Experience in the Same-Gender Environments and Low-Promotability Tasks*

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Abstract

We investigate whether behavioral norms formed in same-gender environments persist when individuals later interact in mixed-gender groups, focusing on willingness to volunteer for low-promotability tasks (LPTs). Using a two-stage laboratory experiment that varies group gender composition over time, we find that initial exposure to same-gender groups generally reduces subsequent volunteering in mixed-gender settings. However, women who transition from same-gender to mixed-gender groups volunteer more than men, a pattern traditionally attributed to gendered social expectations. While prior literature attributes such gaps to gendered social expectations, our data challenge the universality of this mechanism. In our context, participants overwhelmingly assign the LPT to a male, rather than a female, peer in hypothetical supervisor scenarios, suggesting that expectation-based mechanisms do not drive the observed gender gap. We propose that women's higher volunteering instead reflects greater aversion to strategic uncertainty, which becomes more salient in mixed-gender environments. Consistent with this interpretation, women with single-sex schooling backgrounds, accustomed to more predictable peer environments, exhibit especially high volunteering rates in mixed-gender groups. These results indicate that same-gender experiences shape later LPT behavior and that women may volunteer for LPTs not only to comply with social norms but also to mitigate strategic uncertainty.

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1 Introduction

Low-promotability tasks (LPTs), such as organizing meetings, taking minutes, or handling administrative logistics, are essential for group functioning yet offer little direct reward in terms of career advancement. A substantial body of research documents that women disproportionately accept these tasks in mixed-gender workplaces, contributing to persistent gender gaps in promotions and earnings (Babcock et al., 2017a). The dominant explanation centers on social expectations: women are more frequently asked to perform LPTs and face stronger implicit pressure to accept them, whereas men are less likely to be targeted or sanctioned for declining (Babcock et al., 2017a; Bircan et al., 2025).

At the same time, evidence shows that gender gaps in volunteering largely disappear in same-gender environments (Babcock et al., 2017a), suggesting that mixed-gender contexts activate norms or beliefs that shape LPT behavior. This raises a central question that has not been examined: Do behavioral patterns developed in same-gender environments persist when individuals later move into mixed-gender settings? If early exposure to gender-homogeneous groups weakens or prevents the internalization of gendered expectations, such environments could help mitigate long-run disparities in organizational task allocation. Conversely, if individuals adjust immediately to the gender composition of a new environment, same-gender experiences may provide little lasting protection against gendered LPT norms.

We investigate this question using a sequential two-stage laboratory experiment[1] that adapts the voluntary investment game from Babcock et al. (2017a), a stylized representation of LPT allocation in teams. Participants are first assigned either to same-gender or mixed-gender groups and later transition into the opposite environment. This design allows us to isolate the effect of prior experience through between-subjects comparisons (comparing the second stage of different treatment groups), thereby ruling out simple learning effects. This enables clean identification of whether behavioral norms or expectations formed in one environment shape willingness to volunteer in the next.

Our results reveal two findings. First, consistent with the idea that early social environ-

[1]This experiment and the main hypotheses are pre-registered at AsPredicted.org (#236756).

ments influence later behavior, prior exposure to same-gender groups generally reduces subsequent volunteering in mixed-gender settings. Second, women who transition from same-gender to mixed-gender groups volunteer at higher rates than men. The second finding is noteworthy because our data show no evidence of a prevailing expectation that women should perform LPTs. In hypothetical supervisory scenarios, participants of both genders predominantly assign the LPT to a man. By conducting our experiment in a setting where the prevailing social expectation favors male assignment (South Korea), we identify a critical boundary condition for the prevailing theory. Because the behavioral gender gap persists despite this reversal in social expectations, our data challenge the assumption that expectation-based mechanisms are the sole or universal driver of LPT volunteering.

The absence of gendered assignment expectations in our context prompts consideration of an alternative mechanism. We propose that women's elevated volunteering reflects a greater aversion to strategic uncertainty—the uncertainty stemming specifically from the simultaneous and unobservable choices of other group members. This strategic uncertainty becomes more salient in mixed-gender environments where beliefs about others' behavior are less predictable. Prior research in experimental economics shows that women exhibit stronger preferences for reducing strategic ambiguity in coordination and collective-action settings, even when doing so is personally costly. The transition from a predictable same-gender environment to a less predictable mixed-gender one may therefore disproportionately increase perceived uncertainty for women, leading them to volunteer in order to secure group coordination.

Additional evidence supports this interpretation. Women with single-sex schooling backgrounds, who have long-term exposure to homogeneous peer environments, display especially high volunteering in mixed-gender groups. This amplification effect is consistent with the idea that predictable environments lower strategic uncertainty, making the subsequent introduction of gender heterogeneity more consequential for decision-making.

Our findings thus point to two distinct mechanisms behind women's LPT volunteering: a social-expectation mechanism, emphasized in prior literature, and a strategic-uncertainty mechanism, which operates even in the absence of gendered expectations. By disentangling these drivers, our study expands the theoretical foundations of LPT behavior. More broadly, the results suggest that same-gender educational or professional environments may shape not only immediate behavior but also how individuals navigate later mixed-gender settings, relevant for both organizational design and policies aimed at reducing unequal task burdens.

The remainder of this paper is organized as follows. The following section provides an overview of the relevant literature on low-promotability tasks and single-gender educational environments. Section 3 describes the experimental design and hypotheses. Section 4 presents the results. Section 5 discusses the implications of our findings and proposes directions for future research. Section 6 concludes.

2 Literature Review

2.1 Low-promotability tasks

A large body of experimental research has documented persistent gender disparities in the allocation of LPTs. Babcock et al. (2017a) document that, in mixed-gender groups, women volunteer for or accept LPTs at substantially higher rates than men, whereas such differences vanish in same-gender settings. Subsequent work by Babcock et al. (2017b) extend this analysis by examining whether backlash from refusing LPTs contributes to observed gender gaps. While confirming that women are more likely to receive requests for and accept such tasks, the authors conclude that backlash neither accounts for nor amplifies these disparities.

Building on these foundational insights, more recent research has explored how institutional signals and organizational environments influence LPT behavior. In a randomized field experiment, Villas-Boas et al. (2019) provide evidence that peer-comparison information regarding service participation significantly increases volunteering rates in university departments, with effects driven primarily by women despite comparable pre-treatment behavior across genders. Complementary evidence from Banerjee and Mustafi (2025) indicate that simple social-recognition interventions can substantially raise volunteering and narrow gender gaps in willingness to perform LPTs, underscoring the malleability of gendered behavioral patterns in response to institutional design. Related studies further suggest that team gender composition shapes collaboration and cooperative behavior (Berge et al., 2016), and that leadership roles in coordination settings are evaluated and rewarded differently by gender (Grossman et al., 2019), highlighting how team context affects both participation and its perceived value.

More recent contributions have linked LPT behavior to longer-term career outcomes. Using data from knowledge-intensive workplaces, Bircan et al. (2025) show that women are systematically assigned fewer promotable tasks and more non-promotable ones, and that these task-allocation disparities explain a meaningful share of observed gender promotion

gaps. Consistent patterns emerge in academic settings as well: studies such as Guarino and Borden (2017) and O'Meara et al. (2017) report that women disproportionately shoulder internal service, administrative responsibilities, and mentoring duties, closely aligning with LPT dynamics identified in experimental research. Structural and intersectional analyses, including Crimmins et al. (2023), further emphasize that the unequal distribution of non-promotable work constitutes a systemic, institution-level barrier to women's advancement.

2.2 Single-Gender Education and Competitiveness

A parallel line of research investigates the behavioral consequences of single-sex schooling, although the evidence on competitiveness remains mixed. Exploiting randomized controlled school assignment in South Korea, Lee et al. (2014) report no significant increase in competitiveness among girls attending single-sex schools relative to their co-educated peers. In contrast, evidence from Booth et al. (2014) indicate that girls assigned to all-female groups display greater willingness to take risks than those in mixed-gender environments, pointing to the importance of peer composition in shaping behavioral expression. Along similar lines, Laury et al. (2019) document that single-gender classrooms raise female students' propensity to engage in competitive tasks and to take risks. Complementary evidence further suggests that exposure to single-sex educational settings can generate persistent differences in competitive choices that remain detectable even after individuals subsequently interact in mixed-gender groups (Booth and Nolen, 2012).

