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Sexual identity, gender, and anticipated discrimination in prosocial behavior☆

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ABSTRACT

We study whether individuals strategically mask signals about their affinity with the LGBTQ+ community in response to anticipated discrimination in prosocial behavior. We use a sharing (dictator) game in an online experiment where recipients are given the opportunity to signal their LGBTQ+ affinity. Decision-makers, upon observing these signals, decide how much of their endowment to share with their matched recipients. Overall, there is a decrease (although statistically insignificant) in the proportions of recipients who signal their affinity with the LGBTQ+ community when they are informed that these signals will be revealed to decision-makers. Importantly, we find a gender difference: women are more likely to hide such signals given information about how the signals will be used. Auxiliary analysis suggests that this gender difference is likely due to women's higher propensity to anticipate discrimination. Moreover, we find that decision-makers do not differ in their treatment of individuals based on signals of their LGBTQ+ affinity. However, the intersection between decision-makers' perceptions of these signals, and both their political stance on social issues and their views about LGBTQ+ rights, matter in shaping their sharing behavior.

1. Introduction

Sexual minorities are persistently discriminated against in many economic domains, contributing to their significant hardships (Badgett et al., 2021). Less is known, however, about how individuals might anticipate such discrimination and subsequently hide signals of their affinity with the LGBTQ+ community. Given the non-salient nature of one's sexual identity, sexual minority individuals can choose to hide signals about their sexual identity. Indeed, 46% of LGBTQ+ workers in the United States are not "out" in the workplace.[1] Such intentional concealment of one's identity could have mental health consequences and create minority stress (e.g., see Meyer, 2003). Moreover, due to the noisy nature of signals of sexual identity, such responses to anticipated discrimination may not be limited to sexual minorities themselves. Heterosexual individuals may be less likely to signal their own allyship or affinity with the LGBTQ+ community if they anticipate being discriminated against, either for being (mistakenly)

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[1] https://www.hrc.org/resources/a-workplace-divided-understanding-the-climate-for-lgbtq-workers-nationwide.

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perceived as being a part of this community, and/or on the basis of their affinity with the community. In this paper, we examine whether individuals strategically mask signals about their affinity with the LGBTQ+ community in anticipation of discrimination in prosocial behavior using an incentivized online experiment. We consider an environment where an individual is given the opportunity to signal their LGBTQ+ affinity to a decision-maker who, upon observing this signal, decides how to divide a sum of money between them.

In addition to investigating responses to anticipated discrimination in prosocial behavior, we also examine whether individuals are discriminated against based on signals of their affinity with the LGBTQ+ community. Although there is evidence of discrimination against LGBTQ+ individuals in formal settings such as hiring decisions and rental offers (Badgett et al., 2021), the disparities faced by sexual minorities may also be caused by differential treatment outside of formal market interactions. Prosocial behaviors such as helping co-workers and offering mentorship to junior colleagues play a crucial role in their day-to-day workplace experience. Consequently, if prosocial attitudes are affected by an individual's sexual identity, this may affect the level of support sexual minorities receive in the workplace by those in positions of power, which can play a critical role in shaping their career outcomes. Moreover, a self-fulling prophecy could emerge where minorities become less productive or under-perform, especially if they believe that their managers harbor biases against them (e.g., Glover et al., 2017, find this to be the case for racial minorities). While there is evidence of discrimination in prosocial domains based on, e.g., artificially induced identities (Chen and Li, 2009; Chen and Chen, 2011), less is known about the prevalence of discrimination in prosocial behavior on the basis of LGBTQ+ affinity.

To achieve our research goals, we use a set of pre-registered incentivized online experiments involving a sharing game (i.e., the canonical dictator game with some modifications). As in the standard game, participants are randomly assigned a role: either a decision-maker or a recipient. Each decision-maker is matched with a recipient and is in charge of dividing a sum of money between them. Hence, the behavior of decision-makers is interpreted as a measure of their prosocial attitudes, and behavior in similar settings has been shown to predict prosocial behavior in the field (e.g., see Franzen and Pointner, 2013).

We carefully design a task to resemble ways in which individuals may represent their identity in the real world, such as using icons (e.g., "Emojis") on their social media profiles. Specifically, we introduce the Icon Task as a way for recipients to anonymously signal their affinity with the LGBTQ+ community, where recipients choose an experimental ID that is later shown to their matched decision-makers. The ID consists of an alpha-numeric string and a flag icon. One of the icon options is a rainbow icon (the "Pride" flag), which is used by many individuals to represent their affiliation with the LGBTQ+ community and is commonly associated with sexual and gender minority groups.

To study whether recipients mask signals of their LGBTQ+ affinity in response to anticipated discrimination, we design two treatments. In the Uninformed-Choice treatment, recipients choose their experimental IDs in the Icon Task before they are informed of the details of the sharing game. In the Informed-Choice treatment, this order is reversed. Hence, when creating their IDs, recipients in the Informed-Choice treatment know that their IDs would be shown to their matched decision-makers. We measure the response to anticipated discrimination as the difference between these two treatments in the proportion of recipients who choose the Pride flag. We recruit a balanced sample of lesbian women, gay men, heterosexual women, and heterosexual men, and leverage an online participant recruitment platform, Prolific, which allows us to recruit participants from the general population (see Section 3.4).

Overall, we find that when recipients are informed about how their chosen ID will be used, they are less likely to signal their affinity with the LGBTQ+ community as compared to when they are not provided with this information. However, this treatment effect is not statistically significant. We find this result to hold for both gay/lesbian and heterosexual recipients.

The lived experiences that inform decisions to mask signals about affinity with the LGBTQ+ community are not necessarily identical for all individuals, and differences may exist along gender lines. Studies of labor market outcomes of sexual minorities document an earnings gap among men: gay men consistently earn less than heterosexual men with similar characteristics (see, e.g., Klawitter, 2015; Valfort, 2017; Aksoy et al., 2018; Burn, 2020). The picture for women is more complicated. While Klawitter's (2015) meta-study documents the prevalence of a lesbian wage *premium*, later studies have found mixed results, with Carpenter and Eppink (2017) finding a premium and Martell (2021) finding a discount. In addition, there are gender differences in sexual minority individuals' experiences with and responses to discrimination. For instance, cisgender[2] sexual minority women are more likely than their male counterparts to report experiencing everyday discrimination (Meyer et al., 2021), and lesbian women are less likely to be "out" in the workplace than gay men (Folch, 2022). Moreover, recent evidence suggests that women respond strategically when they anticipate gender-based discrimination (e.g., Charness et al., 2020). Taken together, this implies that there may be gender differences in individuals' anticipation of and response to possible discrimination and thus, we examine heterogeneity in recipients' response to treatments based on their gender.

We do indeed find a gender gap in recipients' responses to information about how their chosen ID will be used: women are less likely to signal their LGBTQ+ affinity while men are more likely to do so (although the treatment effect for men is not statistically significant). Extending beyond our pre-analysis plan, we further explore our data to better understand this gender gap. First, data on response times in our experiment rules out attention differentials between women and men. Second, using open-ended survey responses, we find that women are more likely to cite strategic concerns for their icon choices in the Informed-Choice treatment. Finally, the behaviors of women and men are qualitatively in line with their beliefs, wherein women (but not men) believe that recipients who signal affinity with the LGBTQ+ community will receive less in the sharing game. This finding is also consistent with auxiliary survey data conducted with a representative sample of the U.S. by the American National Election Studies, which shows

[2] "Cisgender" refers to individuals whose gender identity corresponds to their sex assigned at birth.

that women, especially those who faced gender-based discrimination, are more likely than men to believe that gays and lesbians will face discrimination.

