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IN-HABIT – INclusive Health And wellBeing In small and medium size ciTies

D6.3 – Behavioural Games to Boost Changes

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IN-HABIT

VERSION HISTORY

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1	Final	31st of December, 2024	University of Turin	

EXECUTIVE SUMMARY

In IN-HABIT, each city aims to improve health and well-being using different solutions. Each of the envisioned solutions can be considered as common-pool resources which will deplete if they are not properly managed by citizens.

Making use of the latest research in behavioural and experimental economics we have developed, tested and implemented two sets of field experiments with the aim to inform policy makers and the scientific community on how mental health and wellbeing can be provided and sustainably maintained both at the level of communities and that of the wider polity.

The first set of field experiments, which we reported in D6.1: BEhavioural Games for Preference Elicitation, found relevant differences in overall contributions, gender gaps and strategic behaviours between the four cities of the INHABIT project and detected heterogeneities in the willingness to cooperate with different groups of citizens, highlighting community cohesion aspects that should be taken into account in the design of local policy.

The second set of experiments, building on the findings from the first set of field experiments, aims to inform the design of effective incentives for citizen's investment in mental health by shedding light on the behavioural mechanisms that impact their sustainable provision and financing. To ensure external validity and scalability of the findings, this set of field experiments has been conducted on a representative scale, recruiting samples of participants via a provider that ensures data completion and reliability at large scale. This document reports the results of the second set of field experiments.

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In line with the overall aims of INHABIT, we conceive of mental health as a common pool resource that needs sustainable intervention. This is consistent with wider evidence, according to which the World, and particularly the most industrialized regions, are going through a mental health crisis. In the European Union in 2016, mental health issues impacted 84 million people, corresponding to 17.3% of the population (European Council, 2016). Since 2016, anxiety and depression rates have been increasing by 17.8% and 20.5% respectively. In 2023, almost 1 in 2 persons (46%) in the European Union reported having been depressed or anxious in the previous 12 months (Eurobarometer, 2023). In our field experiment, in the four countries part of the INHABIT project (Latvia, Slovakia, Italy and Spain), we test: i) whether people consider mental health as an issue that would deserve a public and societal solution as opposed to considering it as a strictly personal and individual issue; ii) how they invest according to this differentiation. We also assess the role that beliefs and information in individuals' conception of the kind of public good they are willing to support, and elicit the extent to which stigma surrounding mental health as well as trust in policy makers affect these decisions. All these components are analysed to shed light on effective and sustainable ways in which health and wellbeing can be nurtured by designing effective policy.
The design we employ combines a public good game and a list experiment with random information treatments on mental health, in order to elicit how the propensity to invest may shift depending on whether investments in mitigating mental health issues are framed as personal, private investments as opposed to collective investments. More specifically, the Public Good Game follows a standard structure, where each participant is provided with an initial endowment of 100 tokens and grouped with three other participants. Each participant is asked to decide how much to contribute to a common pool, whose total is multiplied and divided equally amongst them. The list experiment identifies the potential stigma individuals attach to mental health. We then use this measure of stigma to assess the extent to which the contribution to the production of public goods depends on it or not. Finally, a post-experimental survey captures individuals' self-reported first order beliefs (what they

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think))- and second-order beliefs (what they think others think) about the state of mental health in their country, levels of social and institutional trust, social media usage, social capital, and perceptions of responsibility towards themselves and others.

Summary of key findings

The key findings from our field experiments reveal a large dissatisfaction with mental health services across countries, even if participants tend to think it is more pronounced among others than their own. The willingness to contribute to mental health investment is quite high, and higher when mental health is framed as a Private good rather than a Public one. There are also some gender differences in the propensity to contribute, although these differences are not highly pronounced: women tend to contribute more and also tend to believe that others should contribute more across all conditions.

Furthermore, the analysis by country reveals significant variations in contributions across countries, indicating that national context plays an important role in shaping individuals' willingness to contribute to mental health: Slovakia and Latvia consistently show the highest contributions across all treatments, and in these countries expectations that others would contribute are also highest. General trust levels are moderate in our samples, with most participants falling between neutral and slightly positive levels rather than displaying extreme trust or distrust. While gender differences are small, women tend to report slightly lower trust than men, indicating a more cautious approach. Country-level differences are more pronounced, with Latvia and Slovakia showing higher levels of trust, while Germany and France exhibit greater skepticism and lower averages and Spain and Italy somewhere in between.

The list experiment reveals that stigma remains a relevant factor influencing responses, with men stigmatizing mental health more than women and Slovakia and Latvia showing the highest levels of stigma, while levels are moderate in Italy and Spain. Stigma does not per se affect individual contributions across treatments, but participants who reveal stigma expect others to contribute less overall. However, we also find that framing mental health as a Public

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or Private issue moderates the negative expectations associated with stigma, leading participants with stigma to anticipate higher contributions from others when exposed to these treatments. Taken together these findings suggest that framing can effectively influence behavior and perceptions, particularly by mitigating the pessimistic expectations associated with stigma.

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1. Introduction

IN-HABIT is a Horizon 2020 research project on inclusive health and well-being in four small and medium size European cities funded by the European Commission. Each city aims to develop new solutions in four dimensions to foster inclusive health and well-being. More specifically, Cordoba (Spain) uses culture and heritage to promote inclusivity; Riga (Latvia) mobilises food to nurture daily healthier lifestyles; Lucca (Italy) promotes human-animal bonds as new relational urban good; Nitra (Slovakia) works with art and environment to connect places and people. Each city focuses its action on deprived areas and vulnerable groups such as children, elders, women, persons with disability, ethnic minorities and migrants.

A distinct approach of the programme has been to consider health and well-being as a common pool resource (CPR), created, managed and used by the community but affected by low excludability and high subtractability. Common pool resources are shared and available to everyone but are also scarce, with a finite supply. This makes them susceptible to exploitation and diminished availability if individuals pursue their own self-interest. Moreover, if individuals and groups' social interests are in conflict - for instance they may have different willingness to cooperate and participate in the management of the resource - then they would clearly be incentives for users to ignore the social costs. Moreover, lack of shared ideas, values, incentives between individuals or groups of individuals are typically associated with lower trust, therefore potentially with higher costs of negotiation and bargaining and different motivations to cooperate.

In IN-HABIT, each city aims to improve health and well-being using different solutions. Each of the envisioned solutions can be considered as common-pool resources which will deplete if they are not properly managed by citizens. In order to address potential issues associated with the management of CPR, therefore, IN-HABIT has developed and implemented behavioural

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games in two distinct phases.

In the first phase, which took place in Autumn 2023 in each of the different cities, the experiments aimed to elicit citizens' willingness to cooperate and contribute to a common pool resource. The underlying rationale for the first round of experiments was that cooperation, although considered to be a cornerstone of sustainable behaviours, could be fragile. For instance, the actions of relatively small groups may undermine cooperation and trap societies in undesirable situations; this is even more so when individuals have different preferences for public goods, which means that they may not contribute enough for the public good to be financed. But, it might also be that individuals would prefer to contribute less, or not contribute at all, when the common good, resource or activity is shared with individuals from a different social group, however this is identified. To achieve this objective, the first round of field experiments assessed whether cooperation would differ if the common-pool resource would have more targeted beneficiaries, such as vulnerable groups (e.g. women, ethnic minorities, old people etc.), rather than be seen as beneficial only to the general public.[1] We found that the average contributions to a common pool is relatively high in our four cities compared to typical levels reported in the literature. It is possible that this relatively high willingness to contribute to a common pool reflects the fact that what we defined as the common pool in the four cities had very specific and clearly-defined aims, objectives and target beneficiaries. Moreover, despite this common finding across cities, we found differences between the four cities in contributions by gender, the extent of contributions when the project was identified as benefitting the vulnerable groups or the general population, and the extent of reaction to contributions when participants knew what others were contributing towards the common pool. Post-experiments discussions with stakeholders in the four cities pointed to possible explanations for these results. More specifically, the differences between cities, in terms of the average initial contribution, the gender gaps in willingness to contribute and the extent of strategic behaviours, could be explained by historical and cultural backgrounds as well as types of provision generally associated with a common pool in the four countries.

[1] See related report for Deliverable 6.1.

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In the second phase of field experiments, which this report is about, INHABIT aims to explore and understand how common pool resources can be sustainably financed. Building from the findings and possible explanations from the first phase of experiments, this second phase's objective is to inform the design of effective public goods by shedding light on the possible underlying mechanisms that may impact on their sustainable provision and financing. The review of the literature in Section 2 points out how two important mechanisms are represented by the tension between private and public solutions and the possible presence of norms and stereotypes. For instance, when a range of norms are present in a specific context, positive behaviours towards the common pool may be affected by individuals's adherence to prosocial norms, and this may in turn be affected by what individuals believe other individuals' adherence to the norm is.

In line wIth INHABIT core aim to improve health and wellbeing, we consider mental health as the public good of interest to this second phase. According to many indicators, the industrialized world is going through a mental health crisis. Data from the Global Burden of Disease show an uptick in anxiety disorders and depressive disorder prevalence in the 2010s globally and across all major industrialized nations. In the European Union in 2016, mental health issues impacted 84 million people , corresponding to 17.3% of the population (European Council, 2016). Since 2016, anxiety and depression rates have been increasing by 17.8% and 20.5% respectively. In 2023, almost 1 in 2 persons (46%) in the European Union reported having been depressed or anxious in the previous 12 months (Eurobarometer, 2023).

In order to address our objectives, we design and implement two types of experiments: a Public Good experiment and a List experiment. The former aims to assess the extent to which individuals in different contexts (the four countries where the INHABIT cities are located, with the addition of France and Sweden to provide relevant comparative analysis and external validity in the European context) differ in their willingness to contribute to a solution to the mental health problem. More specifically, we assess whether their willingness to contribute to

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the mental health problem depends on whether the solution is considered to be one that requires commitment from everyone or, instead, it is left to the individual. The List experiment aims to assess the prevalence of underlying social norms and behaviours that may affect individuals when they are taking decisions on such sensitive issues as mental health, with particular reference to the stigma surrounding mental health issues. Section 3 describes the design of the experiments in detail. This follows from a review of the relevant literature in Section 2. We present the method and data nn Section 4 and the results in Section 5. We then draw main conclusions and discussion in Section 6.

2. Literature review

The World Health Organization (WHO) estimates that in 2019 there were over 125 million people with mental health conditions (including depression, anxiety disorders and psychosis in adults, as well as developmental and behavioural disorders in children and adolescents) in Europe (13 percent of the population and 15 percent of years lived with disability), as well as 119,000 suicides (World Health Organization Regional Office for Europe, 2022). The WHO European Framework for Action on Mental Health (EFAMH), covering the period 2021–2025, documents evidence of a low level of mental health literacy on how to obtain and maintain good mental health, including better understanding of mental ill health and its treatment, as well as deeply entrenched stigma and discrimination against people with mental health conditions and psychosocial disabilities. It identifies amongst the key priorities increasing mental health literacy and investment in mental health to face unmet needs and financial hardship and overcome fragmented or uncoordinated service delivery as well as inadequate governance and information systems leading to reliance on psychiatric hospitals or social care institutions at the expense of more effective community care institutions which are understaffed and underfunded.

The cumulative global economic impact of mental, neurological, and substance use was estimated at USD 16.3 trillion between 2011 and 2030, bigger than cardiovascular disease,

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chronic respiratory disease, cancer, and diabetes in its contribution to the global burden of disease. However, global median expenditure on mental health is only USD 2.5 per person annually (ranging from USD 0.1 to USD 21.7 across WHO regions), accounting for less than 2 percent of government health expenditure globally (Knapp and Wong, 2020).

