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Hattori, Keisuke and Higashida, Keisaku and Morita, Kimiyuki

School of Business, Aoyama Gakuin University, School of Economics, Kwansei Gakuin University, School of Economics, Senshu University

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Leading with Generosity and Responsibility through Reward Allocation Decisions in Teams*

Keisuke Hattori[†1], Keisaku Higashida[‡2], and Kimiyuki Morita[§3]

[1]School of Business, Aoyama Gakuin University, JAPAN
[2]School of Economics, Kwansei Gakuin University, JAPAN
[3]School of Economics, Senshu University, JAPAN

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Abstract

Leadership generosity and responsibility are crucial elements in organizational management, particularly when leaders allocate rewards among team members. Through theoretical modeling and experimental validation, we examine leaders' allocation decisions at different stages of a project—before it begins, after completion but before outcomes are realized, and after outcomes are known—and how their decisions depend on their personality traits. Using a preregistered randomized controlled experiment with 520 participants, we examine two key leadership behaviors: generous commitment (taking a smaller share for oneself before the project starts) and responsibility (reducing one's share after poor performance), as well as how personal traits shape these behavioral styles. Our theoretical framework predicts that more altruistic leaders will demonstrate stronger generous commitment while less altruistic leaders, counterintuitively, will demonstrate greater responsibility following negative outcomes. The empirical findings largely support these predictions. Female leaders show more generosity, while both genders demonstrate responsibility by reducing self-allocation following negative outcomes, albeit through different psychological mechanisms. Personality traits, especially altruism, as well as other psychological factors, moderate these behaviors. Our study finds that personality traits that are often associated with "strong" leadership tend not to demonstrate responsibility. These findings provide insights into leadership decision-making, with implications for organizational design and leadership development.

Keywords: team production, leadership style, gender differences, reward allocation, generosity, responsibility, survey experiment
JEL Classification M52, M54, D91, D23.

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[†]E-mail: hattori@busi.aoyama.ac.jp
[‡]Kwansei Gakuin University, JAPAN
[§]Senshu University, JAPAN

1 Introduction

Leaders often face opportunities—and sometimes pressures—to demonstrate their generosity and accountability through reward allocation decisions. Leaders' generosity in reward allocation is widely recognized as a hallmark of effective leadership. Such generosity in commitment can enhance team motivation and foster a culture of mutual trust and dedication. For instance, in 2015, Dan Price, CEO of Gravity Payments, raised the minimum salary of all his employees to $70,000 by cutting his own salary by $1 million. To achieve this, he sold his second home and used his savings.[1] Similarly, Steve Jobs of Apple and Eric Schmidt of Google chose to work for nominal "one-dollar salaries," emphasizing their commitment to their organizations.[2]

A leader's true character often emerges not in moments of success but in how they handle responsibility after outcomes are known. Demonstrating responsibility—especially by sharing the burden of negative consequences—reflects integrity and dedication to organizational values. Tony Hayward, BP's CEO during the 2010 Gulf of Mexico oil spill, declined his annual bonus to acknowledge his accountability for the crisis.[3] By contrast, Volkswagen's CEO Martin Winterkorn retained substantial retirement benefits after the 2015 emissions scandal, sparking widespread public criticism.[4]

While these examples highlight how reward allocation serves as a visible mechanism for leadership qualities, little is known about the underlying factors that determine when and why leaders make such decisions. In team projects, rewards play a key role in influencing members' motivation and effort, making leaders' decisions critical for team performance. However, two crucial aspects of these decisions remain underexplored: leaders' generous commitment through pre-project allocation and their responsibility demonstrated through post-outcome adjustments. Both the timing of these decisions—whether made before project execution or after outcomes are known—and individual characteristics of leaders may significantly affect their choices.

Although previous research has examined commitment and accountability separately, our study presents the first comprehensive framework that integrates both aspects of leadership decision-making, with a particular focus on generous commitment and responsible accountability strategies.[5] Through theoretical modeling and experimental validation, we examine the leaders' allocation decisions when they can commit before production and after outcomes are realized.

We first present a theoretical model in which a leader and a member work together on a project as a team. The leader, who has altruistic concerns for the team member and cares about reputation consequences, allocates rewards between themselves and the team member, while the team member exerts effort to execute the project. We examine leaders' optimal reward allocation strategies under different decision timings and outcome scenarios. Our model captures how leaders face distinct

[1] "CEO on why giving all employees minimum salary of $70,000 still "works" six years later: "Our turnover rate was cut in half," CBS News, July 14, 2016, https://www.cbsnews.com/news/dan-price-gravity-payments-ceo-70000-employee-minimum-wage/ (accessed January 25, 2025).

[2] "CEOs Who Make One Dollar (Or Less) A Year," Forbes, May 16, 2011, https://www.forbes.com/sites/brendancoffey/2011/05/16/ceos-who-make-one-dollar-or-less-a-year/ (accessed January 25, 2025).

[3] "BP's Hayward Won't Get Performance Bonus," CNN Money, March 3, 2011, https://money.cnn.com/2011/03/03/news/companies/bp_hayward_bonus/ (accessed January 25, 2025).

[4] "Former Volkswagen Chief Martin Winterkorn Could Receive €60m Payoff," Wall Street Journal, September 24, 2015, https://www.wsj.com/articles/former-volkswagen-chief-martin-winterkorn-could-receive-60m-payoff-1443103501 (accessed January 25, 2025).