These gender differences we find in recipients' behavior imply that discrimination along one dimension of identity (i.e., gender) may have spillover effects when it comes to signaling other dimensions of identity (i.e., LGBTQ+ affinity). Given that we find women are more likely than men to mask signals about their LGBTQ+ affinity, this could contribute to them being more likely to suffer from mental health consequences and minority stress. They may also select away from certain careers or schools due to anticipated discrimination, contributing to occupational segregation and further exacerbating existing wage gaps (based on both gender and sexual minority statuses).

To study discrimination in prosocial behavior based on the signals of one's LGBTQ+ affinity, we compare decision-makers' giving behavior toward recipients who choose the Pride flag versus those who do not. We do not find any statistically significant differences in giving based on recipients' flag choice. Overall, our results are consistent with Alston (2019) and Charness et al. (2020), who find that women are, on average, less likely to signal their gender identity due to anticipated discrimination, although there are no actual differences in their treatment by decision-makers.

Understanding how individual characteristics and attitudes may correlate with discriminatory prosocial behavior is crucial given that the interaction between multiple dimensions of identity has been found to drive economic behavior (e.g., Chen et al., 2014; Gangadharan et al., 2019a). Moreover, heterosexual individuals in the United States are not monolithic in terms of their attitudes toward sexual minorities — these differ greatly across political identities (e.g., Glaeser et al., 2005; Coffman et al., 2017; Abou-Chadi and Finnigan, 2019; Ofosu et al., 2019; Aksoy et al., 2020; Bursztyn et al., 2020; Grosjean et al., 2023; Aksoy et al., 2022a). When we examine heterogeneity in decision-makers' behavior based on their own identity as well as their attitudes, we do not find any statistically significant differences in giving based on recipients' flag choice. However, extending beyond our pre-analysis plan, we find evidence of taste-based discrimination based on *perceptions* of sexual minority status. Specifically, we find that heterosexual individuals who have biased LGBTQ+ views (based on their survey responses), as well as those who describe themselves to be socially conservative, tend to discriminate against those whom they perceive to be sexual minorities.

2. Contributions to the related literature

Our research contributes to three broad strands of the literature: the economics of discrimination, identity economics, and LGBTQ+ economics.

First, early work by Becker (1971), Phelps (1972), and Arrow (1973) have spurred a vast literature documenting evidence of discrimination based on characteristics such as gender, ethnicity, and sexual orientation, across different economic domains. Much of the empirical evidence comes from audit and correspondence studies that allow researchers to isolate the causal impact of one's identity on behavior (e.g., see Ayres and Siegelman, 1995; Neumark et al., 1996; Bertrand and Mullainathan, 2004; Oreopoulos, 2011).[3] The literature distinguishes between taste-based and statistical discrimination, and our focus is on the former.

Moreover, we differentiate ourselves from this literature by investigating how sexual minorities respond to situations where they may anticipate discrimination. For example, evidence suggests that ethnic minorities or immigrants change their names to improve their economic outcomes (Biavaschi et al., 2017) or misrepresent their ethnic identity to avoid discrimination (Kudashvili and Lergetporer, 2022), women tend to hide signals about their gender identity owing to anticipated gender discrimination (Alston, 2019; Charness et al., 2020), and gender and sexual minorities frequently constrain their behavior in ways to avoid being stereotyped (Newheiser and Barreto, 2014; Mohr et al., 2019). By examining the behavior of gay men and lesbian women separately, we further our understanding of the role that multiple dimensions of an individual's stigmatized identity may play when responding to environments where discrimination is likely to occur.

Second, we contribute to the literature on social identity and economic decision making (Akerlof and Kranton, 2000). Research has shown that an individual's identity plays an important role in shaping their economic behaviors,[4] and people tend to exhibit preferential treatment (or bias) toward others who share the same characteristics as themselves (i.e., in-group bias). Within this literature, researchers have studied in-group and out-group behavior in prosocial domains either by using individuals' natural identities (e.g., Klor and Shayo, 2010; Chen et al., 2014; Aksoy and Palma, 2019) or by artificially inducing identities (e.g., Chen and Li, 2009; Chen and Chen, 2011). Our novelty in relation to this literature is our focus on an individual's natural identity with non-salient traits.

Third, our study contributes to a nascent but growing body of literature on the economics of LGBTQ+ individuals. This research mainly focuses on the economic preferences of LGBTQ+ individuals (e.g., Buser et al., 2018; Aksoy and Chadd, 2023; Aksoy et al., 2022b), the treatment of LGBTQ+ people in economic domains (e.g., Black et al., 2007; Badgett, 2009, 2020; Badgett et al., 2021), and the economic outcomes of sexual minorities (e.g., Powdthavee and Wooden, 2015; Sabia et al., 2017; Aksoy et al., 2019). A major methodological challenge faced by researchers in this area is with identifying LGBTQ+ individuals. While studies often rely

[3] See, also, surveys by Rodgers (2009), Bertrand and Duflo (2017), and Neumark (2018). More recently, a combination of laboratory and field experiments have been used to identify specific channels through which discriminatory behavior could manifest (e.g., see Fershtman and Gneezy, 2001; Reuben et al., 2014; Bohren et al., 2019). Lane (2016) provides a survey of evidence from the laboratory.

[4] For example, researchers have studied the role of identity in driving investments in education (Akerlof and Kranton, 2002), work incentives (Akerlof and Kranton, 2005), group work (Eckel and Grossman, 2005), inter-temporal or risky decision making (Benjamin et al., 2010), moral behavior (Bénabou and Tirole, 2011), marriage (Bertrand et al., 2015), and contributions to public goods (Benjamin et al., 2016). There is also recent evidence of in-group versus out-group prosocial behavior on the basis of political identities (e.g., Kranton et al., 2020; Dimant, 2023; Robbett and Matthews, 2023).

on self-reported responses in surveys and/or data on the gender composition of couples living within the same household, such approaches may potentially lead to misidentification of LGBTQ+ individuals and biased estimates (Martell, 2021). Consequently, research on discrimination against LGBTQ+ individuals often relies on audit or correspondence studies where one's sexual identity is signaled through explicit statements in candidates' résumés or social network profiles (e.g., Ahmed and Hammarstedt, 2009; Drydakis, 2009; Acquisti and Fong, 2020). However, this approach often limits researchers to the study of interactions in formal markets such as the labor and housing markets. It is less viable to use this approach to study discrimination in behavior outside of these formal contexts (e.g., helping, mentoring, or other prosocial behaviors).[5]

Our study makes three important contributions to this rapidly growing literature. First, we examine how individuals respond to anticipated discrimination based on signals of their LGBTQ+ affinity. Second, we examine discrimination against those who are affiliated with the LGBTQ+ community in prosocial behavior, which constitutes an important part of day-to-day workplace interactions. Third, we provide a methodological contribution by designing an Icon Task that allows individuals to signal their LGBTQ+ affinity in a salient but non-intrusive manner.

3. Experimental design

Our pre-registered experiment features a sharing game (modified dictator game) with an Icon Task where recipients and decision-makers make decisions asynchronously. Separate pools of participants were recruited in two online sessions, where those in the first session participated in the experiment as recipients and those in the second session participated as decision-makers. Instructions used in both sessions are available in Section E of the Online Appendix.

A key feature of our design is that each recipient is first asked to choose an ID in the Icon Task. Each decision-maker is then matched with one recipient, shown the recipient's chosen ID, and asked to decide whether they would like to share any of their endowment of 100 experimental currency units (ECU), equivalent to 5 USD, with their matched recipient. Below, we provide further details of our design.