So why the under-investment? Is it an information issue because people underestimate the extent of the problem? Is it because they believe there is a stigma surrounding mental health? Is it because they underestimate the benefits from investment? Is it because they think the state should be responsible for investment?

The American Psychiatric Association defines mental disorders as behavioral or psychological syndromes or patterns that occur in an individual reflecting an underlying psychobiological dysfunction and leading to clinically significant distress or disabilities that are not merely an expected response to common stressors and losses, or a culturally sanctioned response to a particular event (American Psychiatric Association, 2013).

Evidence suggests that mental health literacy, that is, knowledge and beliefs about mental disorders with respect to recognition, management, and prevention, is low in the population (Dunn et al., 2009; Jorm et al., 2006) and it is associated with low service utilization (Jorm, 2015; Mendenhall and Frauenholtz, 2013; Smith and Shochet, 2011), higher rates of depression, anxiety, stress, and internalized stigma. In particular, adults with mental health literacy display lower mental health stigma and aversion to help-seeking (Fleary et al., 2022).

A related important issue thus regards the potentially contentious nature of feelings towards mental health, which is often stigmatized by individuals leading to under-reporting of their own problems (Sickel et al., 2014; Bharadwaj et al., 2017) but also by health care practitioners who are less likely to refer to a specialist or refill prescriptions for patients when they endorse

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stigmatizing characteristics of the patient (Corrigan et al., 2014) and medical school students (Sukhera and Chahine, 2016).

Low mental health literacy and stigma are also connected to higher caregiver burden (Tambling et al., 2023), that is, effects that spill over from sufferers to those around them. The health literature has considered the existence of health spillovers for decades (Chandra and Staiger, 2007; Hodor, 2021; Jacobson, 2000; Wilson, 2002). Conversely, mental health spillovers have only recently begun to be documented, across individuals and family members (Angelini and Costa-Font, 2023; Della Giusta and Longhi, 2021; Bobinac et al., 2010), but also more widely to caregivers (Desrosiers, 2023) and in migrant communities (Cazzuffi, 2024) and to communities (Ziogas, 2023; Baba et al., 2017; Tsai and Tomlinson, 2012).

All of these issues are connected to investments in mental health, as mental health literacy and stigma are both determinants of the recognition of the need to invest, and the extent to which a mental health problem is understood to be of a fundamentally private nature without spillovers on others will potentially lead to underinvestment by both the public and private sectors. Conversely, where the problem is understood as being important, and having spillovers, it can be expected that both public and private actors are more motivated to invest.

Other factors that may be important in determining mental health investments may relate to what motivates investments in public goods in general, and here we consider the role of trust, which is known to be a positive contributor to both public goods investments and donations (Anderson et al., 2004), particularly at the level of the neighborhood (Leonard et al., 2010).

Does the provision of information on the consequences of mental health increase awareness? How does framing mental health as a public good affect individual willingness to cooperate for a public good production or to donate to mental health programs? Are there heterogeneous effects across different levels of first- and second-order beliefs, social media use, social capital,

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and both social and institutional trust? Furthermore, does social stigma correlate with the main outcomes? Is this stigma leading to further heterogeneous effects?

Primary outcomes will be measured using a public good game. This game identifies a key outcome: individuals' willingness to cooperate for the production of public goods.

Secondary outcomes will be measured using a list experiment and survey questions. The list experiment identifies potential stigma individuals attach to mental health. The survey questions will capture individuals' self-reported first- and second-order beliefs, levels of social and institutional trust, social media usage, social capital, and perceptions of responsibility towards themselves and others.

3. Design and methods

The general objective of this study is to examine whether providing information about mental health issues (**Mental Health (Only)** treatment) enhances awareness and increases preferences for cooperation in the production of public goods.

The design we employ in our experiments combines a public good game and a list experiment with random information treatments on mental health to elicit how the propensity to invest may shift depending on whether investments in mitigating mental health issues are framed as personal, private investments as opposed to collective investments.

3.1.Information treatments

The experiment begins with randomized information treatments, designed to present mental health from three perspectives: private, neutral, and societal, along with an active control condition in which participants receive information unrelated to mental health.

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All three treatments are structured in the same way. They start with a common introduction to the topic, which provides several pieces of evidence on mental health in Europe, as outlined below:

"Mental health issues impacted 84 million people in the European Union in 2016, corresponding to 17.3% of the population (European Council, 2016).

Since 2016, anxiety and depression rates have been increasing by 17.8% and 20.5% respectively. In 2023, almost 1 in 2 persons (46%) in the European Union reported feeling depressed or anxious, in the previous 12 months (Eurobarometer, 2023)."

Consequently, we complement this by differentiating based on the specificity of each treatment, showing how investments framed as personal, private investments generate private benefits (Mental Health (Private) treatment) or as collective investments generate societal benefits (Mental Health (Social) treatment).

Private: "*Personal investments in mental health can lead to significant individual benefits: by focusing on mental health, individuals can achieve greater emotional stability, resilience, and well-being, ultimately making their life healthier and more productive.*"

Societal: "*When society invests in mental health, everyone benefits: by collectively focusing on mental health, we can all achieve greater emotional stability, resilience, and well-being, ultimately leading to a healthier and more productive society.*"

Neutral: "*When no one invests in mental health, people may still get by, yet with unsatisfactory outcomes, such as waiting, even late at night, until everybody leaves to cross the street*"

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Each treatment includes a supporting image that visually reinforces the key message of the information provided. Specifically, the images highlight how even simple tasks, such as crossing the street, can be challenging for people with mental health issues, as shown in Figure 1a. Figure 1b illustrates a solution through a *personal* investment to overcome this difficulty, such as buying a stop sign. In a social context, Figure 1c demonstrates how *society* as a whole invests so that everyone can benefit. On the other hand, when there is no investment—whether private or societal—people may face unsatisfactory outcomes, such as waiting until late at night to cross an empty street, as depicted in Figure 1d.

The control intervention is entirely unrelated to the topic addressed. In fact, the narrative focuses on mountains. It is designed to be consistent with the treatment narratives in terms of both the amount of information provided and the length of the intervention and provides essential benchmarks for causal identification, that is ensuring we can attribute the changes in outcomes to the treatments.

Before implementing the survey-experiment on a larger scale, we conducted a validation study to test the information treatments. Data were collected from a small, non-representative sample. We aimed to assess the effectiveness of the information treatments in terms of comprehension and their ability to convey the intended concepts. A survey was administered to students, who were randomly assigned to treatment groups (excluding the active control group). After each treatment, participants provided feedback on the clarity and comprehensibility of the information, as well as the topic they believed it addressed. This feedback helped identify areas for improvement, leading to slight modifications of the treatments based on participants' suggestions.

3.2.Public Good Game

The Public Good Game (PGG) is designed to assess individual willingness to cooperate for the production of a public good. In this experiment, the game follows the standard PGG structure,

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where each participant is provided with an initial endowment of 100 tokens and grouped with three other participants. The game does not initially frame the public good around mental health issues, ensuring that the focus remains on general cooperation for the public good.

3.3. List Experiment

Mental health can be a sensitive topic and may reveal underlying stigma; therefore, we design a List Experiment to include a sensitive item related to mental health issues. List experiments allow us to uncover the extent to which people agree or disagree with contentious statements by not asking this directly but rather asking them to say HOW MANY statements they agree or disagree with on lists of statements one of which also contains the contentious item.

Our experiment employs a list-based design, with the control list containing four items and the treatment list including an additional sensitive item. To minimize non-strategic errors related to the number of items, a placebo list is introduced. This placebo list builds on the control group items by adding a placebo item (Riambau and Ostwald, 2021). Together, these three lists constitute group A. In addition, we generate a corresponding set of three lists, referred to as group B, which are *comparable* to the treatment, control, and placebo lists in group A, while keeping the sensitive and placebo items unchanged. During the experiment, each participant is always presented with the treatment list and either a placebo or a control list. Initially, the participant is randomly assigned to one list from group A. The treatment list is presented with a probability of 50%, while the control and placebo lists each occur with a probability of 25%. Subsequently, the participant is assigned to a group B list based on their prior exposure. If they previously encountered a treatment list, they are now assigned either a control or a placebo list (with the same probability). Conversely, if they previously encountered a control or a placebo list, they are now assigned to the treatment list. This approach ensures balanced exposure to both treatment and non-treatment conditions. This design allows for analysis of within-individual variation, ensuring that the findings are not influenced by the specific content of the lists. Since the outcome might be affected itself by the information treatments, we schedule this phase before them.

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We implemented a validation exercise in order to evaluate the design of the list experiment, focusing on the clarity of the items and the consistency of participants' responses across different lists. The survey was administered to students and distributed online, with participants randomly assigned to various list types, including a placebo list. After presenting the lists, we included check questions to verify whether participants' responses aligned with their actual opinions. Feedback from this process helped refine the list items, addressing issues or suggestions highlighted by respondents.

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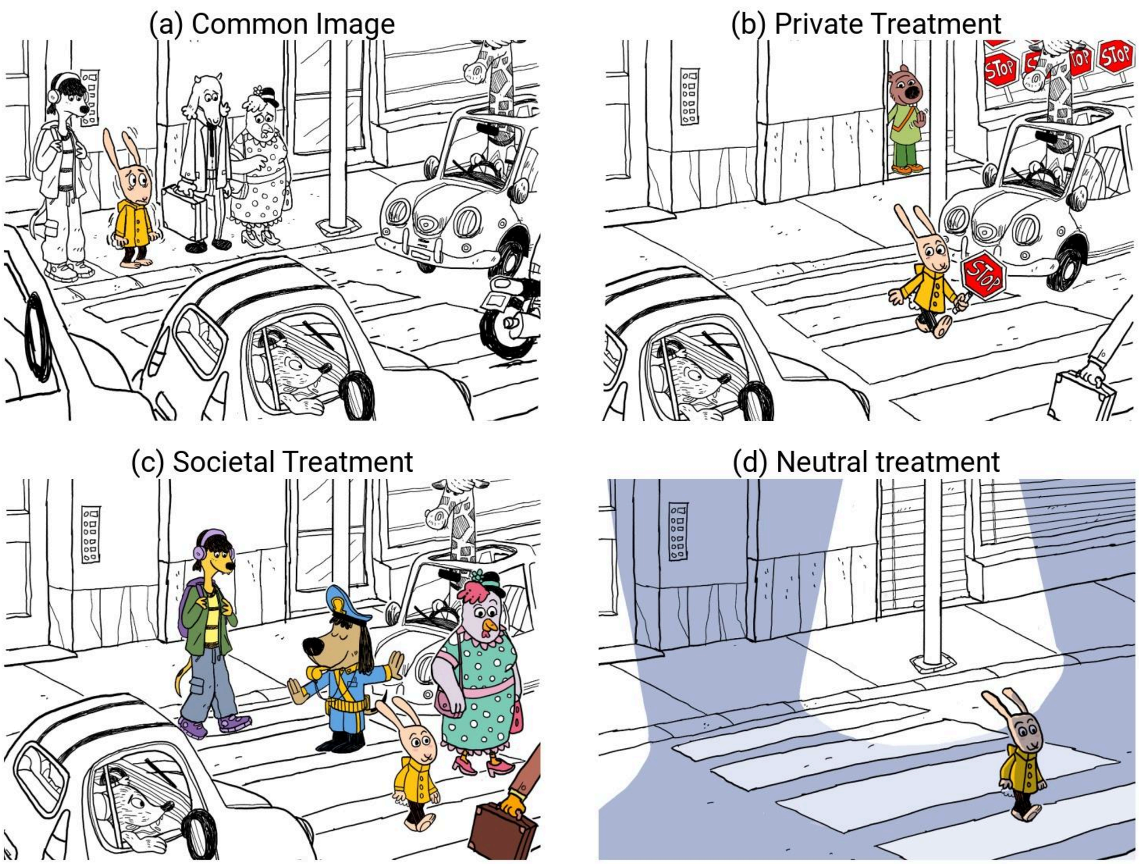
Figure 1: Treatments' images

3.4.Post experimental survey

Through a post-experimental survey, we collect further data by including a set of questions designed to gather self-reported information on several factors that may contribute to heterogeneous effects on the PGG. Specifically, the survey captures individuals' first- and



second-order beliefs, levels of social and institutional trust, social media usage, social capital,

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and perceptions of responsibility towards themselves and others. These factors are expected to influence how individuals respond to the treatments and help to explain the variation in their willingness to cooperate in the PGG and their engagement with mental health issues.