Beyond short-run behavioral responses, research leveraging random assignment to single-sex versus coeducational classes indicates that single-sex schooling can influence female students' academic outcomes and self-assessments, highlighting mechanisms that may extend to later-life contexts (Eisenkopf et al., 2015). Extending this literature, Kim et al. (2024) provide evidence that exposure to single-sex schooling has effects that persist beyond adolescence, shaping women's preferences and early career-related outcomes in adulthood.

However, existing work has not examined whether these tendencies carry over when individuals transition into mixed-gender professional environments, nor whether they shape behavior specifically in the domain of LPTs.

2.3 Gender Differences in Strategic Uncertainty Avoidance

The payoff structure underlying the decision to volunteer for an LPT closely resembles the Volunteer's Dilemma (Diekmann, 1985) or the Dragon-Slayer game (Bliss and Nalebuff,

1984). In these settings, a collective good is provided only if at least one individual bears a personal cost; absent such action, all group members experience a worse outcome. Volunteering, therefore, need not reflect altruistic motives but can instead arise from concerns about coordination failure.

A related literature emphasizes the role of strategic uncertainty—uncertainty stemming from others' simultaneous choices—as a distinct determinant of behavior, separate from risk or ambiguity. Early studies of coordination games (e.g., Van Huyck et al., 1990; Cooper et al., 1992) document frequent failures to reach efficient equilibria, not because individuals are risk-averse, but because they lack confidence in others' willingness to act. More formal evidence disentangling strategic uncertainty from risk is provided by Heinemann et al. (2009), who show that individuals adopt precautionary strategies around coordination thresholds even when monetary risk is fully removed. Similar patterns emerge in bargaining environments: Greiner (2023) reports that individuals often opt for safer yet inefficient strategies in order to avoid exposure to potentially adverse choices by rivals. Complementary work distinguishing empirical beliefs about others' behavior from normative expectations further indicates that these belief components can exert independent effects on cooperation, a distinction that is especially salient in environments where others' actions are difficult to anticipate (Kölle and Quercia, 2021).

A smaller but growing body of research considers whether responses to strategic uncertainty vary by gender. In public-goods settings, evidence from Croson and Gneezy (2009) and Chaudhuri (2011) suggests that women tend to adopt more predictable contribution strategies, particularly when group behavior is uncertain. In threshold and weakest-link games, Dufwenberg and Gneezy (2005) observe that gender differences in coordination are not ubiquitous, but are more likely to arise when beliefs about others' actions are imprecise. More recent studies offer sharper evidence of context-dependent gender effects. For instance, Chang et al. (2024) show that making gender identity salient in stag-hunt games increases women's cooperative choices, consistent with identity serving as a coordination device that mitigates strategic uncertainty. Similarly, Cason et al. (2022) report that groups with a higher share of women are more likely to select prosocial equilibria, an outcome attributed to stronger beliefs in mutual coordination rather than to differences in risk preferences.

In such settings, women more frequently choose actions that stabilize collective outcomes, thereby limiting their exposure to coordination failure. Notably, this insight has not yet been applied to the context of LPTs, which similarly require unilateral and predictable action to ensure group efficiency, nor has prior work examined how transitions between ho-

mogeneous and heterogeneous social environments may generate gender-specific responses to strategic uncertainty.

2.4 Gap in the Literature and Contribution

Work on LPTs has primarily attributed women's higher volunteering in mixed-gender groups to social expectations and the interpersonal costs associated with refusing requests (Babcock et al., 2017a,b), while related evidence emphasizes that team context shapes both cooperative dynamics and perceptions of responsibility, including through group gender composition and gendered evaluations of leadership (Berge et al., 2016; Grossman et al., 2019). Separately, research on single-sex education documents persistent effects of gender-homogeneous exposure that remain observable even after individuals later transition into mixed-gender settings (Booth and Nolen, 2012; Eisenkopf et al., 2015). A distinct literature on cooperation under strategic uncertainty, in turn, highlights the central role of beliefs about others' actions and shows that normative expectations can diverge from empirical beliefs when uncertainty is high (Kölle and Quercia, 2021). Yet no study brings these mechanisms together in an LPT-like Volunteer's Dilemma environment or examines whether prior same-gender exposure shapes volunteering behavior once individuals enter mixed-gender groups.

Our study bridges these strands through a sequential design that varies group gender composition over time and directly elicits assignment expectations. We show that a gender gap in volunteering emerges following same-gender exposure even when assignment expectations are absent or reversed, and that this gap is larger among women originating from more predictable same-gender environments. These findings are consistent with a strategic-uncertainty account in which volunteering serves as a stabilizing action that mitigates coordination failure, and they underscore how early social environments condition responses to heterogeneity in later interactions.

3 Experiment

To examine whether behavioral patterns shaped in same-gender settings persist in subsequent mixed-gender settings, we designed a two-stage laboratory experiment where the main task is to play the investment game used in Babcock et al. (2017a). Each stage varied the gender composition of participants' groups, allowing us to identify carry-over effects while holding the task structure constant.

3.1 Experimental Design

An experiment is designed as follows: In each session, participants completed 14 rounds of a three-person investment game. In every round, participants were randomly regrouped into triads and simultaneously[2] chose whether to invest. The payoff structure is as follows:

- If no one invests, all earn 100 tokens;
- If one invests, that individual earns 125 tokens and the others earn 200 each; and
- If multiple participants choose to invest, one participant is randomly selected to be the investor who earns 125 tokens, and the others earn 200 each.

Although framed as an investment game, the payoff structure resembles that associated with the LPTs: the participants are asked to decide whether to volunteer for a task that benefits the group but yields little personal reward, while the group earns lower payoffs unless someone volunteers on the task. As the experimental setup shares the critical features of the LPT setup, we interchangeably interpret volunteering to invest as volunteering for an LPT.

While we adapt this core LPT framework, we implemented specific methodological controls tailored to our research question. Because our primary objective is to isolate how gender composition of a group alters volunteering, participants received no feedback regarding group outcomes between rounds, and payment was based on a single randomly selected round at the end of the experiment. These design choices are crucial for preventing dynamic wealth effects, strategic hedging, and potential cross-round contamination (such as income effects or learning from the success of previous, differently composed groups). Consequently, each decision strictly and independently captures the participant's response to their immediate social environment.

Participants were randomly assigned to one of two treatment conditions. In the *SameFirst* treatment, subjects first completed 6 rounds of the investment game in same-gender groups followed by 8 rounds in mixed-gender groups. In the *MixedFirst* treatment, this order was reversed.

The most practical challenge was to make the gender composition of the group salient without raising unnecessary experimenter demand effects. Among several alternatives we

[2]While some prior LPT experiments utilize a continuous-time setup with a countdown timer (e.g., Babcock et al., 2017a), we utilize a static, simultaneous-move game. A normal-form game is theoretically identical to a sequential game with imperfect information. Practically, this design choice eliminates potential confounds related to reaction times or countdown-induced urgency, allowing for a cleaner elicitation of strategic uncertainty aversion.

could consider,[3] we decided to implicitly inform the gender composition through silhouettes (see Figure 1). The participant's silhouette image at the center is always matched with the participant's gender. Two members' silhouettes in the group are shown on the left and the right side so that the information about gender composition can be immediately delivered. Although the screenshot in Figure 1 shows a male silhouette on the left, gender compositions and positions are randomized.

