field]

Senior vs. own age group [65 and over not asked this question]
Now we want to understand why you decided to allocate the following rewards:

- You gave [X] USD to a person aged [own age group]
- You gave [Y] USD to a person aged 65 and over

What were the main reasons for this choice? [Text field]

II.3. Prompted questions on Help-or-Harm behavior

Next, we will ask you why you allocated these rewards to these four people:

- **Aged 18-24:** [X] USD
- **Aged 25-44:** [W] USD
- **Aged 45-64:** [Y] USD
- **Aged 65 and over:** [Z] USD

[Randomization: The order in which the age groups are presented is randomized.]

I allocated [X/W/Y/Z] USD to a person **[age category]**, because I see that person as:
(Select up to three most important reasons that affected your decision by dragging them from the list to the box on the right. Please order them based on importance.)

Randomization: The order in which the options are displayed is randomized using four different combinations.]

Items: [Moral | Immoral | Similar political views from mine | I like their lifestyle | I dislike their lifestyle | Rich | Poor | Friendly | Unfriendly | Healthy / fit | Unhealthy / frail | Happy | Sad | Facing challenges | Having an easy life | Selfish | Helping others | Respectful | Disrespectful | Lazy | Hard-working | Responsible | Irresponsible | Competent | Incompetent | Other (Specify other) | None of the above]

II.4. Stereotypes

Next, we would like to get your views about people from these four age groups living in the United States in general:

- People **aged 18-24**
- People **aged 25-44**
- People **aged 45-64**
- People **aged 65 and over**

How do you see people **aged [age category]** in general?
(We understand all people are different. But try to drag a slider to the position that mostly represents your view of people from that age category.)

[Randomization: The order in which the age groups are presented is randomized. The sliders are presented in a fixed order within an age group.]

A set of sliders on a scale from 0 to 10 is presented. Following trade-offs are elicited:

- People [age group] are typically... [Moral = 0] / [Immoral = 10]; [Neutral = 5]

- People [age group] typically have... [Similar political views to mine = 0] / [Different political views to mine = 10]; [Neutral = 5]
- For people [age group], typically... [I like their lifestyle = 0] / [I dislike their lifestyle = 10]; [Neutral = 5]
- People [age group] are typically... [Rich = 0] / [Poor = 10]; [Neutral = 5]
- People [age group] are typically... [Friendly = 0] / [Unfriendly = 10]; [Neutral = 5]
- People [age group] are typically... [Healthy / fit = 0] / [Unhealthy / frail = 10]; [Neutral = 5]
- People [age group] are typically... [Happy = 0] / [Unhappy = 10]; [Neutral = 5]
- People [age group] are typically... [Facing challenges = 0] / [Having an easy life = 10]; [Neutral = 5]
- People [age group] are typically... [Selfish = 0] / [Helping others = 10]; [Neutral = 5]
- People [age group] are typically... [Respectful = 0] / [Disrespectful = 10]; [Neutral = 5]
- People [age group] are typically... [Lazy = 0] / [Hard-working= 10]; [Neutral = 5]
- People [age group] are typically... [Responsible = 0] / [Irresponsible = 10]; [Neutral = 5]
- People [age group] are typically... [Competent = 0] / [Incompetent = 10]; [Neutral = 5]

III. Supplementary survey on mental health

[English translation from Czech original]

III.1. Mental health module (also implemented in Experiment 1)

Now let us ask you a few questions about how you are currently doing.

- Overall, how happy do you feel now?
  0=Very unhappy; 10=Very happy

- Please indicate how often the following problems have bothered you during the past two weeks.
  In each row select one answer: Not at all/Some days/More than half the days/Almost every day
  - Trouble falling asleep or staying asleep, or sleeping too much
  - Feeling nervous, anxious, or on edge
  - Poor appetite or overeating
  - Test your attention span (select "several days")
  - Feeling tired or having little energy
  - Little interest or pleasure in doing things
  - Becoming easily annoyed or irritable
  - * Not being able to stop or control worrying[3]
  - * Feeling down, depressed or hopeless
- Please indicate how often in the last fourteen days you have felt the following.
  In each row select one answer: Never/Almost never/Sometimes/Quite often/Very often
  - I felt that I were unable to control the important things in my life
  - I felt confident about my ability to handle my personal problems
  - I felt that things were going my way
  - I felt difficulties were piling up so high that I could not handle them

- What are your feelings about the ongoing coronavirus epidemic? Are you...

[3] The last two questions were only asked in some waves of in the supplementary survey; they are not part of our main index of depression and anxiety symptom.

0=Very calm; 100=Very worried

III.2. Beliefs about mental health

Using this questionnaire, we found that 6% of the Czech population showed symptoms of mental health problems - at least moderate depression or anxiety - before the outbreak of the coronavirus pandemic.

- What percentage of people in the Czech Republic do you think showed these symptoms during the first wave of the pandemic in the second half of March 2020? (Slider 0-100%)
- What percentage of young people (18 to 24 years old) do you think showed these symptoms? (Slider 0-100%)
- What percentage of people in middle age (25-64 years) do you think showed these symptoms? (Slider 0-100%)
- What percentage of seniors (65 years and older) do you think showed these symptoms? (Slider 0-100%)