3.1. Icon task

In the recipient sessions, each participant is asked to choose an ID that consists of two components: (i) a string component and (ii) an icon component. The reasons for having two components in each ID are twofold. First, we want it to resemble a handle that individuals would often see on social media (such as Twitter) and are therefore familiar with. Second, introducing a string component dilutes the emphasis on the icon component and helps minimize experimenter demand.

The string component consists of an alpha-numeric string of eight characters. All recipients are presented with the same three options: **rgzxw471**, **gwxzr174**, and **zrqgx741**. The options have been chosen in a way to not resemble any word or number that participants may potentially relate to (such as a U.S. ZIP code), and they are designed to mirror the formats of randomly generated usernames we often see in practice. The icon component resembles a flag. All recipients are given the same three options:  ,  , and  .[6] The options for both components are presented in a random order for each recipient. As an example, a recipient who chooses the first string option and the third icon option will have the following ID: **rgzxw471**.

Avatars and symbols have been used by researchers to signal one's gender in experimental settings (e.g., see Gangadharan et al., 2016; Mengel, 2020). In such instances, it is often made clear to participants that the icons represent the gender of the participants they represent. An important design consideration for us is how participants are introduced to the use of these icons in a way that does not feel abrupt to them and induce experimenter demand. We design the Icon Task with the purpose of mitigating this concern. Specifically, the third icon option consists of the rainbow colors and resembles the traditional Pride flag, which is a well-established marker for the LGBTQ+ community. A participant may choose the Pride flag because they identify as LGBTQ+ and/or as an ally to the LGBTQ+ community. Hence, the key feature of our Icon Task is that LGBTQ+ individuals can use the Pride flag to signal their unobservable identities in a salient but non-intrusive manner, and the choice of a Pride icon provides a noisy signal of one's affinity with the LGBTQ+ community as in the real world. An example is the use of campus LGBTQ+ "Safe Zones", where faculty members may place a rainbow "Safe Zone" sticker on their office door to signal that sexual minority students can feel safe and supported. In many cases, these rainbow stickers signal the LGBTQ+ status of the faculty members themselves, while in others, they simply signal an LGBTQ+ ally status.[7]

[5] Researchers have also used survey experiments to study the treatment of sexual and gender minorities (Coffman et al., 2017; Aksoy et al., 2022a). Additionally, psychologists have studied the treatment of sexual and gender minorities using controlled experiments. For example, Colbert and Chan (2020) document discrimination in prosocial behavior toward sexual and gender minorities. Unlike their study, we focus on recipients' responses to anticipated discrimination. Moreover, Colbert and Chan (2020) employ deception in their manipulation of recipients' sexual identity.

[6] The colors used in the first flag are purple, burnt orange, blue, light gray, light green, and lavender. The colors used in the second flag are khaki, gray, dark salmon, emerald, olive green, and blue gray. The colors used in the last flag are red, orange, yellow, green, blue, and purple.

[7] Prior to the main experiment, we conducted a pilot study where participants completed only the Icon Task, and they were given more icon options in addition to the ones presented here. The pilot study yielded two outcomes. First, based on participants' decisions in the pilot study, we selected the two most frequently chosen non-Pride flags as the other icon options for our main experiment. Second, we verified that the Pride flag is used by gay and lesbian recipients to signal their sexual identity. In Section 4, we also verify this to be the case in our experiment.

3.2. Recipient sessions

Recipients are randomly assigned to either the *Uninformed-Choice* or *Informed-Choice* treatment. These treatments differ in the timing in which recipients are given the details of the sharing game, relative to participating in the Icon Task. In the *Uninformed-Choice* treatment, recipients complete the Icon Task *before* they are informed that their chosen ID will be shown to their matched decision-maker. In the *Informed-Choice* treatment, this order is reversed.

This treatment variation provides a between-subject evaluation of recipients' responses to receiving information about how their chosen ID will be used. In the Informed-Choice treatment, the potential implications of recipients' decisions in the Icon Task are made clear to them. Hence, if recipients anticipate that decision-makers will discriminate in their giving behavior against recipients who are associated with the LGBTQ+ community, then they may be less likely to choose the Pride flag in the Informed-Choice treatment.[8]

After the Icon Task, we present each recipient with the IDs of two *other* participants, one with a Pride flag and the other with a Non-Pride flag. They are then asked to indicate their beliefs about the average amounts each of these participants would receive from their matched partner. These beliefs are incentivized using the binarized scoring rule (Hossain and Okui, 2013; Erkal et al., 2020).

3.3. Decision-maker sessions

In the decision-maker sessions, participants are informed that they will be matched with another participant (recipient). They are provided with details of the Icon Task and shown the set of all possible IDs that the recipients can choose from.[9] Next, each decision-maker is presented with an ID of their matched recipient and asked to choose how much of their endowment of 100 ECU to allocate between themselves and the recipient. Each decision-maker is randomly assigned to a recipient who has chosen either the Pride flag or a non-Pride flag for their ID.[10] They are informed that the actual matches will be realized after all the experiments are completed, and that their allocation decision will determine both their own and their matched recipient's earnings. Decision-makers' behavior provides a measure of their prosocial attitudes toward their recipients.

As we conjecture that the recipients' flag choice provides a signal about their LGBTQ+ affinity, we elicit decision-makers' beliefs about their matched recipient at the end of the experiment. Specifically, we elicit their beliefs about the recipient's gender ("*Female*", "*Male*", or "*Trans/Non-Binary/Other*"), sexual orientation ("*Heterosexual*" or "*Non-Heterosexual*"), age group, LGBTQ+ ally status, and political leanings on social issues (ranges from "*Very Liberal*" to "*Very Conservative*"). One of these questions is randomly chosen, and the decision-maker is paid 2 USD if their answer for that question is correct.

3.4. Key considerations and experimental implementation

Our experiment is designed and implemented in a way to circumvent several issues that one would encounter when using observational data. In the field, it is difficult both to identify sexual minorities based on their observed characteristics and to reliably elicit one's beliefs about the identity of others based on these characteristics. Moreover, any observed interactions in the field between sexual minorities and other members of society are subject to concerns about selection, since the occurrence of these interactions may depend on the latter's attitudes toward the out-group in the first place. Both the Icon Task and exogenous (random) matching between recipients and decision-makers are suited to overcome these issues.

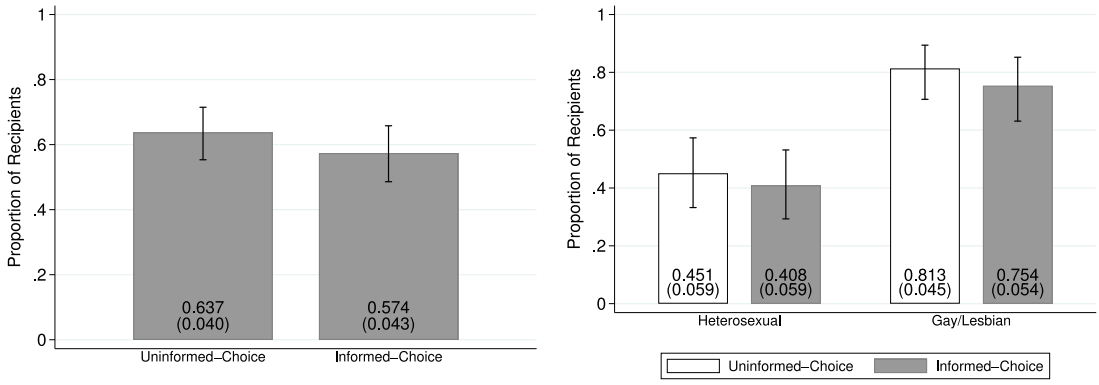
Nonetheless, challenges remain when it comes to conducting research involving sexual minorities using traditional laboratory experiments on university campuses. Because sexual minorities form a relatively small sample of the population, a more targeted on-campus recruitment is typically required. This could cause two issues. First, the targeted recruitment could reveal the nature and purpose of the study, which may then induce experimenter demand. Second, since students select into universities (e.g., depending on how accepting the universities are toward the LGBTQ+ community), there may be systematic differences in both the sexual minority populations and attitudes toward these populations across different universities.