3.5.Pre-analysis plan and hypothesis

We submitted our pre-analysis plan on 4 December 2024. The plan comprises four key components. First, it specifies the primary outcomes, which is measured using a PGG to assess individuals' willingness to cooperate for the production of public goods. Secondary outcomes include stigma related to mental health, as well as factors such as social and institutional trust, social media usage, social capital, and perceptions of responsibility, which will be captured through survey questions. Second, the plan outlines the setting of our analysis, specifying that the experiment is conducted across six countries: France, Germany, Italy, Latvia, Slovakia, and Spain, with participants randomly selected by a private provider of representative samples, Dynata. We then randomly assign participants to treatment and control groups. Third, the plan details the procedure of the experiment, which will be conducted online.

The purpose of our study is to examine how individuals' willingness to cooperate in the production of public goods (mental health) depends on framing it as being a personal, private, or social issue. We hypothesize that the **Mental Health (Only)** treatment leads to higher contributions in the PGG compared to the control group. Furthermore, the **Mental Health (Social)** treatment, which frames mental health as a societal issue, results in lower contributions than the **Mental Health (Private)** treatment, which frames it as a private concern. Both **Mental Health (Social)** and **Mental Health (Private)** treatments lead to greater contributions compared to the **Mental Health (Only)** treatment, with a more pronounced effect in the **Mental Health (Social)** treatment. Regarding stigma, we expect individuals with lower levels of stigma towards mental health to contribute more, particularly those exposed to the **Mental Health (Social)** treatment.

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3.6.Estimation strategy and identification

To assess the propensity to contribute in a public good differentiating for intervention treatment, we estimate with Ordinary Least Squares (OLS) the following equation:

$$Contribution_i = \alpha + \beta \cdot Treated_i + \varepsilon_{ri}$$

where $Contribution_i$ is the contribution to a public good made by individual i; $Treated_i$ indicates whether individual i was contributing to a public good when they would be exposed to a mental health intervention treatment ($Treated_i = 1$) or just the control intervention ($Treated_i = 0$); and ε_i is an error term. The effects of the treatments are analysed separately; nonetheless, the individuals in the control group are included in all specifications in order to ensure the comparability among the different results. Therefore, β can be directly interpreted as the marginal willingness to contribute when the benefits related to the public good are framed either from a private, societal or neutral point of view. If β is equal to zero, this would be indicative of the absence of incentive to invest. If β is positive, then participants would be prone to contribute more when the individuals received the information treatment considered, and conversely if β is negative.

In order to assess potential stigma differences in contributions, we estimate with OLS the following equation:

$$Contribution_i = \alpha + \beta_1 \bullet Treated_i + \beta_2 \bullet Stigma_i + \beta_3 \bullet Treated_i * Stigma_i + \varepsilon_i$$

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where $Stigma_i$ denotes whether individual i reveal a stigma related to mental health ($Stigma_i = 1$) or not ($Stigma_i = 0$); and all the other variables are defined as before. The value of $Stigma_i$ variable is identified through the list experiment shown previously. In case the individuals do not show a significant difference between their answer across control and treated list, we set $Stigma_i = 1$, otherwise 0.

In this regression, the parameter β_3 is the main parameter of interest. It directly captures the interaction effect between the intervention targeting the mental health topic and stigma, showing how the stigma related to mental health influences the contribution to the public good when individuals are exposed to the intervention treatment. . Other quantities of interest include:

β_1 - the average marginal willingness to contribute among individuals exposed to the mental health intervention treatment, regardless the stigma;

$\beta_1 + \beta_3$ - the average marginal willingness to contribute among individuals exposed to the mental health intervention treatment and who reveal stigma;

α - the average contribution of individuals in the control group, namely without any treatment;

$\alpha + \beta_1$- the average contribution of individuals exposed to the mental health intervention treatment, regardless of stigma.

$\alpha + \beta_2$ - the average contribution of individuals who reveal stigma, regardless of treatment;

$\alpha + \beta_1 + \beta_2 + \beta_3$- the average contribution of individuals exposed to the mental health intervention treatment and who reveal stigma.

The results are presented by country and by gender.

Given the randomized assignment of individuals to the intervention treatments in the experiment, the parameters β estimated should identify the causal effect of framing

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investments in mitigating mental health issues as either personal, private investments generating private benefits or as collective investments generating societal benefits.

4. Data

Participants were recruited through the private company Dynata. The decision to employ a subcontractor for recruitment was based on the need to ensure a representative sample, which Dynata is contractually obligated to provide.

The participants were sampled from various European regions, specifically Spain, Italy, Slovakia, and Latvia, as these are the countries hosting the IN-HABIT mission cities. We chose to sample at the country level through Dynata to guarantee representativeness, which would be impossible to ensure at the city level with the resources available, thereby enhancing the general validity of the results at least at the country level. Additionally, we included Germany and France to facilitate comparisons with other European countries and replicability of the findings, a key issue of any Horizon funded project.

Our target is to recruit a total of 8,260 participants, distributed as follows: 1,315 each for France, Germany, Italy, and Spain, and 1,000 each for Latvia and Slovakia. These targets were set considering that we expect small treatment effects. With this sample size, we aim to detect a minimum effect size of $ME = 0.071$ (7.1% of a standard deviation) with statistical power $p = 0.8$ and a significance level $alpha = 0.05$ for standardized outcomes.

The data analyzed and presented in this and the following sections were collected up until December 20, 2024. As shown in **Figure 2**, the sample at this date includes 1,158 individuals from France, 1,110 from Germany, 1,157 from Italy, 213 from Latvia, 830 from Slovakia, and 1,138 from Spain.

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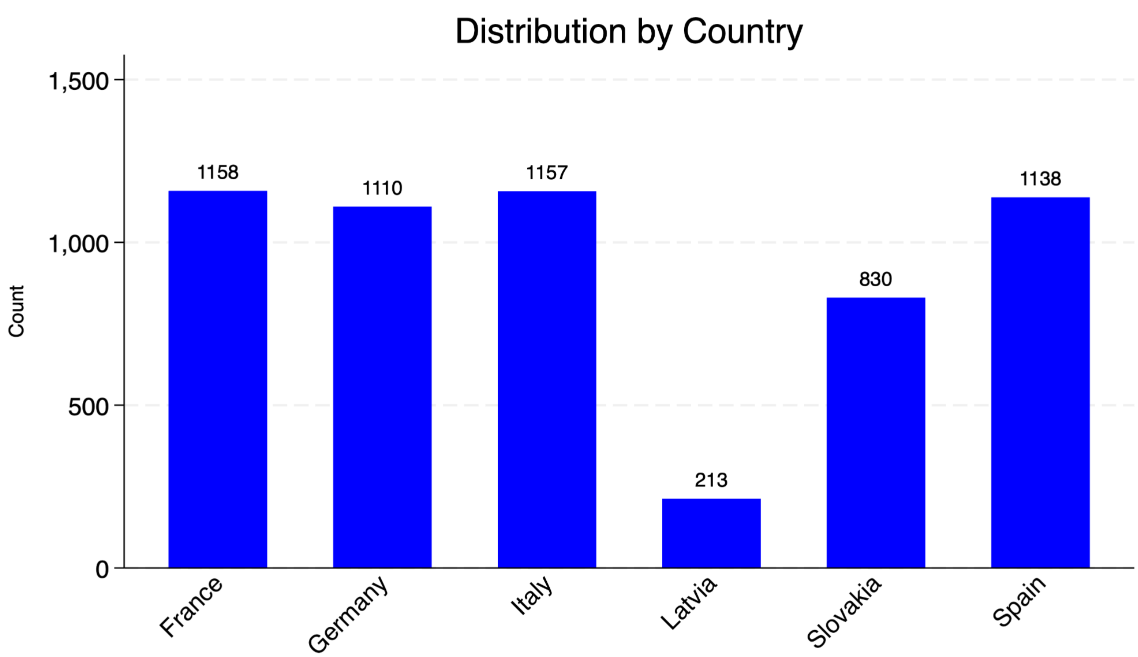
Figure 2: Number of respondents by country



Several initial statistics of the current sample are presented in Table 1. The table provides an overview of four key variables: N° Children, Age, Income, and Gender, based on a total of 5606 observations.

For N° Children, the mean number of children is 1.16, with values ranging from 0 to 18. The standard deviation for this variable is 1.14, indicating a moderate level of variability in the number of children across the sample. Regarding Age, the average age of participants is 50.51

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years, with a minimum of 18 years and a maximum of 89 years. The standard deviation is 14.59, suggesting a relatively broad age distribution within the sample. The Income variable shows an average income of 4038.51, with a large range between 0 and 399000, and a high standard deviation of 11029.73, reflecting considerable variation in income levels. Lastly, the Gender distribution is nearly balanced, with a mean of 0.50, indicating roughly equal proportions of men and women. The standard deviation is 0.50, consistent with the binary nature of the gender variable, showing equal variability between the two groups.

Table 1: Variables descriptive statistics

Variable	Mean	Min	Max	SD
N° Children	1.16	0	18	1.14
Age	50.51	18	89	14.59
Income	4038.51	0	399000	11029.73
Gender	0.50	0	1	0.50
Observations	5606			

Figure 3 shows the Distribution by Employment, civil status and ethnicity. The majority of respondents are Employed, with smaller groups in categories such as Self-employed, Retired, and Not employed, but looking for work. A smaller portion of the sample is Not employed, unable to work, Studying, or a Stay-at-home spouse or partner, indicating a diverse range of employment statuses, but a significant proportion of active workers. Most participants report being Married/Civil Union or Living with a partner, together making up more than 70% of the sample. Smaller groups are Widowed, Divorced/Separated, or identify as Arab, Middle Eastern, showing that the sample has a strong tendency toward partnership or marriage. Lastly, the vast majority of the sample identifies as White, with all other ethnic groups such as Black, Caribbean, or African, Asian, and others accounting for a very small portion of the sample.