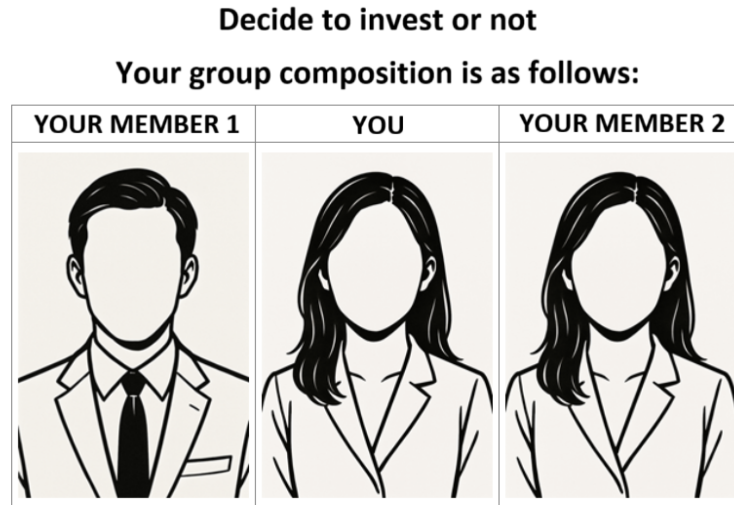

Figure 1: Screenshot of one decision round

In the *SameFirst* treatment, subjects were informed at the beginning of round 1 that they would play the investment game for the next 6 decision rounds with randomly reshuffled group of the same gender, and then at the beginning of round 7, they were again informed that they would play the game for the next 8 rounds with at least one member of a different gender.[4] In the *MixedFirst* treatment, the reversed information was given at the beginning

[3] Making some characteristics of the group members salient without an unnecessary emphasis is easier said than done, as these are on a clear tradeoff relationship. Alternative designs considered in other studies and the reason why we did not adopt are as follows. Croson et al. (2008) composed the single-gender sessions by recruiting subjects from fraternities and sororities, while the both-gender sessions were recruited from a service fraternity and a business fraternity. This design would innocuously allow the subject to infer with whom they participate in the experiment. In a similar vein, Brañas-Garza et al. (2006) recruited Gitano subjects and indirectly allowed them to infer that they would play a game with another Gitano from their own neighborhood. Since we want to inform subjects a specific gender composition per round, indirect information through their own inference was not viable. Solnick (2001) uses real first names to examine gender differences in the ultimatum game, and Kim and Riegel (2025) ask the participants to choose a gender-identifiable nickname for each decision round, so that the gender information of other participants was innocuously revealed. We were concerned if gender-neutral real names are sometimes uninformative, and both the real or pseudo names by itself could have other effects that cannot be controlled.

[4] We acknowledge that explicitly announcing the group composition makes gender salient, which might

of round 1 and round 9.

It is important to note that our primary interest lies in the transition from same-gender to mixed-gender environments (the *SameFirst* treatment). The *MixedFirst* treatment serves as a control. By observing behavior in mixed-gender groups prior to any same-gender experience, we establish a baseline that allows us to isolate the effect of prior same-gender exposure while controlling for general learning, order, and fatigue effects across the 14 rounds. It is not intended as a theoretical test of reverse transitional effects.

After the decision rounds, participants completed a post-experimental survey measuring perceived pressure to invest, expectations about same-gender group members, concerns about others' judgments, and attitudes relating to leadership, conformity, and social expectations. Crucially, to test for the presence of gendered LPT assignment norms, the survey included hypothetical assignment tasks. Participants were asked to imagine acting as an uninvolved supervisor who must instruct one group member to make the investment. To maintain consistency with the main task, they were presented with the same silhouette interface, displaying two different mixed-gender triads: one consisting of two males and one female, and another consisting of one male and two females. Participants then explicitly selected which silhouette should perform the task.[5]

3.2 Hypotheses

Drawing on the motivations and prior empirical findings reviewed above, we formulate four null hypotheses that reflect distinct mechanisms through which gender composition may influence willingness to volunteer for LPTs. These hypotheses address (i) baseline gender differences in mixed-gender environments, (ii) the persistence of behavioral patterns formed in same-gender settings, (iii) long-term effects of single-sex schooling, and (iv) the role of gendered expectations in LPT assignment.

Hypothesis 1. *Women volunteer for LPTs at higher rates than men in mixed-gender environments.*

raise concerns regarding experimenter demand effects. However, this design choice is necessary to prevent confounding beliefs regarding the matching process. If the gender composition were left unexplained, a participant in the *SameFirst* treatment might incorrectly infer that the initial string of same-gender partners was a statistical coincidence or that the silhouette images were uninformative at all. Consequently, the sudden appearance of a mixed-gender group in round 7 could be interpreted as a software error or an outlier rather than a change in the environment. The explicit instruction ensures that behavioral changes are driven by the new social context rather than by surprise or confusion about the matching probabilities.

[5] The full survey instrument is provided in Appendix B.

Hypothesis 1 establishes a behavioral benchmark within our sequential experimental framework. Prior studies document higher female volunteering in mixed-gender groups in static environments where gender composition is fixed throughout the interaction. In contrast, our design introduces dynamic changes in group composition, making it unclear ex ante whether the canonical mixed-gender gender gap should emerge.

Sequential exposure may alter beliefs, dampen social expectations, or induce anticipatory behavior that attenuates contemporaneous gender effects. As a result, the presence or absence of a gender gap in mixed-gender rounds is itself informative. Hypothesis 1 therefore does not merely replicate earlier findings; it tests whether gender composition remains behaviorally salient when embedded in a dynamic environment that allows for experience-based belief formation.

Establishing this benchmark is also essential for interpreting subsequent hypotheses. In particular, Hypothesis 2 examines whether behavior in mixed-gender environments depends on prior exposure, and Hypothesis 3 investigates long-run effects of educational environments. Both require clarity about baseline behavior in mixed-gender groups within the sequential setting.

Hypothesis 2. *Women who initially experience in same-gender environments are less likely to volunteer for LPTs when later placed in mixed-gender groups, relative to those who first experience mixed-gender groups.*

Hypothesis 2 tests whether behavioral norms and expectations formed in same-gender settings persist when individuals transition into mixed-gender environments. Participants who begin in the *MixedFirst* treatment enter the experiment under conditions where gender heterogeneity is salient from the outset, potentially activating gendered expectations or other mechanisms associated with mixed-gender interactions. By contrast, participants in the *SameFirst* treatment initially interact under an egalitarian norm in which LPT responsibilities are not associated with gender. If early exposure shapes subsequent beliefs or sense of responsibility, then *SameFirst* women should exhibit lower volunteering rates than *MixedFirst* women after both groups are placed in the same mixed-gender environment. A null or opposite effect would suggest that behavior is more strongly influenced by the immediate social composition of the group than by prior exposure.

Hypothesis 3. *Women with single-sex schooling backgrounds are less likely to volunteer for LPTs than women from coeducational schools, particularly within mixed-gender environments.*

Hypothesis 3 extends the analysis from short-term experimental exposure to long-term educational environments. Prior work shows that single-sex schooling can influence competitiveness, risk-taking, and labor-market outcomes (Booth et al., 2014; Laury et al., 2019; Kim et al., 2024). Whether such environments shape LPT-related behavior remains an open empirical question. One possibility is that single-sex schooling reduces women's exposure to gendered expectations regarding LPTs, lowering volunteering rates. We set our null hypothesis based on this reasoning. Another possibility is that single-sex schooling strengthens confidence and initiative-taking in group settings, leading women with such backgrounds to volunteer more, especially when placed in mixed-gender groups where peer predictability is lower.

Hypothesis 4. *When subjects, acting as supervisors, are asked to assign an LPT to one member in a mixed-gender group, they would choose the female member more frequently.*

Hypothesis 4 tests the prevailing social expectation mechanism documented in the literature, which suggests that the disproportionate volunteering by women may be driven by an internalized social norm that women are expected to assume these duties. If this norm holds in our context, participants acting as an uninvolved third-party (supervisor) should explicitly act on this expectation by assigning the LPT to a female group member. Critically, a rejection of this hypothesis, which would occur if participants choose men more often than its proportion, provides evidence of a cultural heterogeneity in LPT assignment norms. This result is crucial because it helps to decouple the observed volunteering behaviors (Hypotheses 1 and 2) from the social expectation mechanism, suggesting that women's higher volunteering rate might instead be driven by other factors, such as strategic uncertainty, risk preferences, or greater sensitivity to the gender composition of the group.