In light of these issues, we conducted the experiments online, coded using oTree (Chen et al., 2016), and we recruited participants who were U.S. nationals via Prolific. Prolific is an online recruitment tool dedicated to recruiting participants from the general population for the purpose of scientific research. It has built-in features (such as reputation scores) to ensure high-quality responses by participants, and research has shown that it dominates other platforms (such as MTurk) and laboratory participants when it comes to the level of noise in the data relative to cost per observation (Palan and Schitter, 2018; Gupta et al., 2021). Crucially, Prolific allows researchers to recruit participants based on the demographic variables participants report on their Prolific profiles, including gender, sexual orientation, and political affiliation. Prolific participants are never informed about the researchers' recruitment

[8] Our treatment effect relies on the assumption that recipients in the Uninformed-Choice treatment do not anticipate that the experiment will involve them being matched with other participants. In Section C.4 of the Online Appendix, we present evidence in support of our assumption underlying the treatment design.

[9] To reduce the role that higher-order beliefs about recipients' strategic ID choices may play in the decision-maker's decision-making process, decision-makers are given details of the Icon Task but not the different treatments faced by the recipients. We examine decision-makers' open-ended survey responses where they explain the reasoning behind their sharing decisions, and we do not see any evidence of higher-order beliefs playing a role in shaping their behavior.

[10] In our experiment, each decision-maker also participates in a second sharing game. Our main analysis focuses on the decision-makers' allocations to their first recipient. We show in Section D.3 of the Online Appendix that our main results are robust to the inclusion of decisions from both games, albeit with the caveat that such a design may induce order and experimenter demand effects (Zizzo, 2010; Charness et al., 2012).



(a) pooled (b) by sexual orientation

Fig. 1. Recipients' choice of pride flag between treatments, pooled and by sexual orientation.
Notes: The height of each bar indicates the proportion of recipients' who chose the Pride flag, separately presented across sexual identity and treatment. These proportions and their corresponding standard errors (in parentheses) are shown at the bottom of each bar. 95% confidence intervals reported with vertical lines.

criteria. Hence, we are able to identify participants' sexual and gender identities without having to reveal the purpose of the experiment to them.

In September and October 2020, a total of 282 recipients and 590 decision-makers participated in separate sessions about a week apart with the recipient sessions conducted first. Table B.1 of the Online Appendix presents summary statistics of key demographic variables of our recipient and decision-maker samples, while Tables B.2 and B.3 present our tests for balance. There are no statistically significant differences in the participants' overall characteristics between treatments (F-test: p-values = 0.434 and 0.940, respectively). Nonetheless, recipients in the Informed-Choice treatment are slightly younger, are less likely to have some college degree, and are more likely to have a Bachelor's degree than those in the Uninformed-Choice treatment (p-values = 0.034, 0.053, and 0.065, respectively), while decision-makers in the Pride treatment are more likely to have some college degree than those in the non-Pride treatment (p-value = 0.095). We control for these demographic variables in our regression analyses.

For the recipient sessions, the recruitment was balanced on participants' gender (male and female) and sexual orientation (heterosexual and gay/lesbian) as reported on their Prolific profiles. This allows us to examine whether participants' response to anticipated discrimination differs across gender and sexual identities. For the decision-maker sessions, participants were recruited separately based on their sexual orientation (heterosexual and gay/lesbian) and U.S. party affiliation. Given that there are stark differences in attitudes toward sexual minorities based on their political views on social issues or party affiliation (see, for example, Glaeser et al., 2005; Coffman et al., 2017; Aksoy et al., 2022a), we recruited a balanced sample of heterosexual decision-makers based on their U.S. party affiliation.[11]

At the end of both sessions, participants were asked to complete a survey eliciting demographic variables and feedback about the decisions they have made during the experiment (see Appendix F), as well as an Implicit Association Test (Appendix G) to measure their implicit bias against gay/lesbian individuals (decision-makers only) (Nosek et al., 2007).[12] We also asked participants to complete two attention check questions during the experiments. Only two recipients and six decision-makers answered exactly one attention check question incorrectly, but no participant answered both questions incorrectly. Hence, we include all the participants for the main analysis presented below. Each recipient session lasted for about 14 min while each decision-maker session lasted for about 18 min. As the experiment was conducted with asymmetric sample sizes between the recipient and decision-maker sessions, some recipients were matched with and received payments from multiple decision-makers. The average earnings were 6.75 USD and 5.82 USD in the recipient and decision-maker sessions, respectively.

4. Results

In this section, we first show that, on average, recipients are less likely to signal their affinity with the LGBTQ+ community in response to information about how their chosen ID will be used, although this effect is not statistically significant. This result

[11] We were concerned about having a mostly left-leaning subject pool, which is usually the case with online platforms. Hence, this recruitment strategy allowed us to obtain a relatively more representative sample. Overall, we recruited 416 heterosexual individuals that are balanced across political affiliations of Republican, Democratic, or Independent/Other, and 174 gay and lesbian individuals. It was not possible to recruit a balanced sample of gay/lesbian decision-makers based on political party affiliations since very few gay and lesbian participants on Prolific identify as Republicans.

[12] For the main analysis, we use participants' gender and sexual identity as reported on their Prolific profiles. Very few participants have Prolific profiles that are inconsistent with their responses in the post-experimental questionnaire, as evidenced by Tables B.4 and B.5 of the Online Appendix. Our conclusions do not change when we instead use identities as reported in the questionnaire. Finally, 4 recipients (1.4%) and 14 decision-makers (2.4%) indicated that they suffer from color blindness. Our main results are robust to the exclusion of these participants.

Table 1
OLS regressions of recipients' choice of pride flag.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable: Chose Pride flag							
Informed-Choice	−0.063	−0.051	−0.048	−0.016	−0.042	−0.059	0.006
	(0.058)	(0.055)	(0.055)	(0.058)	(0.077)	(0.078)	(0.084)
Gay/Lesbian		0.354***	0.364***	0.305***	0.363***	0.354***	0.327***
		(0.055)	(0.059)	(0.071)	(0.076)	(0.079)	(0.092)
Informed-Choice × Gay/Lesbian					−0.017	0.021	−0.044
					(0.109)	(0.110)	(0.117)
Female		0.001	−0.009	−0.027	0.001	−0.008	−0.027
		(0.054)	(0.055)	(0.062)	(0.055)	(0.055)	(0.062)
Constant	0.637***	0.455***	0.304**	−0.136	0.450***	0.309**	−0.148
	(0.040)	(0.055)	(0.130)	(0.235)	(0.061)	(0.133)	(0.238)
Observations	282	282	282	274	282	282	274
R^2	0.004	0.136	0.183	0.248	0.136	0.183	0.248
Standard controls			✓	✓		✓	✓
Additional controls				✓			✓

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Coefficients of OLS model reported. Standard errors in parentheses. In the regressions, we also control for recipients' age, ethnicity, education level, religion, and transgender/gender non-binary status as standard controls. Additional controls include LGBTQ+ allyship, views on LGBTQ+ issues, political views on social issues, whether their reported sexual identities do not completely align with their reported behavior, whether they have a family member or close friend who identifies as LGBTQ+, how frequently they interact with LGBTQ+ individuals, their beliefs about the amounts sent to other recipients based on their flag choice, and their beliefs about the political views, gender, and LGBTQ+ status of the Prolific population.

holds for both heterosexual and gay/lesbian recipients. However, we find that women (men) respond to such information by hiding (showing) their affinity with the LGBTQ+ community. We investigate possible factors contributing to this observed gender difference. Next, we show that decision-makers' average giving behavior does not depend on the recipients' flag choice. Finally, as exploratory analysis, we examine the relationship between decision-makers' giving behavior and their perceptions about the recipients' sexual identity.