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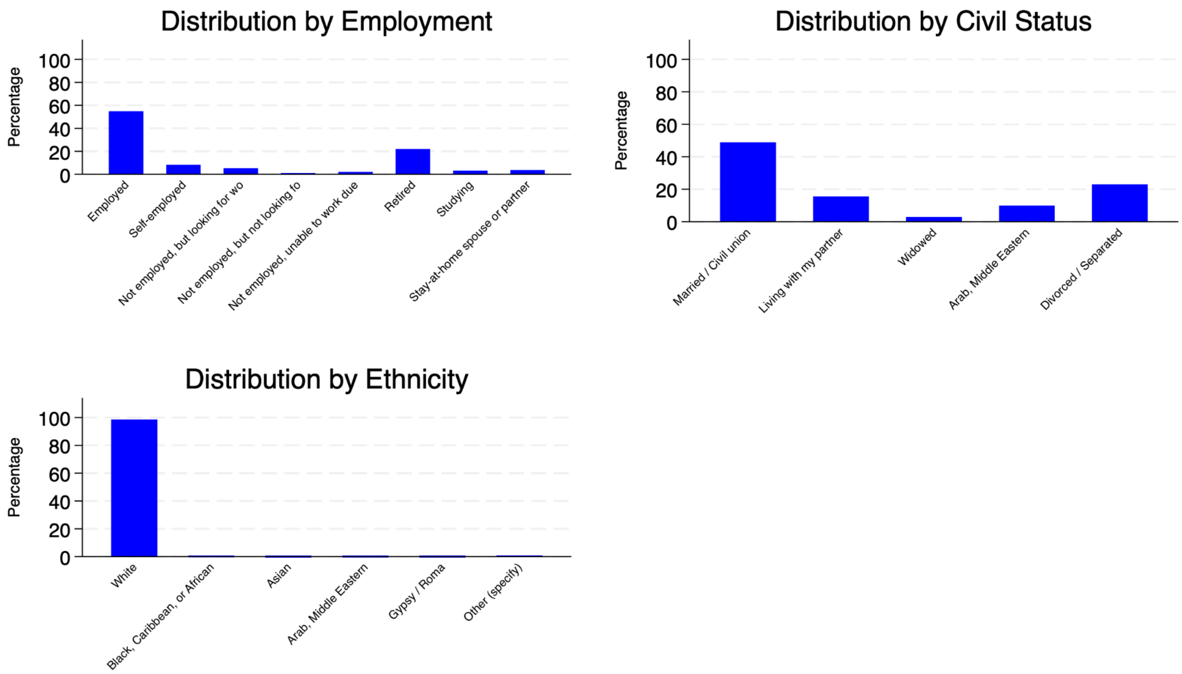
Figure 3: Variables' distribution



5. Results

In the context of this experiment, **primary outcomes** include not only the individual contributions made during the game but also individuals' perceptions about how much others will contribute. Additionally, we examine what participants believe others *should* contribute, adding a valuable perspective to understanding social dynamics in the context of mental health. While the public good game itself is not explicitly framed around mental health, this

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approach allows us to assess underlying social behaviors and attitudes that might influence how individuals engage with mental health issues.

Secondary outcomes are measured using a list experiment and survey questions. The list experiment is particularly important for identifying potential **stigma** associated with mental health. By using this method, we can assess whether stigma plays a role in influencing people's attitudes towards mental health, and whether it acts as a mechanism that affects the way individuals engage with or respond to mental health issues. Unlike direct survey questions, which can lead to social desirability bias, the list experiment allows for a more indirect measure of stigma, providing more accurate insights into hidden biases.

In addition to the list experiment, the survey questions will capture a range of individual **beliefs** and behaviors. These include first-order beliefs (i.e., individuals' immediate attitudes or perceptions about mental health) and second-order beliefs (i.e., individuals' perceptions about how others think about mental health). These beliefs are crucial for understanding how societal norms and individual perceptions align or diverge and how these dynamics may influence attitudes towards mental health.

We also measure **other factors** that may influence how individuals relate to the issue of mental health, such as levels of general trust on society and institutions. This measure is crucial for understanding the heterogeneous effects related to individuals' perceptions of mental health. By capturing this factor, we gain insights into how different contexts, such as **general social**, shape individuals' understanding and attitudes toward mental health, ultimately affecting how they respond to mental health issues both personally and socially. This information can help identify the varying impacts of mental health policies across different social and cultural settings.

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For all our measures we report specifically on the **gender** dimension and the country dimension that inform our GDEI approach in INHABIT.

5.1. How to read and interpret the figures

The results presented in this section are structured in various formats to facilitate interpretation. The primary outcomes, which focus on individual contributions in the public good game, are mainly shown through bar charts. In these charts, the y-axis represents the average contributions or perceptions of participants, while the x-axis distinguishes between different treatment groups, such as by gender, country, or treatment type (private, societal, neutral, or control). These charts allow us to visually observe the differences between groups and how the different conditions affect behavior or perceptions.

The results for secondary outcomes, which include stigma and the interaction between stigma and contributions, are presented in a table. This table shows the mean values by gender and country, followed by statistical significance values, indicated by stars. The table indicates whether there is a significant difference between the treatment group (which may expose individuals to the mental health intervention) and the control/placebo group. A positive and significant result suggests that stigma plays a role in shaping participants' perceptions or behaviors, whereas a lack of significance implies that the observed differences are not meaningful and may be due to random chance.

For interaction effects between stigma and contributions, these are shown through regression tables, where the results are always presented in comparison to the control group. The interaction coefficient in these regressions captures the interaction effect between the mental health intervention and stigma, specifically how stigma influences contributions to the public good when individuals are exposed to the intervention treatment, as compared to those in the control group. This tells us whether and how stigma affects people's willingness to contribute

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after receiving the mental health intervention. For a more detailed interpretation, please refer to Section 3.6, where the interaction model is explained further. There, we break down the contributions into specific groups, such as those who are exposed to the intervention treatment and those who reveal stigma, helping us understand how stigma interacts with the treatment to influence behavior. These values offer insight into the marginal contributions of different groups, both with and without the intervention, and whether stigma amplifies or diminishes the effects of the intervention relative to the control group.

In both the list experiment and interaction models, it is important to consider not just the magnitude of the differences observed between groups but also the statistical significance of these differences. The level of significance is indicated by the number of stars, with three stars (***) representing the highest level of significance, highlighting that the observed difference is highly unlikely to be due to chance.

For other outcomes, such as beliefs and social trust, the results are generally presented through histograms. In these charts, the y-axis represents the percentages of responses for each group, highlighting the distribution of responses across the different treatment groups.

5.2 Public Good Game

The results presented in this section focus on the primary outcomes related to contributions in the public good game, which include individual contributions, beliefs about what others should contribute, and perceptions of what others in the group actually contributed. These results provide valuable insights into how different treatments framing mental health as Private, Public, or Neutral influence individual propensity to contribute in a public good..

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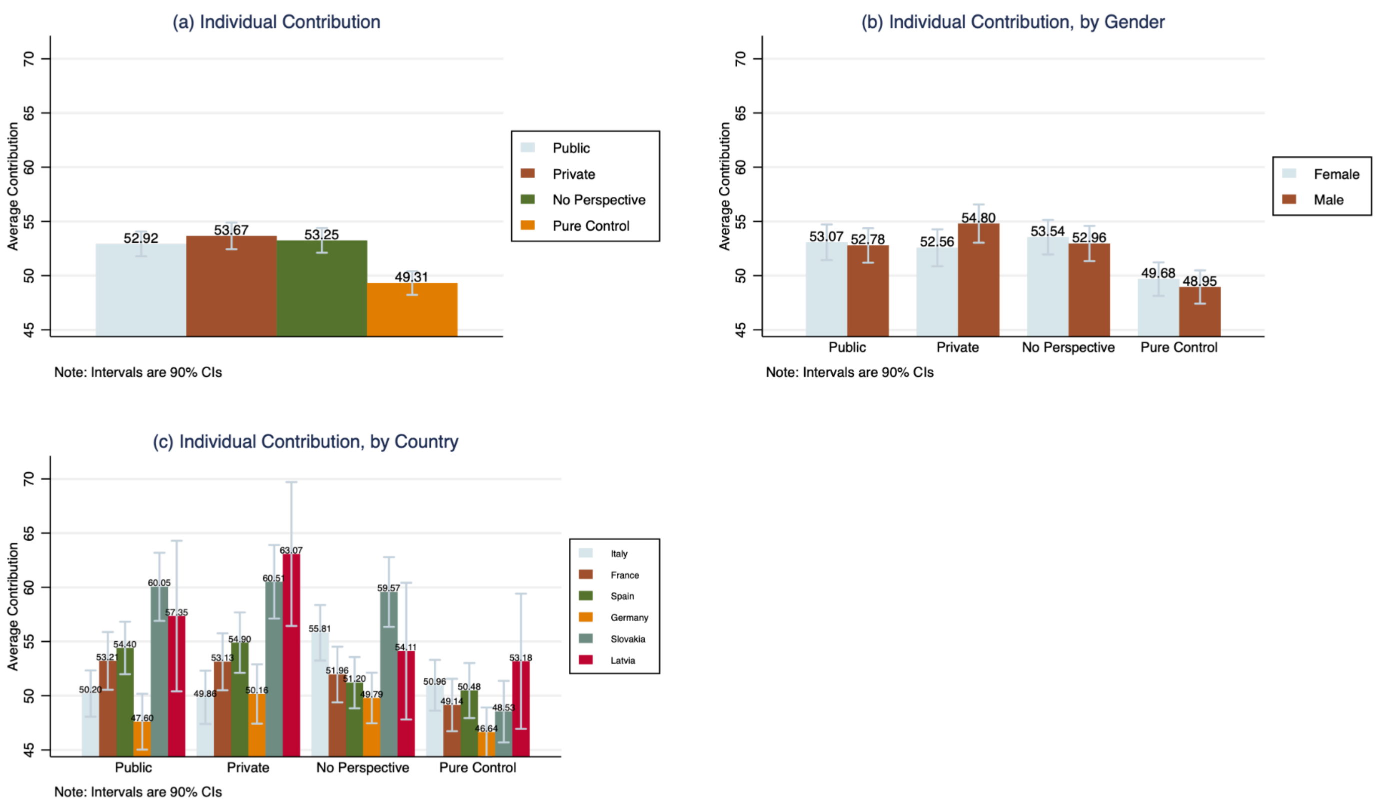
Figure 4: Individual contributions result



In the analysis of individual contributions, the overall results show that participants in the Private treatment contributed the most on average, with a mean contribution of 53.67. This was followed by the No Perspective treatment (53.25), the Public treatment (52.92), and the Pure Control group (49.31). When analyzing gender differences in individual contributions, the results reveal that there is a meaningful difference in the willingness to contribute between

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men and women, with women generally contributing more in most conditions, except for the Private treatment, where men contributed more, with an average of 54.80, while women contributed 52.56. In the other treatments, women showed a higher willingness to contribute. For instance, in the Public treatment, women contributed 53.07 compared to men's 52.78, and in the No Perspective treatment, women contributed 53.54, while men contributed 52.96.