A few remarks are in order. Hypotheses 1 and 4 test the basic mechanisms and cross-cultural validity of the LPT literature concerning observed behavior and explicit social norms, respectively. Hypothesis 2 tests whether short-term experimental exposure to same-gender settings influences later LPT behavior in mixed-gender environments. Finally, Hypothesis 3 extends this inquiry by exploring whether long-term educational experiences shape LPT behavior beyond short-term experimental exposure. Together, these hypotheses allow us to evaluate the short-run, persistent, and long-term influences of same-gender contexts on LPT volunteering and the cultural validity of the underlying social norms.

3.3 Experimental Procedure

Participants were recruited from Korean universities and completed the experiment remotely via Zoom using the LIONESS online experimental platform. At registration, participants provided demographic information, including gender and schooling background, enabling gender-balanced session assignments. Because each treatment required precise gender ratios, unmatched participants were turned away when necessary.

Over the 14 rounds, no feedback was provided regarding group members' decisions or payoffs, ensuring that learning occurred only through belief formation rather than outcome observation. The participants receive cash-equivalent mobile payment credits corresponding to the payoff from one randomly selected round.

4 Results

This section presents the experimental findings by examining investment behavior at the individual and group levels. Across all treatments, groups successfully coordinated an investment 73.81 percent of the time, slightly lower than in Babcock et al. (2017a) but substantially above the mixed-strategy equilibrium prediction. Balance tests confirm that observable characteristics were similar between *SameFirst* and *MixedFirst* participants: see Appendix Table A.1.

The next two figures show the overall tendency of investment by gender. Note that these figures are for illustrating the overall uncontrolled patterns, so the inference from them should be limited. Figure 2 shows the investment rate by gender in the *SameFirst* treatment. Females seem to invest a bit more than males in the later (mixed-gender) rounds, but the difference is not statistically significant ($p = 0.282$).[6] This null result pertains even after controlling for rounds and other control variables: see Appendix Table A.2.

Figure 3 shows the investment rate by gender in the *MixedFirst* treatment. Females seem to invest more than males in the later (same-gender) rounds, but this difference is again not statistically significant ($p = 0.282$) even after controlling for other observable variables: see Appendix Table A.3. Taken together, we cannot conclude that women volunteer for LPTs at higher rates than men in mixed-gender environments, rejecting Hypothesis 1.

[6]Unless otherwise stated, we report statistical results from Probit regressions with standard errors clustered at the individual level. Regression tables report average marginal effects (AMEs). For interaction terms of binary variables, the AME is calculated as the cross-difference in predicted probabilities, allowing for a difference-in-differences interpretation (Ai and Norton, 2003). Results from linear probability model regressions are qualitatively similar and available upon request.

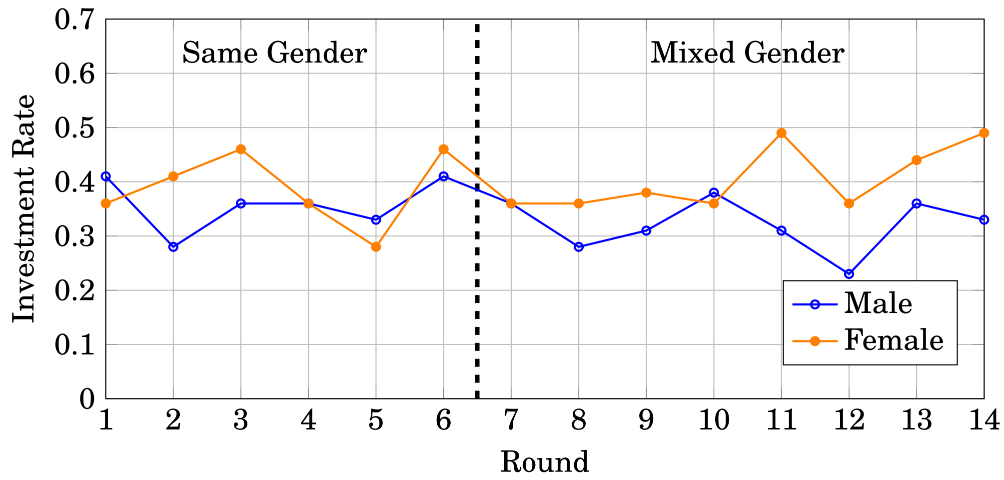

Figure 2: Investment Rate over Round by Gender, *SameFirst* Treatment

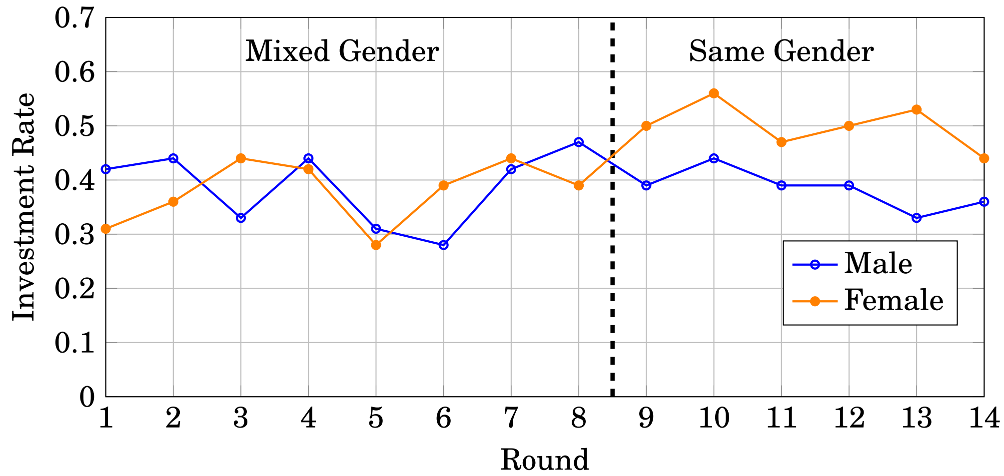

Figure 3: Investment Rate over Round by Gender, *MixedFirst* Treatment

Result 1. *Overall, women do not volunteer for LPTs at higher rates than men in mixed-gender environments.*

This result suggests that further investigations focusing on the interaction of gender and experience would be worth examining. Table 1 shows marginal effects of Probit regressions. The dependent variable is the binary indicator whether the subject decides to invest. *SameFirst* is a dummy variable indicating whether the observation is from the *SameFirst* treatment. Our main focus is on model (6): Given experiencing the same-gender environment first, females volunteer for LPTs more than males in the mixed-gender environment. Another observation is that *SameFirst* experience overall decreases investment in mixed-gender environments. Taken together, we can conclude that experience in same-gender environments overall decreases the tendency of volunteering for LPTs, but females volunteer more in the mixed-gender environments, which rejects Hypothesis 2.

Table 1: Marginal Effects of Investment

	Pooled Data (All Rounds)		**Same Environment Only**		**Mixed Environment Only**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
SameFirst	-0.0508	-0.0915	-0.0591	-0.0958	-0.1022	-0.1409*
	(0.525)	(0.166)	(0.599)	(0.348)	(0.235)	(0.053)
Female	0.0428	-0.0106	0.1131	0.0566	-0.0103	-0.0603
	(0.548)	(0.867)	(0.211)	(0.490)	(0.888)	(0.365)
Interaction	0.0185	0.1000	-0.0814	-0.0090	0.0956	0.1806*
(SameFirst×Female)	(0.859)	(0.273)	(0.478)	(0.932)	(0.383)	(0.057)
Round	0.0030	0.0032	-0.0042	-0.0037	0.0056	0.0058
	(0.277)	(0.250)	(0.595)	(0.631)	(0.244)	(0.227)
Key Controls						
selfPressure	-	0.0970***	-	0.1192***	-	0.0806***
		(0.000)		(0.000)		(0.000)
volunteer	-	0.0503**	-	0.0405	-	0.0585**
		(0.022)		(0.149)		(0.015)
sameGenExp	-	-0.0184	-	-0.0491**	-	0.0044
		(0.255)		(0.012)		(0.794)
Observations	2100	2100	900	900	1200	1200

Notes: SameFirst is a dummy indicating whether the same-gender environment games were played first. The table presents marginal effects of Probit regression. p-values based on clustered standard errors are reported in parentheses.