4.1. Recipients' flag choice

We first examine whether recipients, on average, strategically mask signals about their affinity with the LGBTQ+ community when informed about how their chosen ID will be used. In line with our pre-analysis plan, we also investigate whether this strategic behavior differs based on recipients' sexual orientation and gender.

Fig. 1 presents the proportions of recipients who choose the Pride flag in the Uninformed-Choice and Informed-Choice treatments, both overall (panel a) and separately based on their sexual orientation (panel b). Panel (a) reveals that there is a decrease in the proportion of recipients who choose the Pride flag in the Informed-Choice treatment relative to the Uninformed-Choice treatment by about 6.3 percentage points (pp). However, this difference is not statistically significant (Fisher's exact test: p-value = 0.329).

In our data, we observe that gay/lesbian recipients (79%) are more likely to choose the Pride flag than their heterosexual counterparts (43%) (Fisher's exact test: p-value < 0.001). Hence, recipients use the Icon Task as a way to signal their affinity with the LGBTQ+ community. The next question we ask is whether gay/lesbian recipients respond to information differently from heterosexual recipients. Panel (b) reveals that there is a slight decrease in the proportion of *both* heterosexual and gay/lesbian recipients who choose the Pride flag in the Informed-Choice treatment relative to the Uninformed-Choice treatment, of about 4.2 and 5.9pp, respectively. However, similar to the finding at the pooled level, these treatment differences by recipients' sexual orientation are not statistically significant (Fisher's exact tests: p-values = 0.735 and 0.416 for heterosexual and gay/lesbian recipients, respectively).

These findings are consistent with results from our regression analysis. Table 1 presents coefficient estimates of ordinary least squares (OLS) regressions of recipients' choice of Pride flag against the information treatment variable and recipients' sexual identity and gender.[13] In the regressions, we control for recipients' age, ethnicity, education level, religion, and transgender/gender non-binary status as standard controls in columns (3) and (6). In columns (4) and (7), in addition to the standard controls, we control for recipients' LGBTQ+ allyship, views on LGBTQ+ issues, political views on social issues, whether their reported sexual identities do not completely align with their reported behavior, whether they have a family member or close friend who identifies as LGBTQ+, how frequently they interact with LGBTQ+ individuals, their beliefs about the amounts sent to other recipients based on their flag choice, and their beliefs about the political views, gender, and LGBTQ+ status of the Prolific population.

[13] For robustness, we also consider probit models, which are reported in Tables B.6 and B.7 of the Online Appendix. The estimates from the probit models are consistent with our conclusions from the OLS regressions.

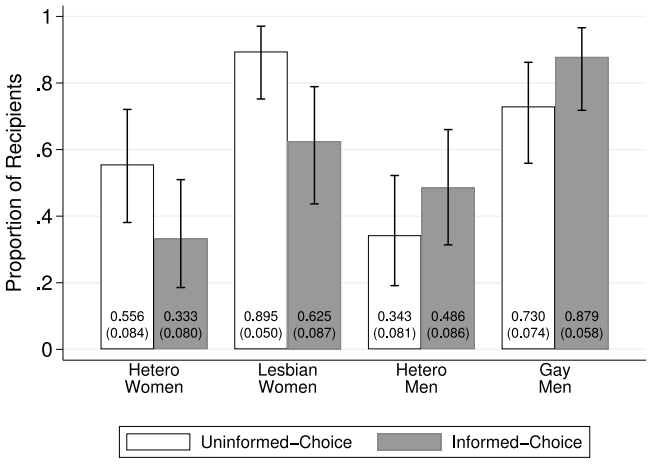


Fig. 2. Recipients' choice of pride flag by treatment, sexual identity, and gender.
Notes: The height of each bar indicates the proportion of recipients' who chose the Pride flag, separately presented across treatment, sexual identity, and gender. These proportions and their corresponding standard errors (in parentheses) are shown at the bottom of each bar. 95% confidence intervals reported with vertical lines.

The estimates in Table 1 confirm our observations in Fig. 1. Overall, columns (1) to (4) reveal that recipients are 1.6–6.3pp less likely to signal their affinity with the LGBTQ+ community when informed about how their chosen ID will be used. However, the overall treatment effect is not statistically significant.[14] The interaction between the treatment variable and recipient's sexual identity in columns (5) to (7) is smaller in magnitude and also statistically insignificant. Hence, we find that recipients are similar in their response to the information treatment independent of their own sexual identity.

We summarize as follows.

Result 1. *There is a decrease in the proportions of recipients who signal their affinity with the LGBTQ+ community when they are informed about how their chosen ID will be used, although this treatment effect is not statistically significant. This holds for both heterosexual and gay/lesbian recipients.*

As previously explained, there is reason to believe that men and women may respond differently to information about how their chosen ID will be used. Hence, we recruited balanced samples of heterosexual women, heterosexual men, lesbian women, and gay men to examine treatment differences by both sexual and gender identities of the recipients. Fig. 2 presents the proportion of recipients who choose the Pride flag within each treatment, separately based on both their gender and sexual identities.

Fig. 2 shows that the effect of revealing the details of the sharing game on the choice of Pride flag depends on the recipient's gender. Both heterosexual and lesbian women are 22.2pp and 27.0pp, respectively, less likely to choose the Pride flag in the Informed-Choice treatment than in the Uninformed-Choice treatment (Fisher's exact tests: p-values = 0.048 and 0.008, respectively). On the other hand, heterosexual and gay men are 14.3pp and 14.9pp, respectively, more likely to choose the Pride flag in the Informed-Choice treatment than in the Uninformed-Choice treatment, although these differences are not statistically significant (Fisher's exact tests: p-values = 0.166 and 0.104, respectively).

In addition, both heterosexual and lesbian women are 21.3pp and 16.5pp, respectively, more likely to choose the Pride flag in the Uninformed-Choice treatment than their male counterparts (Fisher's exact tests: p-values = 0.059 and 0.061, respectively). While this difference is reversed in the Informed-Choice treatment, it is statistically significant only for gay/lesbian recipients (25.4pp) and not for heterosexual recipients (15.2pp) (Fisher's exact tests: p-values = 0.018 and 0.144, respectively).

The estimates in Table 2 are generally in line with our conclusions from these non-parametric tests.[15] Female recipients are less likely to choose the Pride flag in the Informed-Choice treatment independent of their sexual orientation. Although this effect is robust for lesbian women, it is not significant for their heterosexual counterparts in one out of the three regression specifications. Specifically, the test of Informed-Choice + Informed-Choice × Female is statistically significant in columns (4) to (6) for lesbian women (p-values = 0.006, 0.021, and 0.014, respectively). For heterosexual women, this effect is statistically significant in columns (1) and (2), but it is no longer statistically significant in column (3) once we include additional controls (p-values = 0.058, 0.023, and 0.282, respectively). However, we note that the direction of this effect in column (3) is negative, and the estimated magnitude is

[14] The resulting confidence intervals of the treatment effect in columns (1) to (4) are [−0.178, 0.051], [−0.158, 0.057], [−0.157, 0.060], and [−0.131, 0.099], respectively.

[15] In Table B.8 of the Online Appendix, we present additional robustness analysis for separate subgroups of recipients based on their gender and sexual identity. While the analysis is under-powered when split by subgroups, the magnitude and the direction of the coefficient estimates remain consistent with our main conclusions.