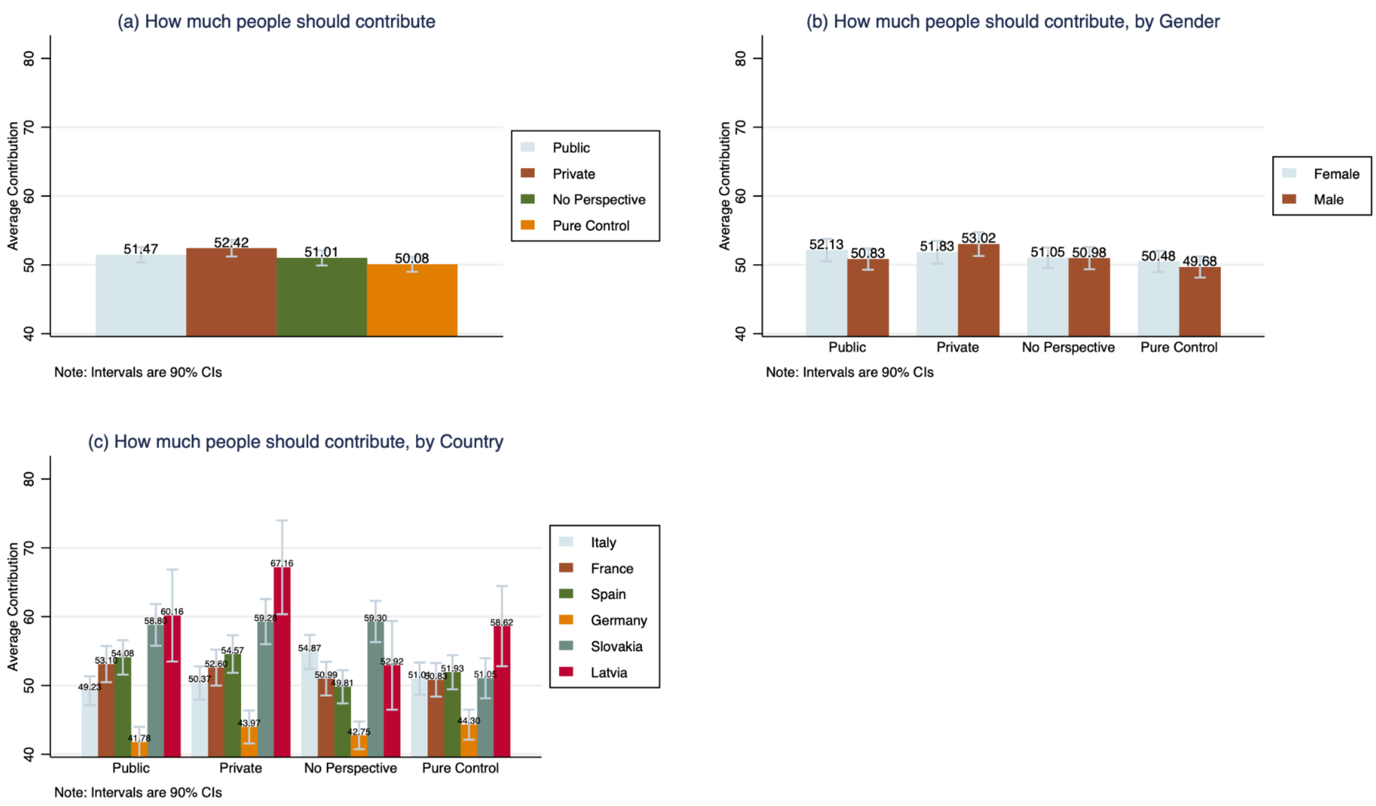

Figure 5: "How the others should contribute" results

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In the country-specific results, Slovakia and Latvia consistently showed the highest contributions across all treatments. In the Private treatment, Latvia had the highest average contribution (63.07), followed by Slovakia (60.51), both of which were higher than other countries. In the Public treatment, Slovakia (60.05) and Latvia (59.57) also demonstrated strong contributions. Spain, in the same treatment, contributed 54.40, showing a relatively high level compared to others. Germany, on the other hand, consistently contributed the least across conditions, especially in the Public (47.60) and No Perspective (49.79) treatments. France also showed lower contributions compared to Slovakia and Latvia, with contributions in the Private treatment at 53.13 and 53.21 in the No Perspective treatment.

These results suggest that the information treatment has an effect on contributions compared to the Pure Control group. The willingness to contribute is higher when mental health is framed as a Private good rather than a Public one. There are also some gender differences in the propensity to contribute, although these differences are not highly pronounced. Furthermore, the analysis by country reveals significant variations in contributions across states, indicating that national context plays an important role in shaping individuals' willingness to contribute to public goods.

The second outcome examines how much participants believe others should contribute. The results indicate that, overall, participants expect others to contribute slightly more in the Private treatment, with a mean contribution of 52.42, followed by the Public treatment (51.47), the No Perspective treatment (51.01), and the Pure Control group (50.08). These differences suggest that narrative framing has only a modest impact on expectations about others' contributions, with the Private framing eliciting slightly higher expectations.

Regarding gender differences, women tended to believe that others should contribute more across all conditions. This is particularly evident in the Public treatment, where women expected an average contribution of 52.13, compared to 50.83 for men. In the Private

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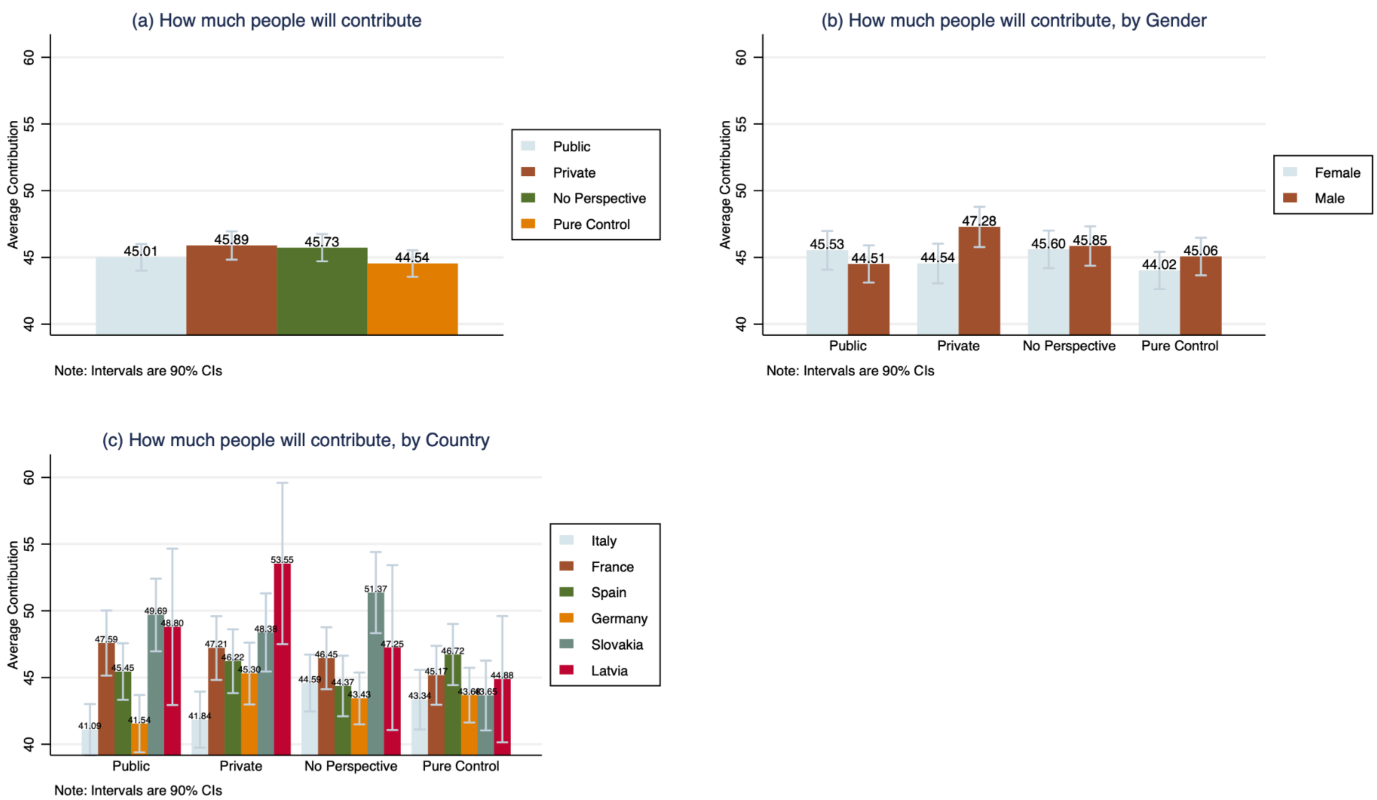
treatment, expectations were slightly higher for men (53.02) than women (51.83). Differences were smaller in the No Perspective condition, where women expected others to contribute 51.05, while men expected 50.98. Similarly, in the Pure Control group, women reported slightly higher expectations (50.48) than men (49.68). Overall, gender differences are present and women consistently reported marginally higher expectations in most treatments.

Figure 6: "How much the others will contribute" results



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In the country-specific results, Latvia and Slovakia consistently showed the highest expectations for others' contributions. In the Private treatment, Latvia reported the highest expectation, with a mean of 67.16, followed by Slovakia at 59.28 and Spain at 54.57. Italy and France showed more moderate expectations, with 50.37 and 52.60, respectively. In the Public treatment, Latvia again reported high expectations (60.16), followed by Slovakia (58.80) and Spain (54.08). By contrast, Germany consistently reported the lowest expected contributions, averaging 41.78 in the Public treatment and 42.75 in the No Perspective condition. France, while exhibiting more moderate expectations, reported relatively stable values, with 53.10 in the Public treatment and 50.83 in the Pure Control group. These patterns align closely with individual contributions observed in the previous outcome, where France showed moderate levels compared to higher contributions in Latvia and Slovakia.

These findings mirror the patterns observed for individual contributions, suggesting a high degree of alignment between what participants believed others should contribute and what they reported contributing themselves. As in the previous analysis, the results emphasize gender differences in expectations, with women generally expecting others to contribute more, and the role of cultural and institutional contexts in shaping expectations, with Latvia and Germany representing opposite ends of the spectrum.

The third outcome examines participants' beliefs about how much others in their group will contribute. The results indicate that participants expect slightly higher contributions in the Private treatment, with a mean contribution of 45.89, followed closely by the No Perspective treatment (45.73) and the Public treatment (45.01). Expectations are slightly lower in the Pure Control group, with a mean of 44.54. These findings suggest that the framing of mental health as a Private or No Perspective issue leads to marginally higher expectations about others' contributions, although the differences between treatments remain modest.

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Looking at gender differences, men tended to expect higher contributions than women across most treatments. In the Private treatment, men reported an expected average contribution of 47.28, compared to 44.54 for women. A similar pattern emerges in the No Perspective treatment, where men expected others to contribute 45.85, while women expected 45.60. Expectations in the Public treatment were slightly higher for women (45.53) than men (44.51). In the Pure Control group, expectations were more aligned, with women reporting 44.02 and men 45.06. These results indicate that gender differences, while present, are relatively small and do not show consistent trends across treatments.

In the country-specific results, Latvia and Slovakia once again reported the highest expectations for others' contributions. In the Private treatment, Latvia showed the highest average expectation (53.55), followed by Slovakia (48.38) and Spain (46.22). Expectations in France were moderate (47.21) but higher than in Italy (41.84) and Germany (45.30). In the Public treatment, Slovakia and Latvia maintained relatively high expectations, with averages of 49.69 and 48.80, respectively, while France reported 47.59 and Spain 45.45. By contrast, Germany and Italy consistently reported the lowest expectations, with 41.54 and 41.09, respectively, in the Public treatment, and slightly higher values in the Pure Control group (43.68 and 43.34).