Result 2. *Women who initially experience in same-gender environments are more likely to volunteer for LPTs when later placed in mixed-gender groups.*

Result 2 that females invest more in mixed-gender environments after experiencing the same-gender environments naturally leads us to a next question: Would a stronger pattern

be observed for females who have single-gender schooling experience than females with coeducation backgrounds? We find a supportive result on this question. Figure 4 shows the investment rate by single-gender schooling experience over rounds, female only. The left panel depicts observations from the *SameFirst* treatment, while the right one from the *MixedFirst* treatment. Except for the same-gender environment (first 6 rounds) in the *SameFirst* treatment, females with single-gender school experience tend to invest more than females from coeducational school backgrounds.

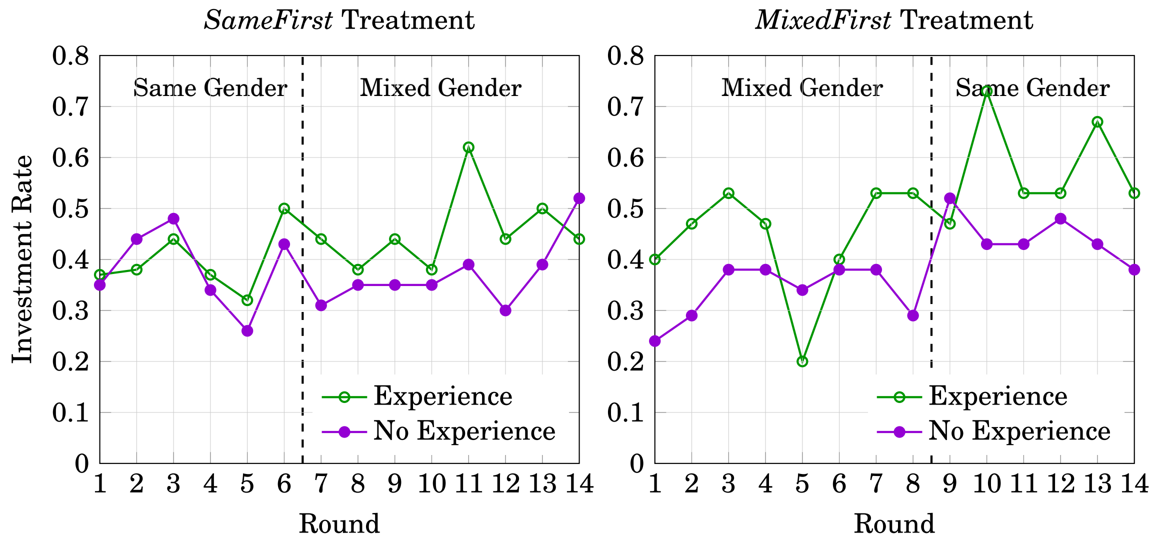

Figure 4: The effect of single-sex schooling experience, female only

The observation from Figure 4 is confirmed after controlling for other control variables and adding an interaction term. Table 2 shows marginal effects of single-sex schooling on female participants at the means of the Profit regressions.[7] The dependent variable is the binary indicator whether the female subject decides to invest. Girl School is a dummy variable indicating that the subject graduated from either single-gender middle or high school. Females with single-gender school experience tend to invests more (in model (2)), and such a tendency is more distinct in the mixed-gender environments (in model (6)).[8]

[7]For completeness, we also analyzed the effect of single-sex schooling on male participants (see Appendix Table A.3). Unlike women, men with single-sex schooling backgrounds do not exhibit increased volunteering in mixed-gender environments. We observe an increase in volunteering among these men strictly within same-gender environments, but because this does not contribute to the gender gap in mixed-gender settings, the primary focus of this study, we restrict our main discussion to female schooling effects.

[8]Although single-gender school attendance in Seoul is not fully exogenous, it is not simply the outcome of unrestricted parental choice either. Earlier studies often treated assignment under Korea's equalization system as approximately random within districts, whereas later work noted that commuting constraints and residential sorting may weaken that assumption. More recent evidence using students' revealed school pref-

Table 2: Marginal Effects of Investment, Female Only

	Pooled Data (All Rounds)		Same Environments Only		Mixed Environments Only	
	(1)	(2)	(3)	(4)	(5)	(6)
SameFirst	-0.0049	0.0113	-0.0943	-0.1085	-0.0363	0.0088
	(0.953)	(0.884)	(0.486)	(0.439)	(0.699)	(0.925)
Girl School	0.1180	0.1371*	0.1305	0.1126	0.1093	0.1612**
	(0.145)	(0.074)	(0.268)	(0.313)	(0.170)	(0.041)
Interaction	-0.0637	-0.0401	-0.1162	-0.0445	-0.0259	-0.0412
(SameFirst × Girl School)	(0.631)	(0.747)	(0.447)	(0.767)	(0.851)	(0.749)
Round	0.0089**	0.0091**	-0.0042	-0.0041	0.0122*	0.0121*
	(0.015)	(0.016)	(0.723)	(0.726)	(0.072)	(0.074)
Key Controls						
selfPressure	-	0.0770***	-	0.0926***	-	0.0666**
		(0.005)		(0.004)		(0.019)
Observations	1,050	1,050	450	450	600	600

Notes: Dependent variable: individual investment decision (1–invest, 0–don't invest). Survey controls include selfPressure, sameGenExp, concernOthers, volunteer, leader, socialConcern, nonConfirmity. The table presents marginal effects (dy/dx) at the means. Standard errors are clustered at the individual level. p-values are reported in parentheses.

Result 3. *Women with single-sex schooling backgrounds are more likely to volunteer for LPTs than women from coeducational schools, particularly within mixed-gender environments.*

Taken the first three results together, we report that (1) females are not particularly volunteer for LPTs more than males, but (2) after experiencing the same-gender environments first, females volunteers for LPTs more than males in mixed-gender environments, and (3) this pattern is more distinct among females with single-gender schooling experience. These findings are consistent with what one can infer from the prevailing social expectation mechanism documented in the literature, reporting that females are more requested to do LPTs (Babcock et al., 2017a; Bircan et al., 2025), with expecting that females would accept the request. Are these findings indeed due to internalized social norms?

If this norm holds in our context, participants should explicitly act on this expectation by assigning the LPT to a female group member when asked to choose one volunteer as an uninvolved third-party (supervisor). Specifically, when three members consist of 2 females and 1 male (or 1 female and 2 males), a female member would have been chosen more than 2/3 (or 1/3), the chances of a random selection. We find the opposite. Both males and females

erences from the Seoul School Choice Program suggests that, after accounting for selection into school type, single-gender schooling still has positive academic effects for girls, though not for boys (Lee and Park, 2026). We therefore interpret single-gender school experience cautiously, not as a clean causal measure, but as a substantively meaningful proxy for prior exposure to a gender-segregated school environment.

request a hypothetical male subject to invest.

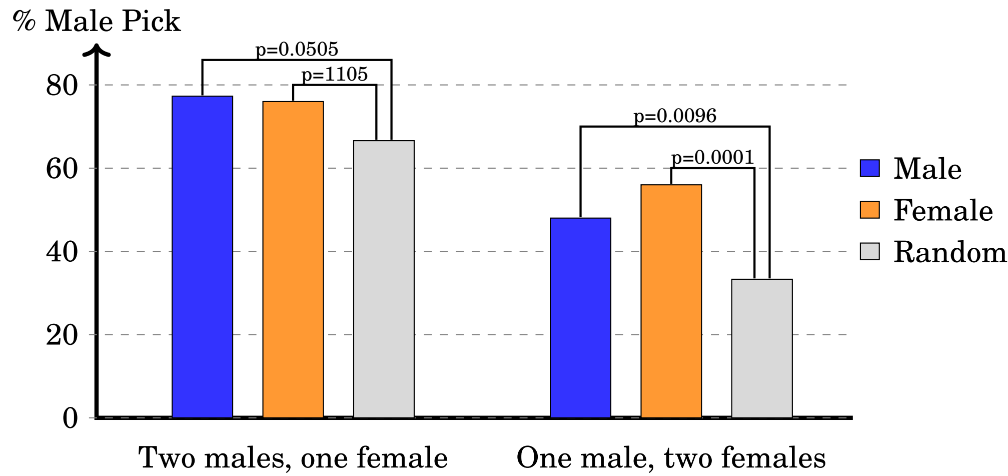

Figure 5: Assignment to Volunteer for LPTs
Notes: p-values of binomial tests are shown above bars.