Table 2
OLS regressions of recipients' choice of pride flag by sexual orientation.

	(1) *Hetero.*	(2) *Hetero.*	(3) *Hetero.*	(4) *Gay/Lesbian*	(5) *Gay/Lesbian*	(6) *Gay/Lesbian*
Dependent variable: Chose Pride flag						
Informed-Choice	0.143	0.128	0.172	0.149	0.199**	0.162*
	(0.118)	(0.119)	(0.127)	(0.096)	(0.097)	(0.097)
Female	0.213*	0.239*	0.205	0.165*	0.161*	0.112
	(0.117)	(0.122)	(0.146)	(0.093)	(0.095)	(0.100)
Informed-Choice × Female	−0.365**	−0.405**	−0.326*	−0.419***	−0.432***	−0.409***
	(0.165)	(0.168)	(0.183)	(0.136)	(0.137)	(0.136)
Constant	0.343***	0.197	0.128	0.730***	0.632***	−0.610*
	(0.083)	(0.204)	(0.374)	(0.066)	(0.150)	(0.312)
Observations	142	142	136	140	140	138
R^2	0.037	0.125	0.254	0.071	0.188	0.380
Standard controls		✓	✓		✓	✓
Additional controls			✓			✓

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Coefficients of OLS model reported. Standard errors in parentheses. The first three columns report results for the heterosexual recipients and the latter three columns report results for the gay/lesbian recipients. In the regressions, we also control for recipients' age, ethnicity, education level, religion, and transgender/gender non-binary status as standard controls. Additional controls include LGBTQ+ allyship, views on LGBTQ+ issues, political views on social issues, whether their reported sexual identities do not completely align with their reported behavior, whether they have a family member or close friend who identifies as LGBTQ+, how frequently they interact with LGBTQ+ individuals, their beliefs about the amounts sent to other recipients based on their flag choice, and their beliefs about the political views, gender, and LGBTQ+ status of the Prolific population.

sizable with a 95% confidence interval of [−0.435, 0.128]. Hence, we conclude that there is weak evidence of heterosexual women hiding their affinity with the LGBTQ+ community in response to information. For male recipients, the treatment effect is statistically insignificant in all specifications except for gay men in columns (5) and (6). Nonetheless, we note that the direction of this effect is positive, and the estimated magnitudes are sizeable.[16]

Hence, the analysis at the pooled level masks heterogeneity in recipients' responses to information along gender lines. Women are less likely to signal their affinity with the LGBTQ+ community in response to information about how their chosen ID will be used. This effect is robust to the inclusion of controls for gay/lesbian recipients, but the evidence is relatively weaker for heterosexual recipients. Men are instead more likely to signal their affinity with the LGBTQ+ community, albeit this difference is not statistically significant. The opposing responses to treatment may therefore explain why we fail to find an overall statistically significant treatment effect in Result 1.[17]

We summarize our key findings as follows.

Result 2. *Women, especially lesbians, are less likely to signal their affinity with the LGBTQ+ community when they are informed about how their chosen ID will be used.*

4.2. Why do men and women respond differently?

We observe stark gender differences in the choice of Pride flag between the Uninformed-Choice and Informed-Choice treatments regardless of recipients' sexual orientation. What might be driving these gender differences? In this section, we extend beyond our pre-analysis plan and explore data on recipients' response times and responses to the post-experimental survey questions to shed light on this result. Additionally, we use data from the American National Election Studies (ANES) 2020 Time Series Study to provide further insights into how men and women in the field may differ in terms of their beliefs about the prevalence of discrimination against sexual minorities.

To summarize the findings that are discussed in detail below, we find that men and women spend similar amounts of time on both the sharing game instructions and the icon choice selection pages, suggesting that they do not differ in the time they take to read the instructions or contemplate their decisions. However, the post-experimental survey responses indicate that women are more likely to cite strategic reasons for their icon choice in the Informed-Choice treatment than in the Uninformed-Choice treatment, and that they also expect Pride recipients to receive less from the decision-makers relative to non-Pride recipients. Finally, results from the field indicate that women may be more likely than men to expect discrimination against LGBTQ+ individuals, particularly for

[16] The corresponding confidence intervals of the treatment effect for male recipients in columns (1) to (6) are [−0.090, 0.376], [−0.107, 0.364], [−0.080, 0.425], [−0.041, 0.339], [0.007, 0.391], [−0.031, 0.354], respectively.

[17] We do not find any statistically significant evidence of heterogeneous treatment effects based on recipients' LGBTQ+ allyship or political views on social issues. Moreover, we find that our main conclusions hold even when we analyze recipients' individual icon and string choices. These additional analyses can be found in Sections C.1 and C.2 of the Online Appendix.

those who have experienced gender-based discrimination themselves. This supports the conjecture that discrimination along other dimensions of identity (such as gender) may have spillover effects on responses to possible discrimination along other dimensions of identity.

Time spent on instructions and decision screens

We use the amount of time spent by recipients on the instruction decision page as a proxy for the level of attention they devote to the details of the task. The mean response times are 43.44 (39.93) seconds for men (women) in the Uninformed-Choice treatment and 47.71 (50.75) seconds for men (women) in the Informed-Choice treatment, and the gender differences are not significant (p-values = 0.596 and 0.737, respectively). Thus, we observe that men and women spend similar amounts of time on the instructions for the sharing game in both treatments.

We also use the time spent by recipients on the icon selection page as a proxy for the amount of time spent making their choices. For example, recipients may contemplate their decisions longer if they were more likely to anticipate payoff consequences of their icon choices in the Informed-Choice treatment relative to the Uninformed-Choice treatment. We do not find any gender difference in this regard. The mean response times are 13.54 (11.64) seconds for men (women) in the Uninformed-Choice treatment and 13.81 (14.03) seconds for men (women) in the Informed-Choice treatment, and the gender differences are not significant (p-values = 0.406 and 0.921, respectively).

In sum we do not find any evidence to suggest that women either spend more time on the instructions or are more deliberative in their icon choice decisions.

Motives for icon choice and beliefs about amount sent by decision-makers

We also investigate recipients' open-ended text responses on reasons for their icon choice. We code these responses based on whether or not the recipients indicate any strategic concerns/reasons which would indicate that they are considering the potential payoff consequences of their icon choice and/or possible future interactions with others.[18] We find that women cite such strategic reasons more frequently in the Informed-Choice treatment than in the Uninformed Choice treatment (8.8% versus 0%; Fisher's exact test: p-value = 0.011), while men are equally likely to cite strategic reasons between treatments (7.4% versus 2.8%; Fisher's exact test: p-value = 0.265).[19]

One possible explanation of this gender difference in motivations for icon choices is that women may be more likely to *perceive* discrimination along other dimensions of identity given prevailing discrimination and unequal treatment of women along gender lines (e.g., Fisk and Overton, 2019; Gangadharan et al., 2019b; Charness et al., 2020). This conjecture is also consistent with the intergroup threat theory in the psychology literature which suggests that individuals of low-power groups tend to be more susceptible to perceiving threats to their group as compared to those from high-power groups (Stephan et al., 2009). Moreover, evidence suggests that men and women react differently to cues on outgroup threat (Yuki and Yokota, 2009; Sugiura et al., 2017).