Taken together, these results highlight two distinct patterns compared to the previous outcomes. First, the overall results and the country-specific findings show more aligned expectations across countries, reducing the gap between high- and low-contributing contexts across treatments. Second, whereas earlier outcomes showed women generally expecting higher contributions, this analysis reveals a partial reversal, with men now expecting slightly higher contributions in most treatments.

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5.3 List Experiment

The results of the List Experiment examine whether stigma related to mental health influences participants' responses. The experiment was designed to measure sensitivity around mental health by comparing responses between treatment, control, and placebo groups. The overall results reveal a statistically significant mean difference of 0.17 ($p < 0.01$), indicating that participants exposed to the sensitive item related to mental health were more likely to reveal stigmatizing attitudes compared to those in the control condition. The high level of significance ($p < 0.01$) confirms that the observed difference is unlikely to be due to chance and suggests that stigma remains a relevant factor influencing responses.

Table 2: List experiment results

Group	Mean Difference
Overall	0.17 ***
Female	0.13 ***
Male	0.21 ***
Italy	0.16 ***
France	0.13 **
Spain	0.15 ***
Germany	0.16 ***
Slovakia	0.25 ***
Latvia	0.20 *

Breaking the results down by gender, both men and women show statistically significant differences, although the magnitude of the effect varies. Women report a mean difference of 0.13 ($p < 0.01$), whereas men exhibit a larger mean difference of 0.21 ($p < 0.01$). These results suggest that men may be more prone to expressing stigmatizing attitudes when confronted with the sensitive item, while women appear somewhat less affected. Despite this variation,

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the presence of statistically significant effects for both genders highlights that stigma is widespread and present across groups.

The analysis across countries reveals substantial variation in stigma levels. Slovakia shows the largest mean difference (0.25, $p < 0.01$), suggesting particularly high levels of stigma. Latvia also reports a relatively large and significant mean difference (0.20, $p < 0.05$), though with slightly lower significance compared to other countries. Moderate levels of stigma are observed in Italy (0.16, $p < 0.01$), Germany (0.16, $p < 0.01$), and Spain (0.15, $p < 0.01$), all showing consistent and significant effects. France, on the other hand, reports a smaller but still significant mean difference (0.13, $p < 0.05$), indicating lower levels of stigma compared to the other countries.

Overall, these results confirm the presence of significant stigma related to mental health across all groups analyzed. The findings suggest that stigma varies across gender and national contexts. men tend to show stronger stigmatizing attitudes compared to women, and country-level differences highlight higher stigma levels in Slovakia and Latvia, with lower but still significant effects observed in France. These results underscore the importance of addressing both cultural and gender-specific dimensions of mental health stigma to reduce barriers to disclosure and support.

5.4 Mechanism

The regression results analyze how stigma interacts with framing treatments to influence contributions to the public good, focusing on three outcomes: individual contributions, what participants believe others should contribute, and what participants expect others will contribute.

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For individual contributions, the results indicate that all three treatments—Public, Private, and No Perspective—lead to significantly higher contributions compared to the Pure Control group. The No Perspective treatment has the largest positive effect (5.43, $p < 0.01$), followed by the Private treatment (3.85, $p < 0.01$) and the Public treatment (2.99, $p < 0.05$). The Stigma variable is negative (-0.36) but not statistically significant, suggesting that stigma does not interact with participants' willingness to contribute their own resources. Similarly, the interaction terms between Stigma and the treatments are not significant, with coefficients of 2.78 for Public, -1.19 for Private, and -2.28 for No Perspective, indicating that stigma does not significantly alter the effects of the treatments on individual contributions.

Table 3: Interacted regressions - Individual contribution

Contribution Own

	(1) Public	(2) Private	(3) No Perspective
Public	2.99**		
	(2.17)		
Private		3.85***	
		(2.74)	
No Perspective			5.43***
			(4.01)
Stigma	-0.36	-0.36	-0.36
	(-0.23)	(-0.23)	(-0.23)
Public x Stigma	2.78		
	(1.21)		
Private x Stigma		-1.19	
		(-0.49)	
No Perspective x Stigma			-2.28
			(-0.96)
N	2137	2104	2186

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For what participants believe others should contribute, the results show weaker effects compared to individual contributions. None of the treatments lead to statistically significant differences, although the coefficients are positive, 1.36 for Private and 1.08 for No Perspective, suggesting slight but insignificant increases. The Stigma variable is negative (-1.95) across all models, indicating that participants with stigma tend to believe others should contribute less, but the effect is not statistically significant. The interaction between Stigma and the Public treatment is positive (3.44) and approaches significance, suggesting that participants who reveal stigma may expect others to contribute more when mental health is framed as a Public good, although this result remains marginal. The interaction terms for Private (0.85) and No Perspective (0.34) are positive but not significant, indicating no clear pattern of influence.

Table 4: Interacted regressions - "How much the other should contribute"

Contribution Others Should Give

	(1) Public	(2) Private	(3) No Perspective
Public	0.67		
	(0.49)		
Private		1.36	
		(0.98)	
No Perspective			1.08
			(0.81)
Stigma	-1.95	-1.95	-1.95
	(-1.23)	(-1.23)	(-1.23)
Public x Stigma	3.44		
	(1.51)		
Private x Stigma		0.85	
		(0.36)	
No Perspective x Stigma			0.34
			(0.15)
N	2137	2104	2186

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For what participants expect others will actually contribute, the results reveal the strongest effects related to stigma and its interactions. The Stigma variable is consistently negative (-3.62, $p < 0.05$) across all models, showing that participants who reveal stigma expect others to contribute less overall. However, the interaction effects are positive and significant, particularly for the Public x Stigma term (4.62, $p < 0.05$) and marginally significant for the Private x Stigma term (3.56, $p < 0.10$). These results indicate that framing mental health as a Public or Private issue moderates the negative expectations associated with stigma, leading participants with stigma to anticipate higher contributions from others when exposed to these treatments. The No Perspective x Stigma interaction is positive (2.88) but not significant, showing weaker effects compared to the other treatments.

Table 5: Interacted regressions - "How much the other will contribute"

Contribution Others Will Give

	(1) Public	(2) Private	(3) No Perspective
Public	-0.34		
	(-0.28)		
Private		0.16	
		(0.13)	
No Perspective			0.55
			(0.45)
Stigma	-3.62**	-3.62**	-3.62**
	(-2.50)	(-2.50)	(-2.50)
Public x Stigma	4.62**		
	(2.25)		
Private x Stigma		3.56*	
		(1.66)	
No Perspective x Stigma			2.88
			(1.33)
N	2137	2104	2186

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Taken together, the results highlight that stigma interacts with framing treatments most prominently in expectations about others' actual contributions. The Stigma variable alone is generally negative, especially in this outcome, suggesting that stigma is associated with lower expectations about others' behavior. However, positive and significant interaction effects in the Public and Private frames show that framing can counteract these negative expectations, encouraging more optimistic beliefs about others' willingness to contribute. In contrast, for individual contributions, stigma and its interactions show no significant effects, implying that participants' own willingness to contribute is primarily driven by framing rather than stigma. Expectations about what others should contribute show smaller and less consistent effects, with only a marginally significant interaction in the Public frame. These findings suggest that framing can effectively influence behavior and perceptions, particularly by mitigating the pessimistic expectations associated with stigma.

5.4 Beliefs

The results analyze first-order beliefs, which measure participants' own opinions about the state of mental health services in their country, and second-order beliefs, which capture participants' perceptions of what others think about the same topic. Responses range from 0 (extremely bad) to 10 (extremely good). The first-order beliefs indicate that participants' personal evaluations of mental health services tend to cluster in the lower-middle range of the scale. Most responses are concentrated between 3 and 5, with the highest percentage at 3, reflecting a moderately negative view of mental health services. Very few participants rated the services at the extremes (0 or 10). The second-order beliefs follow a broadly similar pattern but are slightly more negative. The distribution peaks at 3 and 4, indicating that participants generally perceive others to hold even more negative views of mental health services compared to their own. Despite these differences, the alignment between first- and second-order beliefs indicates that dissatisfaction with mental health services is a widely shared perception, even if participants think it is more pronounced among others.

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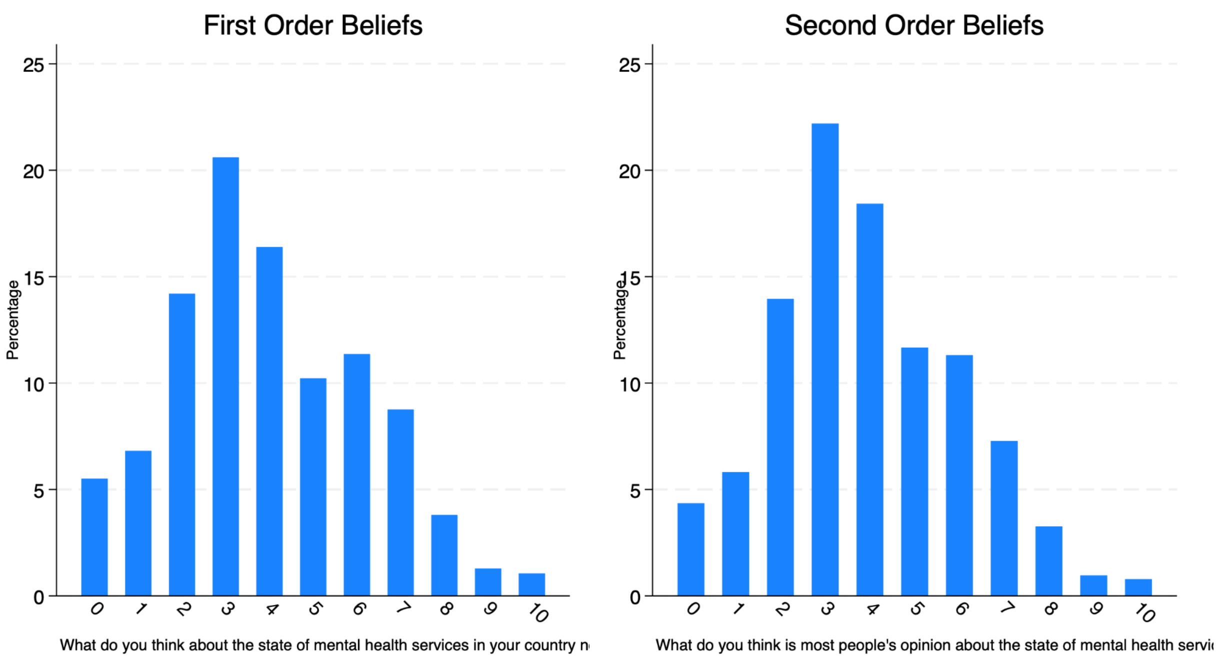
Figure 7: First and second order beliefs



0: Extremely Bad; 10: Extremely Good

Breaking down the results by gender, both women and men display similar patterns in their first-order beliefs. The distributions for both genders peak at 3 and 4, indicating moderately negative personal assessments of mental health services. However, women tend to show slightly higher percentages at 3, while men appear to spread their responses more evenly across the 3–5 range. In terms of second-order beliefs, women and men again exhibit similar patterns, with peaks at 3 and 4. However, women report slightly more negative second-order beliefs, showing a higher concentration at 3, while men' responses are marginally more dispersed across 3–5. These findings suggest that while both genders share moderately negative views, women may be slightly more pessimistic about how others perceive mental