Figure 5 shows how frequently the subjects, as a supervisor of the group of three, assign the investment task to a male person. When asked to pick one among 2 males and 1 female, 77.3% of males and 76% of females picked a male, which would've been 66.6% if they pick one person randomly. When asked to pick one among 1 male and 2 females, 48% of males and 56% of females picked a male, which would've been 33.3% if they pick one randomly. These observations reject Hypothesis 4.

Result 4. *When subjects, acting as supervisors, are asked to assign an LPT to one member in a mixed-gender group, they choose the male member more frequently.*

Two noteworthy implications are derived from Result 4. First, it provides evidence of a cultural heterogeneity in LPT assignment norms. Second, this result is crucial because it helps to decouple the observed volunteering behaviors of women from the social expectation mechanism, suggesting that women's higher volunteering rate might instead be driven by other factors, such as strategic uncertainty or greater sensitivity to the gender composition of the group.

5 Discussions

This study examines whether experiences in same-gender environments shape subsequent willingness to volunteer for LPTs in mixed-gender groups. The results yield three main

insights. First, exposure to same-gender environments reduces overall volunteering when individuals later interact in mixed-gender groups. Second, conditional on such exposure, women are more likely than men to volunteer in mixed-gender settings. Third, this gender difference is amplified among women with single-sex schooling backgrounds. Importantly, these patterns arise in a context where explicit expectations that women should perform LPTs are absent. Taken together, the findings indicate persistence of behavioral responses across environments, but not persistence of gendered social norms.

5.1 Behavioral Persistence without Norm Persistence

The reduction in volunteering following same-gender exposure suggests that early social environments shape subsequent behavior in a path-dependent manner. Participants who initially interact in same-gender groups appear less inclined to unilaterally ensure group success once they transition into mixed-gender settings. This pattern is consistent with a recalibration of beliefs about responsibility or necessity rather than with the activation of gender-specific expectations. Notably, the effect operates for both men and women, indicating that same-gender environments influence general behavioral tendencies rather than reinforcing traditional gender roles.

Crucially, our assignment-task results show that the canonical social-expectation mechanism emphasized in the LPT literature does not operate in our setting. When asked to assign the LPT as uninvolved supervisors, both male and female participants predominantly select a male group member. This finding directly contradicts the notion that women volunteer more because they expect to be asked, sanctioned, or judged more harshly for refusing. As such, while behavior formed in same-gender environments persists, it cannot be attributed to the persistence of gendered norms regarding who should perform low-promotability work. In other words, their behavior was not driven by compliance with gender norms. Instead, it suggests a different behavioral driver: the motivation to resolve uncertainty.

5.2 Strategic Uncertainty as the Primary Mechanism

We interpret the observed gender differences as arising from differential responses to strategic uncertainty. Mixed-gender groups appear to introduce greater unpredictability regarding others' actions, particularly for individuals accustomed to homogeneous environments. In this context, we propose that women act as "stabilizers" to prevent coordination failure.

Although our data (Result 4) indicate a social norm that men should invest, the actual

volunteering patterns suggest that women do not rely on this expectation to be fulfilled. Instead, they appear motivated to insure the group against the inefficient outcome of coordination failure, receiving only the base endowment of 100 tokens. This aligns with prior work suggesting that groups with women are more effective at coordinating on secure, efficient outcomes (Eckel and Füllbrunn, 2015; Cason et al., 2022).

Consequently, when the environment becomes heterogeneous and beliefs about others become noisy, women appear more willing to incur the personal cost of volunteering. By doing so, they eliminate the strategic ambiguity and secure the group's welfare, prioritizing the certainty of a successful outcome over the risk of inaction.

To further evaluate whether women's volunteering behavior reflects responses to strategic uncertainty rather than persistent gendered expectations, we examine group-level coordination outcomes. Table 3 reports marginal effects from Probit regressions where the dependent variable is an indicator for successful coordination, defined as whether at least one group member invests in a round.

Table 3: Marginal Effects on Group Success Rate (Coordination)

	Pooled Data (All Rounds)		**Same Environment Only**		**Mixed Environment Only**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
SameFirst	-0.0148	-0.0307	0.0862	0.0698	-0.0605	-0.0756
	(0.690)	(0.349)	(0.263)	(0.362)	(0.242)	(0.130)
Female	0.0668**	0.0456*	0.1005**	0.0906**	0.0406	0.0099
	(0.030)	(0.099)	(0.029)	(0.041)	(0.307)	(0.792)
Interaction	-0.0618	-0.0261	-0.1615**	-0.1370*	0.0079	0.0509
(SameFirst × Female)	(0.227)	(0.582)	(0.036)	(0.064)	(0.891)	(0.336)
Round	-0.0010	-0.0009	0.0052	0.0050	0.0003	-0.0001
	(0.684)	(0.698)	(0.502)	(0.519)	(0.952)	(0.987)
Key Controls						
selfPressure	-	0.0368***	-	0.0388***	-	0.0356***
		(0.001)		(0.008)		(0.006)
Observations	2100	2100	900	900	1200	1200

Notes: Dependent variable: group success (1-at least one invests, 0-otherwise). The table presents marginal effects of probit regression. P-values based on clustered standard errors are reported in parentheses.

The results show that although women do not invest at higher rates on average, groups composed of female participants achieve significantly higher coordination success. This pattern is most pronounced following exposure to mixed-gender environments. Because successful coordination requires at least one individual to take a predictable unilateral action, higher success rates without higher average investment indicate more effective stabilization of group outcomes rather than stronger preferences for contributing per se.

While coordination success is a group-level outcome and therefore suggestive rather than causal, the consistency between these results and individual-level volunteering patterns strengthens the interpretation that women's behavior reflects heightened sensitivity to strategic uncertainty rather than the persistence of gendered social norms.

5.3 Policy Implications: Institutional Design and Efficiency

Our findings offer a new perspective on the persistent gender gap in LPTs. While prior literature has emphasized the role of internalized social norms, suggesting that women volunteer because they are expected to, our results indicate that the similar pattern can be observed without such social norms. We claim that strategic uncertainty would be a primary driver. In the absence of clear assignment mechanisms, women appear disproportionately willing to incur a personal cost to resolve ambiguity and prevent coordination failure.

This behavior effectively functions as a self-imposed risk premium, where individuals with higher aversion to strategic uncertainty (disproportionately women in our sample) subsidize the predictability of group outcomes. Unlike the social expectation burden described in Babcock et al. (2017a), where women pay a cost to meet external demands, this cost is incurred to eliminate the risk of coordination failure in noisy environments.

This distinction has significant implications for institutional design and organizational policy. If the gender gap in LPT volunteering were driven solely by unjustifiable social expectations, appropriate interventions might focus on individual-level behavioral adjustments aiming to ultimately alter social norms, such as assertiveness training (Sandberg, 2013). However, because women's volunteering functions as a rational response to strategic uncertainty in a coordination game, focusing solely on individual behavior, such as advising women to simply "say no", is insufficient and potentially destructive. In a Volunteer's Dilemma, unilateral behavioral changes without a corresponding shift in group beliefs simply lead to coordination failure. Therefore, our findings support a shift away from individual behavioral adjustments and toward structural, institutional interventions (such as rotational assignment) that reduce the strategic uncertainty altogether.