To further explore this, we examine whether gender differences in perceived discrimination manifest in recipients' beliefs about the amount sent to other recipients based on their flag choice (Figure A.1 of the Online Appendix). We observe suggestive evidence that recipients' beliefs in the Informed-Choice treatment are consistent with their own choices. Female recipients in the Informed-Choice treatment believe that Pride recipients will receive less than Non-Pride recipients on average (Wilcoxon rank-sum test: p-value = 0.006). While male recipients in the same treatment believe that Pride recipients will receive slightly more than Non-Pride recipients, this difference is not statistically significant (Wilcoxon rank-sum test: p-value = 0.446).[20] Nonetheless, we find that recipients' beliefs do not yield any explanatory power when included as controls in the regressions reported in Tables 1 and 2. Hence, while recipients' beliefs are qualitatively in line with their actions, they are unable to fully explain our main result.[21]

Other evidence from the field

Finally, to complement our own data, we exploit auxiliary survey data from the ANES 2020 Time Series Study (American National Election Studies, 2021). Specifically, from August to December 2020, ANES conducted interviews with a representative sample of more than 8,000 eligible voters from the U.S. asking a wide variety of policy-relevant questions, including their beliefs about the extent to which sexual minorities were discriminated against. We find a gender gap in respondents' beliefs about the prevalence of discrimination against sexual minorities. In particular, women believe that discrimination against gay and lesbian individuals is

[18] More details on how these responses were coded are provided in Section C.3 in the Online Appendix. Some examples of such statements include: "*Despite identifying as a member of the LGBTQ+ community, I chose this flag instead of the traditional rainbow flag in case other participants that I'd be matched with had homophobic biases and would choose to give me less [...]*", "*I wanted to choose the flag that looked more like the LGBTQ flag because the bright colors appealed to me, but I didn't want another (maybe more close-minded user) to make assumptions about me and for that to affect me [...]*".

[19] We also run an OLS regression where the dependent variable is a dummy variable that takes the value of 1 if the recipient cites a strategic concern. We include controls for Informed-Choice treatment and Female as well as their interaction. We find that the interaction term has a coefficient of 0.043. This means that women are 4.3pp more likely to cite strategic reasons in the Informed-Choice treatment relative to the Uninformed-Choice treatment compared to men, although the difference is not statistically significant (p-value = 0.405). Nevertheless, the 95% confidence interval is [−0.058, 0.143].

[20] In the Uninformed-Choice treatment, the difference in recipients' beliefs about the average amounts sent to Pride versus Non-Pride recipients is not statistically significant for either male or female recipients (Wilcoxon rank-sum tests: p-values = 0.974 and 0.288, respectively).

[21] We control for the difference in each recipient's beliefs about the average amounts sent to other Pride versus Non-Pride recipients in our regressions as additional controls, but this variable is not statistically significant. Note that within subjects, the second reported belief may be affected by anchoring or experimenter demand, thus potentially reducing the explanatory power of a within-subject difference in beliefs.

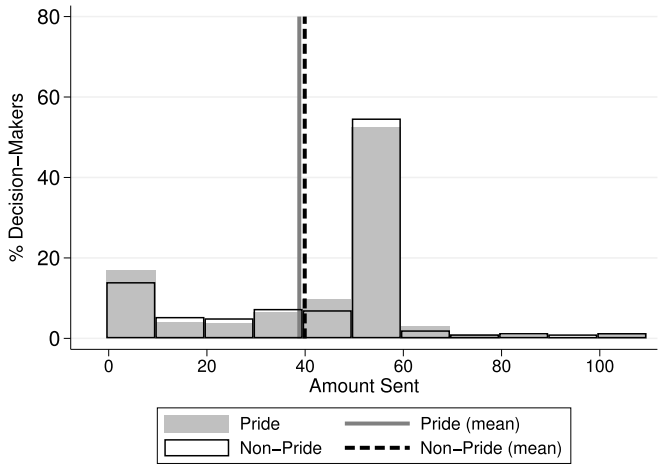


Fig. 3. Distributions of and average amount sent by decision-makers based on recipient's flag choice (Endowment = 100 ECU).

more severe.[22] This gender difference in beliefs may help explain why female recipients in our sample respond more strongly to our information treatment relative to male recipients.

One may then wonder why women are more likely than men to anticipate discrimination against gays and lesbians. Within the same survey dataset, we observe that respondents who have experienced more gender-based discrimination themselves also tend to believe that discrimination against sexual minorities is more severe,[23] and that women are more likely to indicate that they have experienced gender-based discrimination (p-value < 0.001). All in all, using data from the field, we find evidence that women are significantly more likely to experience gender-based discrimination themselves, and individuals who have experienced gender-based discrimination are also more likely to anticipate discrimination along other dimensions of identity.

4.3. Do decision-makers discriminate?

We next examine decision-makers' giving behavior toward recipients based on icon flag choices. Fig. 3 shows the distributions of amounts sent by decision-makers based on whether recipients have chosen the Pride flag (gray bars) or a non-Pride flag (white bars with black borders), with a solid gray line and a dashed black line representing the average amounts sent to the respective groups of recipients. Overall, we do not see any discrimination in giving behavior based on signals about the recipient's affinity with the LGBTQ+ community. Decision-makers send 39.9 tokens to recipients with a non-Pride icon and 38.8 tokens to those with a Pride icon, and the difference is not statistically significant (rank-sum and one-sided Kolmogorov–Smirnov tests: p-values = 0.708 and 0.997, respectively).[24] This finding is robust to the inclusion of controls through OLS regression analysis (reported in Table B.9 of the Online Appendix). The coefficient estimates in Table B.9 reveal a 1.0–1.1 decrease in the average number of tokens sent to Pride recipients.[25] Given that these small effect sizes are statistically insignificant, we conclude that decision-makers are similar in their giving behavior toward recipients with and without a Pride icon. Our result is similar to Charness et al. (2020), who find that firms do not discriminate against workers based on signals of their gender, despite (female) workers' expectations that they will. Similarly, Alston (2019) finds no evidence of discrimination based on signals of gender.

We summarize as follows.

Result 3. *There is no statistically significant difference in prosocial behavior by decision-makers based on recipients' signals about their affinity with the LGBTQ+ community.*

Following our pre-analysis plan, we also explore heterogeneity by decision-maker's sexual orientation (Table B.9, column 4), gender (Table B.9, column 5), political leaning on social issues (Table B.9, column 8), LGTBQ+ allyship status (not reported), religious affiliation (not reported), education level (not reported). We do not find any significant evidence of discrimination by any

[22] We use the following question: "*[How much] discrimination against gays and lesbians is there in the US?*" (V202533). Responses were on a Likert scale from 1 ("*A great deal*") to 5 ("*None at all*"). The average responses for men and women are 2.70 and 2.50, respectively, and the difference is statistically significant (p-value < 0.001).

[23] We use the following question: "*How much discrimination have you personally experienced because of your sex or gender?*" (V202538). Responses were on a Likert scale from 1 ("*A great deal*") to 5 ("*None at all*"). The response to this question is positively correlated with respondents' beliefs about the severity of discrimination against gays and lesbians (p-value < 0.001).

[24] Figure A.2 in the Online Appendix presents the distributions separately by the decision-makers' own sexual orientation. We find similar results in that there is no evidence of discrimination based on signals regardless of the decision-makers' sexual orientation.

[25] The resulting confidence intervals of the treatment effect are [−4.592, 2.380], [−4.544, 2.444], and [−5.148, 3.138] across different specifications.