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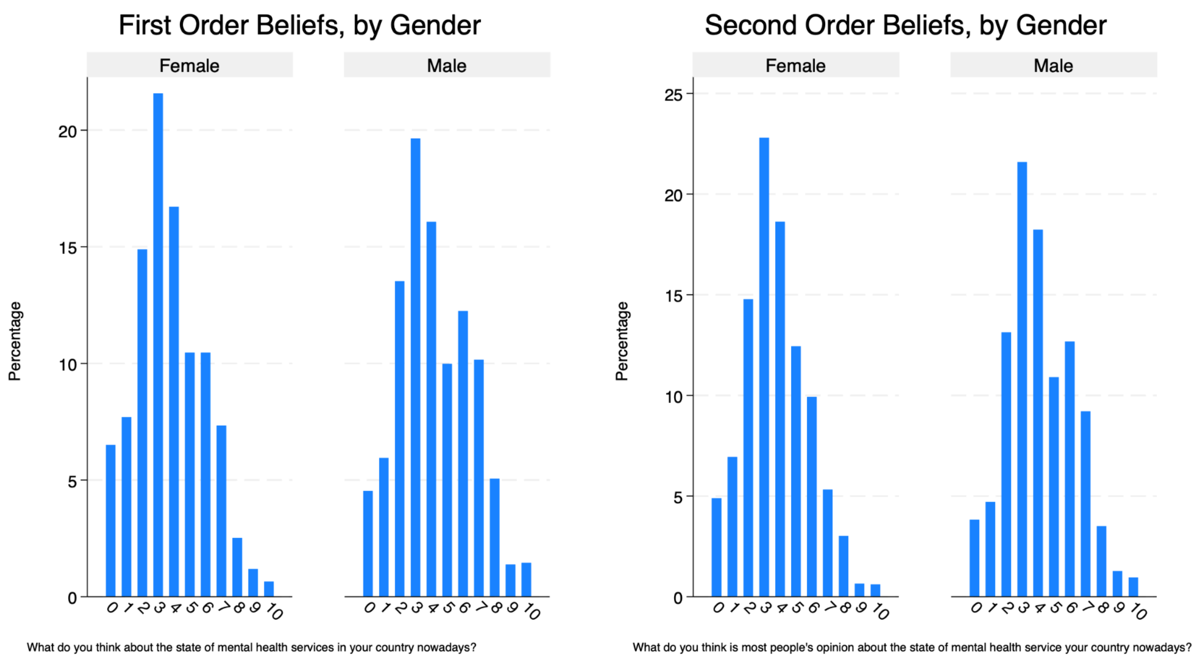
health services, indicating a larger gap between first- and second-order beliefs for women than for men.

Figure 8: First and second order beliefs by gender



0: Extremely Bad; 10: Extremely Good

Analyzing beliefs by country reveals some notable variations. For first-order beliefs, Italy, France, and Spain show similar patterns, with the majority of responses concentrated between 3 and 4, and a relatively high frequency at 2. These results point to a moderately negative evaluation, with participants in these countries sharing a broadly pessimistic outlook. By contrast, Slovakia exhibits a slightly more favorable distribution, with a rightward tail, indicating better ratings at higher values, particularly 4 and 5. Latvia, on the other hand,

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reports even more positive views, with a larger share of responses in the 4–5 range, suggesting a relatively better perception of mental health services compared to other countries. For second-order beliefs, in Germany and France, perceptions of others' views are particularly negative, with peaks at 3 and lower frequencies at higher values. Italy and Spain show a similar trend, but with slightly more responses in the 4–5 range, reflecting less pessimistic views about others' opinions. Latvia and Slovakia, while still displaying moderate dissatisfaction, have higher percentages in the 4–5 range, indicating relatively more optimistic second-order beliefs compared to the other countries. Notably, Germany and France also show greater gaps between first- and second-order beliefs, consistent with pluralistic pessimism, while Latvia and Slovakia exhibit less divergence between the two sets of beliefs.

Figure 9: First order beliefs by country

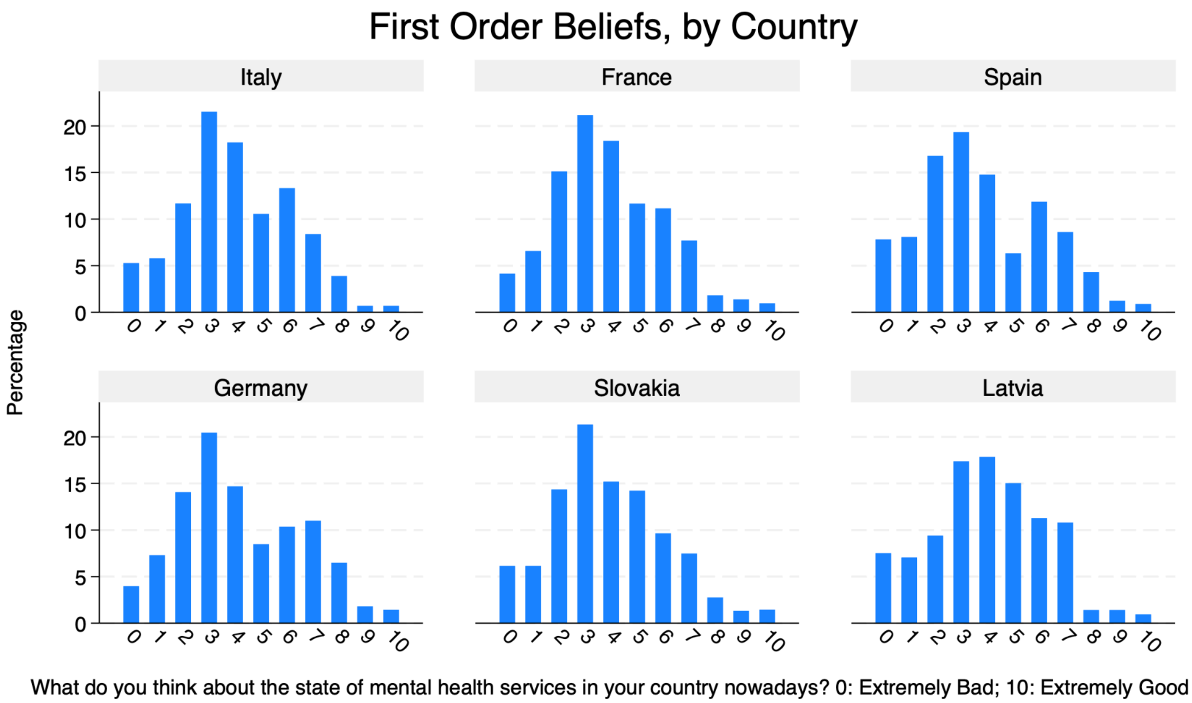

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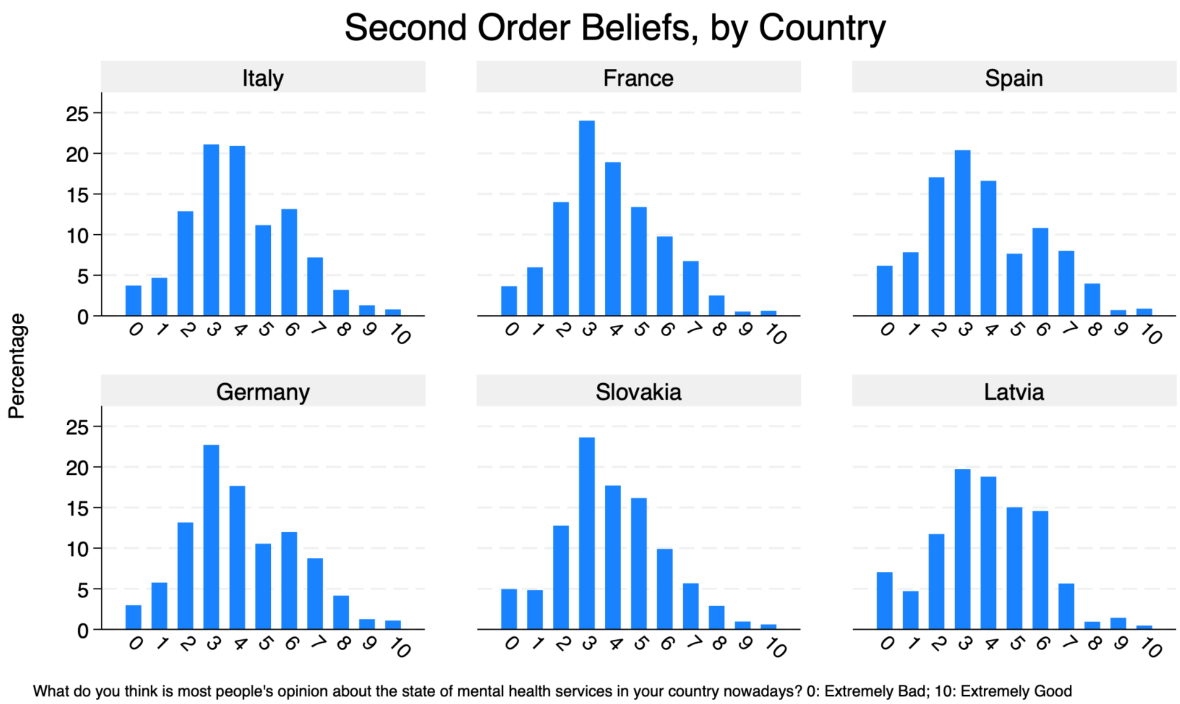
Figure 10: Second order beliefs by country



Overall, the results reveal moderately negative assessments of mental health services, both in terms of participants' own views (first-order beliefs) and their perceptions of others' views (second-order beliefs). While the patterns are broadly similar, the second-order beliefs are slightly more negative, indicating that participants tend to perceive greater dissatisfaction among others than they report for themselves. Gender differences are relatively small, but women tend to exhibit greater gaps between first- and second-order beliefs, suggesting slightly higher pessimism about others' views. By contrast, country-level differences are more pronounced, with Germany and France reporting the most negative assessments and Latvia and Slovakia showing relatively more favorable views

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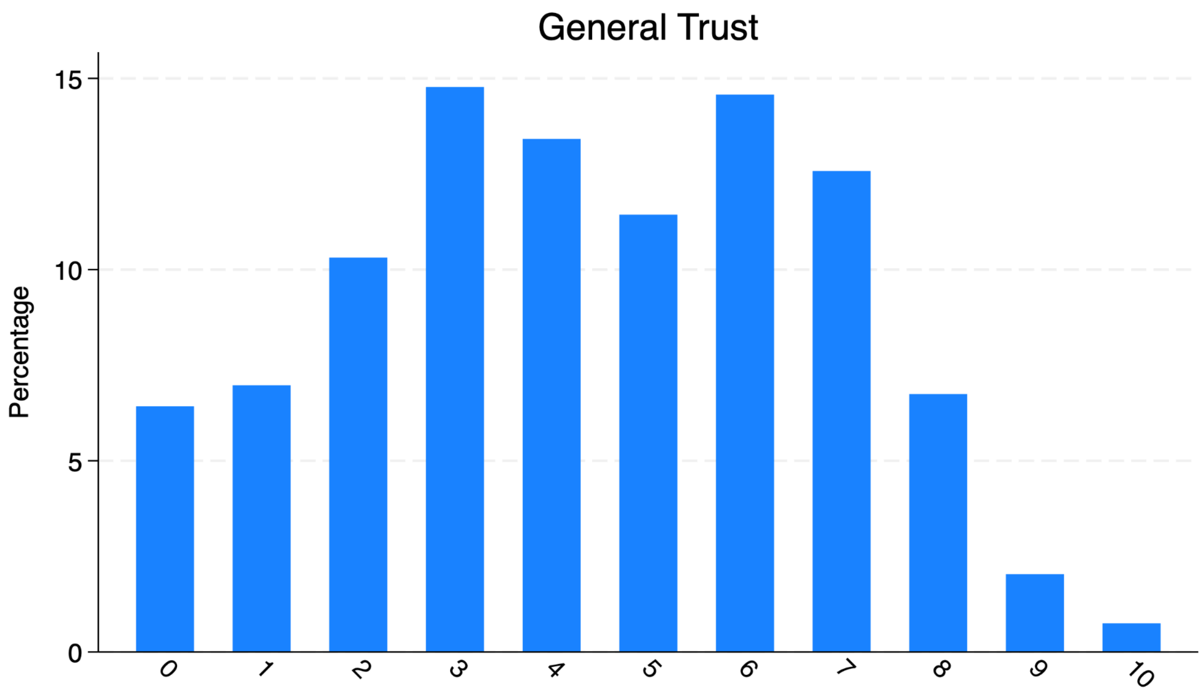
5.5 Trust

The results analyze general trust, which measures participants' perceptions about whether most people can be trusted or whether caution is necessary when dealing with others. Responses are recorded on a scale from 0 (no trust at all) to 10 (complete trust), providing insights into overall trust levels, as well as variations by gender and country.