First, shifting from an "opt-in" volunteering mechanism to a transparent assignment system can eliminate the strategic ambiguity that drives the gender gap. Management scholars have increasingly argued that choice architecture shapes gender disparities in competition (He et al., 2021). In the context of LPTs, voluntary mechanisms inherently create uncertainty about whether a task will be completed. By replacing voluntary requests with rotational assignment systems, organizations remove the "vacuum of authority" that com-

pels uncertainty-averse individuals to act as stabilizers.

Second, addressing the mechanism of strategic uncertainty is critical for allocative efficiency. Relying on voluntary contributions to solve coordination problems can lead to talent misallocation (Bircan et al., 2025). If high-ability women disproportionately spend time on low-value coordination tasks to ensure group stability, the organization suffers from an inefficient allocation of human capital. Consequently, institutional designs that formalize task allocation are not merely equity measures but are essential for preventing high-performing employees from being diverted into low-value maintenance work due to their preference for coordination certainty.

5.4 Implications and Limitations

Taken together, the findings imply that gender differences in LPT volunteering cannot be explained by a single universal mechanism. While social expectations may play a central role in some contexts, strategic considerations, particularly responses to strategic uncertainty, can generate similar behavioral patterns through different channels. More broadly, the results underscore the importance of prior social environments, both short-term and long-term, in shaping how individuals navigate heterogeneous groups.

Several limitations warrant mention. The laboratory setting abstracts from explicit task requests, repeated interactions, and hierarchical workplace relationships. Moreover, although the evidence is consistent with a strategic-uncertainty mechanism, uncertainty itself is not directly manipulated. Future research could experimentally vary information about others' behavior or belief dispersion to more sharply identify the causal role of strategic uncertainty in LPT volunteering.

6 Conclusions

This paper investigates whether experiences in same-gender environments shape later willingness to volunteer for low-promotability tasks (LPTs) in mixed-gender groups. Using a sequential laboratory experiment, we show that behavioral patterns formed in gender-homogeneous settings persist and meaningfully affect subsequent decisions. Exposure to same-gender groups reduces overall volunteering in later mixed-gender interactions, yet women, particularly those with single-sex schooling backgrounds, become more likely than men to volunteer once such a transition occurs.

Importantly, these patterns do not reflect persistence of gendered social expectations. In hypothetical assignment tasks, participants of both genders predominantly assign LPTs to men, directly rejecting the expectation-based mechanism that dominates the existing literature. Instead, our evidence points to strategic uncertainty avoidance as a key driver of women's volunteering behavior. When transitioning from predictable same-gender environments into less predictable mixed-gender settings, women appear more willing to take unilateral action to secure coordination and prevent group failure.

By integrating insights from the literature on LPTs, same-gender environments, and strategic uncertainty, this study broadens the theoretical understanding of gender differences in organizational behavior. It highlights that early social environments shape not only immediate behavior but also how individuals respond to uncertainty in later, more heterogeneous settings. From a policy perspective, the findings suggest that reducing ambiguity about responsibility and coordination, rather than focusing solely on social norms, may be an effective approach to mitigating unequal task burdens in organizations.

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A Further Results

Table A.1: Balance Test: Treatment Randomization Check

Variable	SameFirst	MixedFirst	Diff	P-value
Female	0.50 (0.50)	0.50 (0.50)	0.00	1.000
Age	22.41 (3.08)	22.24 (2.73)	0.17	0.714
experience	1.92 (0.27)	1.94 (0.23)	-0.02	0.601
nFriends	1.19 (0.40)	1.04 (0.20)	0.15	0.004*
Girl's School	0.21 (0.41)	0.21 (0.41)	0.00	0.962
selfPressure	2.13 (1.35)	2.21 (1.21)	-0.08	0.702
sameGenExp	2.74 (1.41)	2.83 (1.42)	-0.09	0.699
concernOthers	1.87 (1.22)	1.90 (1.29)	-0.03	0.880
volunteer	3.49 (1.15)	3.32 (1.25)	0.17	0.396
leader	2.78 (1.40)	2.58 (1.30)	0.20	0.369
socialConcern	3.42 (1.12)	3.47 (1.17)	-0.05	0.794
nonConfirmity	2.99 (1.21)	2.86 (1.40)	0.13	0.557

Table A.2: Marginal Effects of Investment: *SameFirst* Treatment

	Full (1–14R)		**Phase 1 (Same, 1–6R)**		**Phase 2 (Mixed, 7–14R)**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Female	0.0604	0.0874	0.0299	0.0635	0.0832	0.1045
	(0.4172)	(0.1950)	(0.6940)	(0.3610)	(0.2901)	(0.1480)
Round	0.0003	0.0004	0.0026	0.0023	0.0072	0.0072
	(0.9269)	(0.9060)	(0.8282)	(0.8430)	(0.2173)	(0.2090)
Controls	No	Yes	No	Yes	No	Yes
selfPressure	-	0.0722^{***}	-	0.0940^{***}	-	0.0556^{*}
concernOthers	-	0.0620^{*}	-	0.0414	-	0.0765^{**}
Observations	1092	1092	468	468	624	624

Notes: Dependent variable: individual investment decision (1–invest, 0–don't invest). Survey controls include selfPressure, sameGenExp, concernOthers, volunteer, leader, socialConcern, nonConfirmity. The table presents marginal effects of Probit regression. Standard errors are clustered at the individual level. p-values are reported in parentheses.

Table A.3: Marginal Effects of Investment: MixedFirst Treatment

	Full (1–14R)		**Phase 1 (Mixed, 1–8R)**		**Phase 2 (Same, 9–14R)**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Female	0.0434	0.0028	-0.0105	-0.0418	0.1158	0.0638
	(0.5534)	(0.9640)	(0.8891)	(0.5310)	(0.2237)	(0.4350)
Round	0.0060	0.0061	0.0038	0.0037	-0.0115	-0.0110
	(0.2106)	(0.2060)	(0.6287)	(0.6350)	(0.2611)	(0.2770)
Controls	No	Yes	No	Yes	No	Yes
selfPressure	-	0.1161^{***}	-	0.0957^{***}	-	0.1438^{***}
concernOthers	-	-0.0392^{*}	-	-0.0193	-	-0.0661^{**}
Observations	1008	1008	576	576	432	432

Notes: Dependent variable: individual investment decision (1–invest, 0–don't invest). Survey controls include selfPressure, sameGenExp, concernOthers, volunteer, leader, socialConcern, nonConfirmity. The table presents marginal effects. Standard errors are clustered at the individual level. p-values are reported in parentheses.

Table A.4: Marginal Effects of Investment, Male Only

	Pooled Data (All Rounds) (1)	(2)	Same Environments Only (3)	(4)	Mixed Environments Only (5)	(6)
SameFirst	-0.0647	-0.0902	-0.0773	-0.0872	-0.0737	-0.1056
	(0.573)	(0.293)	(0.637)	(0.517)	(0.541)	(0.298)
Boy School	0.1470	0.1339	0.1855	0.1918*	0.1186	0.0895
	(0.174)	(0.143)	(0.149)	(0.059)	(0.299)	(0.398)
Interaction	0.0030	-0.0333	0.0045	-0.0473	0.0010	-0.0194
(SameFirst × Boy School)	(0.985)	(0.806)	(0.980)	(0.745)	(0.995)	(0.895)
Round	-0.0028	-0.0025	-0.0041	-0.0027	-0.0010	-0.0003
	(0.482)	(0.538)	(0.691)	(0.794)	(0.887)	(0.968)
Key Controls						
selfPressure	-	0.1136***	-	0.1394***	-	0.0929***
		(0.000)		(0.000)		(0.000)
Observations	1,050	1,050	450	450	600	600

Notes: Dependent variable: individual investment decision (1–invest, 0–don't invest). Survey controls include selfPressure, sameGenExp, concernOthers, volunteer, leader, socialConcern, nonConfirmity. The table presents marginal effects (dy/dx) at the means. Standard errors are clustered at the individual level. p-values are reported in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

B Appendix: Experimental Instructions

(*Instructions for the *SameFirst* are translated in English. Original (Korean) instructions are available upon request.)