Table 3
OLS regression results for amount sent — Perceived Heterosexual vs. Non-Heterosexual recipients.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable: Amount Sent								
Recip: Non-Hetero	−0.455	−1.629	−1.771	−2.984	−4.266	−2.815	−1.573	0.537
	(1.887)	(1.962)	(2.548)	(3.099)	(3.233)	(2.577)	(2.602)	(2.773)
Recip: Non-Hetero × DM: Gay/Lesbian				2.970				
				(4.315)				
Recip: Non-Hetero × DM: Female					4.925			
					(3.930)			
Recip: Non-Hetero × DM: Biased LGBTQ+ Views						−4.752**		
						(2.028)		
Recip: Non-Hetero × DM: IAT Score							−1.591	
							(4.149)	
Recip: Non-Hetero × DM: Neutral Political Leaning								−1.262
								(6.378)
Recip: Non-Hetero × DM: (V.) Cons. Political Leaning								−14.673***
								(5.345)
DM: Gay/Lesbian		4.331*	2.227	1.049	2.247	2.356	2.263	2.226
		(2.255)	(2.763)	(3.251)	(2.761)	(2.752)	(2.766)	(2.751)
DM: Female		−0.796	−1.522	−1.488	−3.211	−1.363	−1.491	−1.789
		(1.845)	(1.971)	(1.973)	(2.387)	(1.964)	(1.974)	(1.963)
DM: Biased LGBTQ+ Views			−0.372	−0.420	−0.531	1.008	−0.342	−0.095
			(1.453)	(1.455)	(1.458)	(1.562)	(1.456)	(1.449)
DM: IAT Score			−3.081	−3.044	−3.151	−2.278	−2.508	−2.290
			(2.122)	(2.124)	(2.122)	(2.141)	(2.597)	(2.132)
DM: Neutral Political Leaning			2.105	2.164	2.267	2.197	2.098	2.454
			(2.966)	(2.969)	(2.967)	(2.954)	(2.969)	(3.286)
DM: (V.) Cons. Political Leaning			−0.335	−0.287	−0.086	0.115	−0.270	3.252
			(3.148)	(3.150)	(3.152)	(3.141)	(3.155)	(3.393)
Constant	39.527***	39.664***	28.530***	28.729***	29.069***	28.252***	28.397***	28.346***
	(1.085)	(3.367)	(5.891)	(5.901)	(5.904)	(5.868)	(5.906)	(5.884)
Observations	590	590	566	566	566	566	566	566
R^2	0.000	0.023	0.045	0.046	0.048	0.055	0.046	0.059
Standard controls		✓	✓	✓	✓	✓	✓	✓
Additional controls			✓	✓	✓	✓	✓	✓

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Coefficients of OLS model reported. Standard errors in parentheses. In the regressions, we also control for decision-makers' gender, age, ethnicity, education level, and religion as standard controls. Additional controls include LGBTQ+ allyship, whether they have a family member or close friend who identifies as LGBTQ+, how frequently they interact with LGBTQ+ individuals, whether their reported sexual identities do not completely align with their reported behavior, and perceived ally status, gender, political leaning, and age regarding their matched partners.

of these characteristics. Additionally, as exploratory analysis beyond our pre-analysis plan, we explore heterogeneity by decision-maker's explicit views on LGBTQ+ issues and their Implicit Association Test (IAT) score. Both of these measures are constructed using data collected as part of our post-experimental survey, and the details are presented in Section D.2 in the Online Appendix. As presented in columns (6) and (7) of Table B.9, they do not yield any significant difference in behavior either.

Further exploratory analysis of decision-makers' behavior

We do not find any significant evidence of discrimination against individuals who signal their affinity with the LGBTQ+ community. Although preferences and attitudes toward others could depend on these noisy identity markers in practice, they could also depend on *perceptions* about one's social identity. It is therefore relevant to examine the correlation between decision-makers' giving behavior and the perceptions they hold toward their recipients. As further exploratory analysis beyond our pre-analysis plan, we examine decision-makers' giving behavior based on their perceptions of their matched recipient's sexual identity.

As discussed in Section D.1 of the Online Appendix, Pride recipients are more likely to be perceived as non-heterosexual than non-Pride recipients. Table 3 presents OLS regressions of decision-makers' giving behavior based on perceptions about recipient's sexual identity. Looking at giving behavior based on these perceptions, on average, decision-makers give 0.5 to 1.8 tokens less to those whom they perceive to be non-heterosexual relative to those whom they perceive to be heterosexual, though these differences are not statistically significant (see columns 1–3).

Examining heterogeneity in behavior based on decision-makers' characteristics, we do not find any significant evidence of in-group favoritism/out-group discrimination by decision-makers based on the interaction between their own sexual identity and their perceptions of the recipient's sexual identity (column 4). We also do not find any significant evidence of difference in behavior by gender (column 5) or IAT score (column 7) either. However, column (6) reveals that there is a correlation between decision-makers' giving behavior and their views and attitudes toward the LGBTQ+ community. Specifically, those who hold more biased

views against the LGBTQ+ community (based on their survey responses) are on average less generous toward recipients who are perceived to be non-heterosexual. This observed correlation lends credence to the validity of such survey measures in documenting respondents' explicit biases. Finally, we find that decision-makers who self-identity as being more conservative in their political views also send significantly less to recipients whom they perceive to be non-heterosexual (column 8).

5. Conclusion

Using controlled experiments with an Icon Task that allows participants to signal their sexual identity and/or affinity with the LGBTQ+ community, we find a stark gender difference in recipients' behavioral responses to environments where they may expect to face discrimination. In particular, both heterosexual and lesbian women are less likely to reveal their affinity with the LGBTQ+ community when they are aware of how these signals will be used. This, in conjunction with field survey data we exploit, provides suggestive evidence that groups who are subject to historical discrimination on the basis of one dimension of their identity (i.e., gender) may be more apt or primed to recognize the potential for discrimination on the basis of other dimensions of identity (i.e., affinity with the LGBTQ+ community). This points to a potential direction for future research, where researchers may seek to better understand how multiple dimensions of identity (e.g., ethnicity, gender, and sexual orientation) might interact to result in differential behavioral responses to anticipated discrimination.

Given that the intentional concealment of one's identity could have mental health consequences and create minority stress (e.g., see Meyer, 2003), women may disproportionately suffer from such mental health consequences if they are more likely to hide signals of their LGBTQ+ status or affinity. Additionally, they may select away from certain careers or schools due to anticipated discrimination, contributing to occupational segregation and further exacerbating existing wage gaps (based on both their gender and sexual minority statuses). Another direction for future research is to investigate the impacts of anticipated discrimination on mental health, as well as individuals' economic and educational decisions.

It is worth noting that we focus on the behavior of gay, lesbian, and heterosexual individuals which, we believe, provides a meaningful starting point for this line of research. However, the lived experiences of other sexual and gender minority individuals (e.g., bisexual and/or non-binary individuals) might be different than gay and lesbian individuals. Hence, it is also relevant and important to study the behavior of individuals with other types of sexual and gender identities, which we leave for future work.

On the decision-maker's side, we do not find significant evidence of discriminatory behavior based on the signals that recipients send. However, using decision-makers' perceptions about the sexual orientation of their recipients, we find that those who have more biased views against the LGBTQ+ community and those who self-identity as being more conservative in their political views send significantly less to recipients whom they perceive to be non-heterosexual. These findings may suggest that more targeted interventions may be required to overcome individuals' biases toward sexual minorities (e.g., Bertrand et al., 2005). One possible measure would be to devise strategies to increase contact between individuals from different social groups (e.g., see Boisjoly et al., 2006; Corno et al., 2022; Rao, 2019; Schindler and Westcott, 2021). Further research can help evaluate the effectiveness of such policies in reducing discriminatory behavior of the type documented in our study.

Future research could also investigate behavior in strategic environments. In this study, we consider only pure altruistic preferences and individuals' propensity to mask signals about their LGBTQ+ affinity in an environment where strategic concerns are absent. Nonetheless, it is important to understand behavior in other environments where the actions of both (or more) players jointly affect their earnings. The methodology used in this study, along with the insights that have been generated, can serve as a meaningful baseline upon which future research can further investigate strategic interactions in other domains.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data and experimental software can be found online at https://doi.org/10.1016/j.euroecorev.2023.104427.

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Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.euroecorev.2023.104427.

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