Figure 11: General trust distribution



The general results indicate that trust levels tend to be moderate, with most responses clustering between 3 and 7. The distribution peaks at 5 and 6, each accounting for

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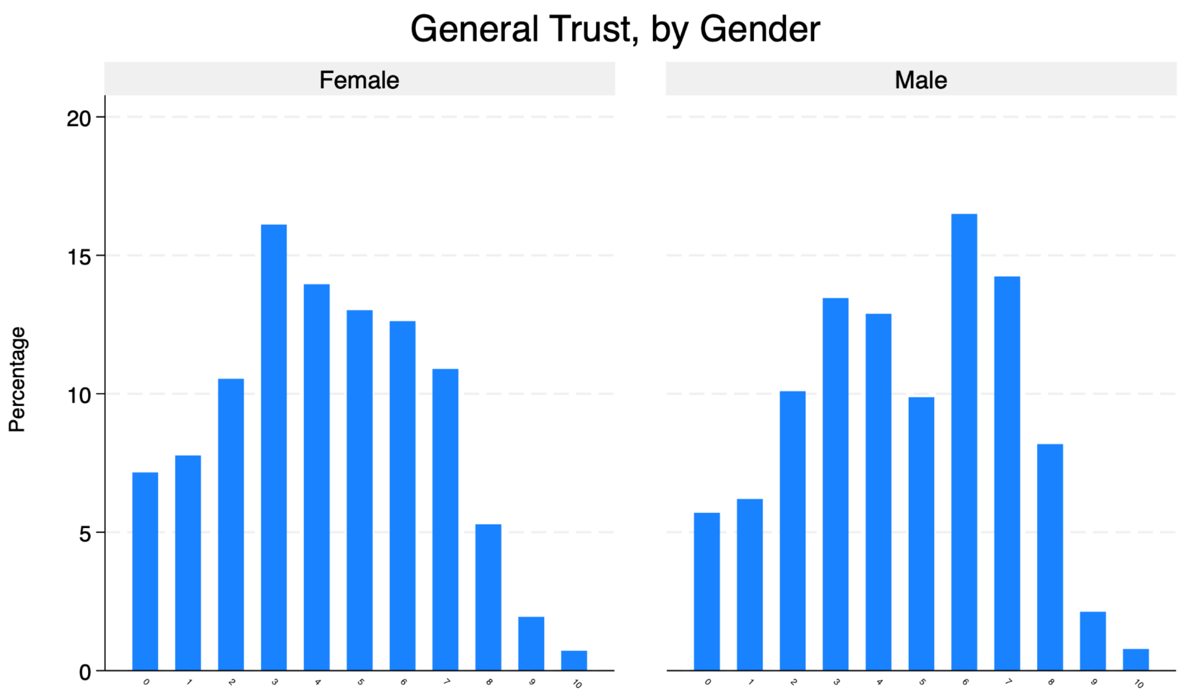
approximately 15% of responses. This pattern suggests a neutral or slightly positive tendency toward trust, although high levels of trust (scores 9 and 10) are rare, and low trust levels (0 and 1) are also uncommon. The overall distribution displays a slight left skew, reflecting that more participants lean toward moderate or low trust rather than high trust. This pattern highlights cautious optimism among respondents, with trust levels rarely reaching extremes.

Figure 12: General trust distribution by gender



Breaking the results down by gender, women and men exhibit broadly similar patterns but with slight differences. women tend to peak at 5, followed by 4 and 6, and show higher percentages at the lower end of the scale (e.g., 0–2), suggesting a slightly more cautious approach to trust. Men, in contrast, also peak at 5 and 6, but their responses are more evenly distributed across the middle-to-higher values, indicating slightly higher average trust

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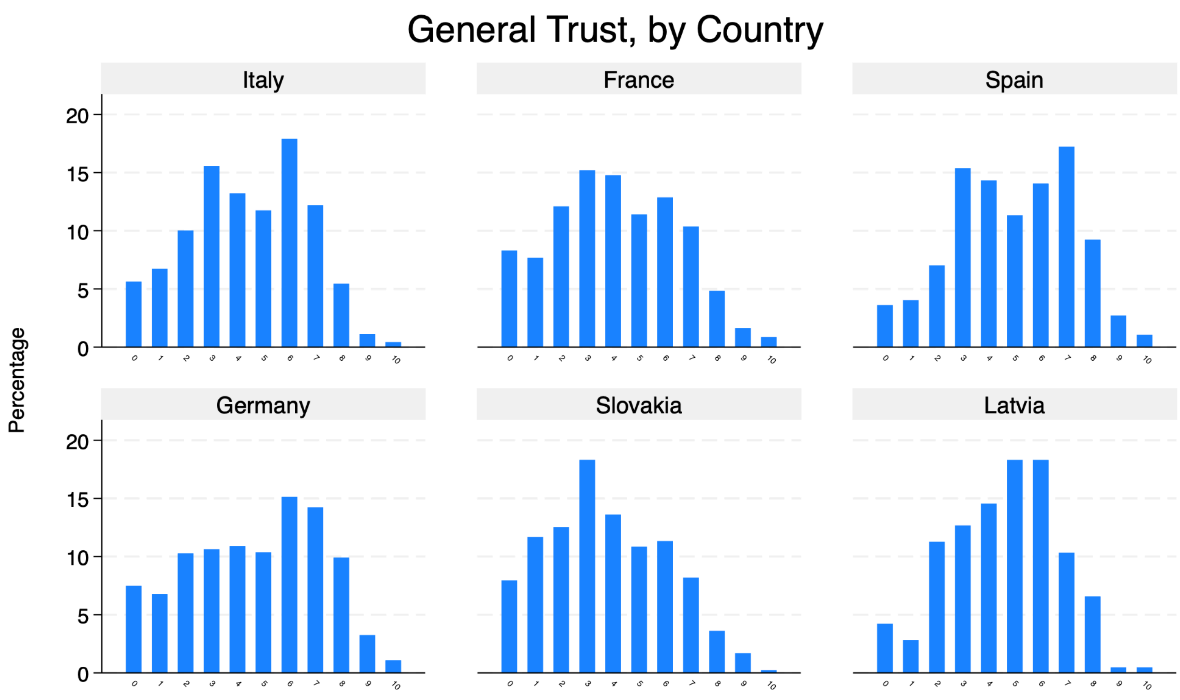
compared to women. These patterns suggest that while both genders report moderate levels of trust, men may lean slightly more toward optimism, whereas women express more caution.

Figure 13: General trust distribution by country



Analyzing country-level differences reveals more distinct patterns. Italy, France, and Spain show similar distributions, with peaks at 5 and 6 and relatively even spread across 3–7. These countries also show modest tails at lower values, reflecting moderate skepticism but no strong tendency toward distrust. Germany displays a flatter distribution, with responses spread more evenly across 3–6 and a peak at 5, indicating lower average trust and greater variability compared to other countries. Slovakia exhibits neutral to slightly positive trust, with a peak at 4

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and 5 and a moderate right tail, suggesting more balanced views. Latvia stands out as the most trusting country, with a peak at 6 and a strong rightward tail extending toward 7 and 8, reflecting higher levels of general trust relative to other countries. This pattern highlights greater optimism about interpersonal trust in Latvia compared to the more reserved or cautious outlooks observed in Germany and France.

Overall, the results suggest that general trust is moderate, with most participants falling between neutral and slightly positive levels rather than displaying extreme trust or distrust. While gender differences are small, women tend to report slightly lower trust than men, indicating a more cautious approach. Country-level differences are more pronounced, with Latvia and Slovakia showing higher levels of trust, while Germany and France exhibit greater skepticism and lower averages.

6.Discussion

Taken together the results of the field experiments indicate that there is indeed room for incentivising investment in mental health by citizens through the use of both information and effective narratives, even in the face of clear evidence that there exists stigma around mental health issues as people's willingness to contribute is quite high and responsive to the narratives deployed. This is important both to lend support to the types of interventions devised by INHABIT cities which have strongly promoted both positive attitudes towards participation in wellbeing initiatives and invested in deploying several innovative activities around mental health that have focussed on the benefits to participants from doing so.

The field experiment results indeed suggest firstly that the information treatment has an effect on contributions compared to the Pure Control group. Secondly, the willingness to contribute is higher when mental health is framed as a Private good rather than a Public one. There are also some gender differences in the propensity to contribute, although these differences are not

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highly pronounced. Furthermore, the analysis by country reveals significant variations in contributions across states, indicating that national context plays an important role in shaping individuals' willingness to contribute to public goods.

Results also indicate a high degree of alignment between what participants believed others should contribute and what they reported contributing themselves, with again some gender differences in expectations, with women generally expecting others to contribute more, and the role of cultural and institutional contexts in shaping expectations, with Latvia and Italy representing opposite ends of the spectrum. The overall results and the country-specific findings show more aligned expectations across countries, reducing the gap between high- and low-contributing contexts across treatments. The country level analysis also reveals a partial reversal of gender results with men expecting slightly higher contributions in most treatments.

The findings also suggest that stigma varies across gender and national contexts. men tend to show stronger stigmatizing attitudes compared to women, and country-level differences highlight higher stigma levels in Slovakia and Latvia, with lower but still significant effects observed in France (one of the comparison countries chosen for external validity). These results underscore the importance of addressing both cultural and gender-specific dimensions of mental health stigma to reduce barriers to disclosure and support. While stigma drives beliefs about others' investments, it does not per se drive own investments which are instead responsive to information and positive narratives which should both be used in policy design.

The results also reveal moderately negative assessments of mental health services, both in terms of participants' own views (first-order beliefs) and their perceptions of others' views (second-order beliefs). While the patterns are broadly similar, the second-order beliefs are slightly more negative, indicating that participants tend to perceive greater dissatisfaction among others than they report for themselves. Gender differences are relatively small, but women tend to exhibit greater gaps between first- and second-order beliefs, suggesting slightly higher pessimism about others' views. By contrast, country-level differences are more pronounced, with Germany and France reporting the most negative assessments and Latvia

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and Slovakia showing relatively more favorable views, which are also reflected in responses to trust questions as these are also the countries reporting the highest levels of trust.

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