Welcome

Thank you for participating in this experiment. Before we get started, please answer the following questions.

[*Participants answer their gender, birth year, major, previous experience in economics experiment participation, and a number of recognizable friends who happen to join the same session.*]

Please read carefully the following experiment instructions. Comprehension check questions to make sure you understood the instructions will be followed.

The payoffs from this experiment will depend on your choices, other participants' choices, and luck. The currency unit used for this experiment is a "token."

Experiment Overview

The main part of the experiment consists of two sessions, and you will choose your decision for 14 rounds. Each round's decisions are anonymous, and you make a decision within a

randomly-formed group of three. Some conditions may vary in each decision round, so please pay attention.

Main Task: Decide to Invest or Not

Participants are randomly assigned to a new group of three people at the beginning of each round. After that, each group member simultaneously decides to **invest** or **not**.

- If none of the three people invests, each person receives 100 tokens.
- If one person decides to invest and the other two do not, the investor receives 125 tokens, and the two who did not invest each receive 200 tokens.
- If two or more people decide to invest, only one person is randomly selected from among them to actually invest. In this case as well, the person who invests receives 125 tokens, and the two who do not invest receive 200 tokens.

Example Suppose that among A, B, and C, A and B decide to invest, and C decides not to invest. In this case,

- One person is randomly selected from A and B to be the investor.
- If A becomes the investor: A receives 125 tokens, and B and C each receive 200 tokens.
- If B becomes the investor: B receives 125 tokens, and A and C each receive 200 tokens.

Feedback at the End of Each Round At the end of each round, participants are only informed that the round has ended. Information about the group members' choices and the payoff outcomes will be provided only after the experiment ends, and only for one randomly selected round.

Payment After the experiment ends, the computer randomly selects one round. The tokens earned in the selected round are converted into cash at a rate of 100 KRW per token and paid out. Since every round has an equal chance of being selected, it is advantageous to participate carefully in every round.

Comprehension Quiz You must answer all quiz questions correctly in order to proceed to the next stage. If necessary, please review the explanation above again.

Q1 Which of the following statements is incorrect?

(1) If all group members do not invest, each receives 100 tokens.
(2) If I decide to invest, I always receive 125 tokens.
(3) If I do not invest but someone else decides to invest, I receive 200 tokens.
(4) Group members are newly formed in every round.

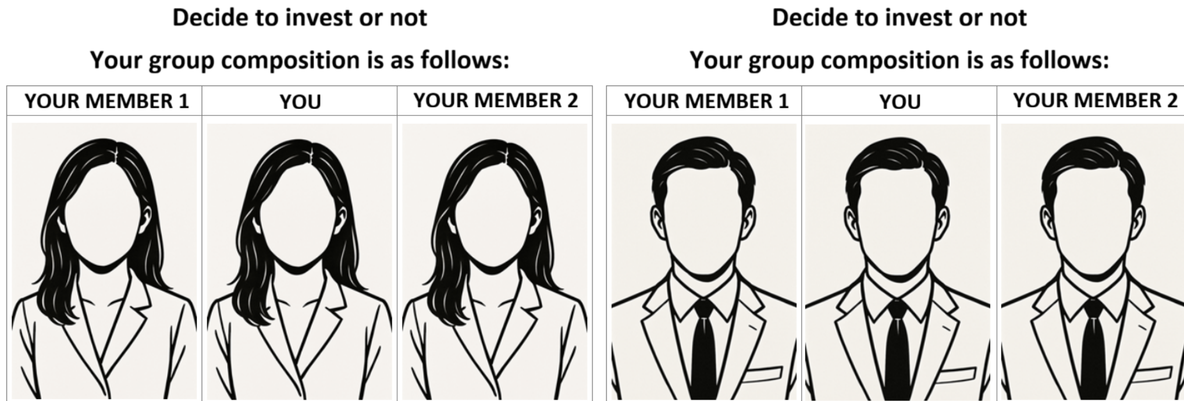
Q2 Suppose that all group members, including yourself, decide to invest. Which of the following statements is correct?

(1) Everyone receives 100 tokens.
(2) Everyone receives 125 tokens.
(3) Two members receive 125 tokens, and the remaining one receives 200 tokens.
(4) One member receives 125 tokens, and the remaining two receive 200 tokens.

Section 1

In this section, you will repeat the investment decision described above six times. In each round, a new group of three people is randomly formed, consisting only of participants of the same gender as you.

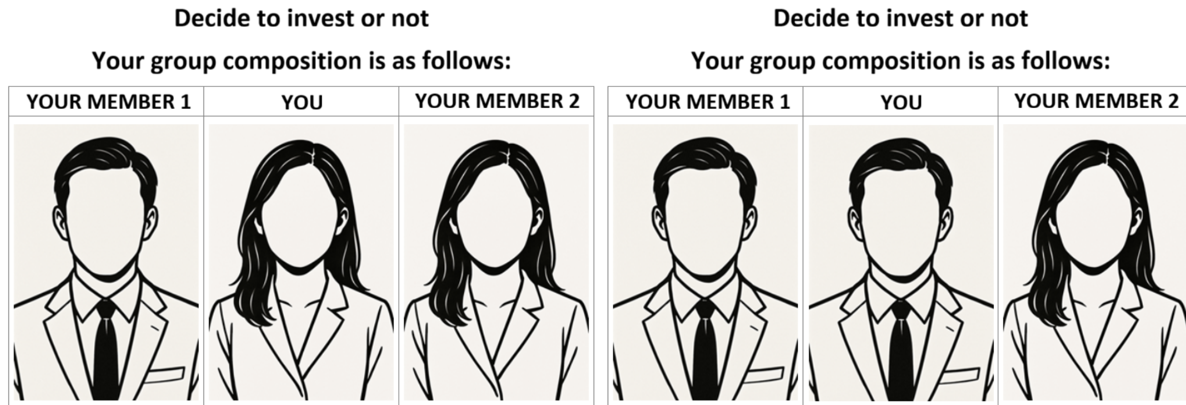
[*In each round of Section 1, participants see three silhouette images of the same gender of themselves, as follows.*]



Section 2

In this section, you will repeat the investment decision described above eight times. In each round, a new group of three people is randomly formed, and the group will include at least one participant of a different gender from you.

[*In each round of Section 2, participants see three silhouette images of at least one different gender of themselves. Two examples are as follows.*]



[*At the end of round 14, each participant's payoff of one randomly selected round is informed.*]

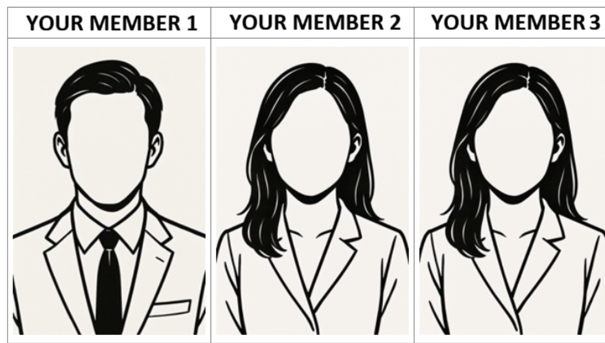
Post-experiment survey

Review of the experiment Recall the experiment you had just participated, and answer how much you agree with the following statements. [*Likert scale from 1 (completely disagree) to 5 (completely agree) is followed.*]

- "I feel pressure to invest"
- "I expect someone else with the same gender of mine would invest."
- "I care about how others regard my decisions."

If you were in a position as a supervisor of the group and had to instruct one of the group members to make an investment, which of the following would you choose?

If you were in a position as a supervisor of the group and had to instruct one of the group members to make an investment, which of the following would you choose?



Individual characteristics Answer how much you agree with the following statements. [*Likert scale from 1 (completely disagree) to 5 (completely agree) is followed.*]

- "I volunteer a reluctant task if someone had to do."
- "I enjoy playing a leader role."
- "I respond to the social expectations."
- "I argue with friends who have different opinions."

Choose the types of the middle and high schools you graduated. [*Choice options are co-educational school, single-gender school, other/hard to describe.*]