[5] In this study, "accountability" is defined as the obligation to disclose and explain the causes and reasons for outcomes, regardless of whether they are positive or negative. This ensures that leaders maintain transparency in their actions and secure trust from both internal and external stakeholders. On the other hand, "responsibility" is conceived as a form of accountability, which clarifies ownership of specific outcomes. It involves identifying which individuals or groups are accountable for success or failure and entails corresponding actions or decisions. In our study, we particularly refer to decisions involving a reduction in the leader's own share of remuneration when outcomes are negative compared to when they are positive. This can include adjustments in remuneration, changes in roles, or resignations if necessary.

trade-offs: when making allocation decisions before versus after project completion (generosity dimension), and when deciding allocations following negative versus positive outcomes (responsibility dimension). In the pre-project phase, leaders must balance the motivational effects on member effort against considerations of their own and the member's rewards and reputation costs. In the post-outcome phase, leaders weigh reputation costs against immediate financial benefits when deciding how to demonstrate responsibility through their allocation choices.

The model generates several testable predictions: (1) leaders who can commit to reward allocations before project initiation allocate less to themselves compared to those deciding after project completion, particularly when they are more altruistic, and (2) leaders allocate less to themselves after negative outcomes are realized compared to positive outcomes, with this effect being stronger among those who are less altruistic. Our model further demonstrates that both leadership styles—generous commitment and responsible accountability—are moderated by how leaders perceive reputation costs differently across decision contexts. These theoretical predictions guide our experimental investigation.

Using a scenario-based randomized controlled experiment with 520 participants, we empirically test these predictions by examining how leaders allocate rewards between themselves and team members under different timing and outcome conditions. Our experimental design, which was preregistered in the AEA RCT Registry, distinguishes between four scenarios: pre-project decisions, post-project decisions, and decisions following either positive or negative outcomes. While our primary focus is on leaders' allocation decisions, we also conduct a follow-up experiment to examine followers' reactions. This approach allows us to examine both the strategic nature of commitment and the responsiveness to accountability in leadership behavior, directly testing our theoretical predictions.

Our experimental findings largely support the theoretical predictions while revealing additional insights. First, we find that female leaders tend to adopt more generous commitment styles, while no such tendency is observed among male leaders. Second, both male and female leaders demonstrate responsible accountability by reducing their self-allocation following negative outcomes, albeit through different psychological mechanisms. Male leaders appear to internalize responsibility by attributing poor outcomes to their own leadership inadequacy, while female leaders adjust their allocation decisions in response to external factors that shape their sense of responsibility.

These experimental findings align with existing empirical findings in organizational contexts. The greater generosity observed among female leaders—taking a smaller share for themselves in pre-project commitments—parallels broader gender differences in leadership behavior. Meta-analytic evidence suggests that female leaders tend to adopt a more transformational leadership style, emphasizing collaboration, individualized consideration, and the well-being of subordinates (Eagly et al., 2003).

Furthermore, this tendency aligns with corporate behaviors observed among female executives, who more actively advocate for employee welfare, including wage improvements (Kunze and Miller, 2017) and workplace benefits (Post and Byron, 2015). This priority on others' benefits over personal gain is consistent with gender differences in compensation negotiations, where women generally request lower salaries compared to men (Roussille, 2024), and may partially explain why female executives often receive lower compensation than their male counterparts (Gupta et al., 2018; Hill et al., 2015). Our experimental results also suggest that different psychological mechanisms underlie how male and female leaders demonstrate responsibility. While male leaders' sense of responsibility may be driven by their perception of personal leadership failure, female leaders may instead respond to broader social and institutional expectations, regardless of their attribution of failure. This finding corresponds to previous research showing that female leaders typically face stricter scrutiny in failure responses (Lee and James, 2007).

Beyond these gender differences, our results highlight the crucial role of personality traits, particularly altruism, in moderating these leadership styles, consistent with our theoretical framework. More altruistic leaders show a stronger tendency toward generous commitment, while less altru-

istic leaders demonstrate stronger responsibility. Interestingly, traits traditionally associated with "strong" leadership (House and Aditya, 1997; Judge et al., 2002)—such as risk-taking, competitiveness, and high career ambition—are often negatively related to such responsible allocation decisions. These findings provide empirical validation for our theoretical predictions about how personal characteristics influence leaders' balancing of self-interest and team welfare.[6]

This study contributes to the literature on team leadership in several ways. First, it provides a theoretical framework for understanding how timing and outcome information affect leaders' reward allocation decisions. Second, it offers experimental evidence that validates and extends these theoretical predictions. Third, it identifies important gender differences in leadership approaches to generosity and responsibility, revealing distinct psychological mechanisms through which male and female leaders manifest these leadership styles. Finally, it demonstrates how personality traits and motivations moderate leadership behavior, providing deeper empirical insights into our theoretical framework.

Our findings have important implications for understanding how different types of leaders exhibit generous commitment and responsible accountability through reward allocation decisions. Organizations can use these insights in two key ways. First, in leader selection, our results indicate how leaders with different characteristics and gender respond to the need for motivational commitment and outcome-based accountability. Second, in leadership development programs, organizations can help leaders understand and develop their capacity for using reward allocation effectively, considering both generosity and responsibility aspects.

The remainder of this paper is organized as follows. Section 2 reviews relevant literature on leadership and reward allocation. Section 3 develops our theoretical framework and derives testable predictions. Section 4 describes our experimental design and methodology. Section 6 discusses the implications of our findings in the context of prior research and theoretical modeling, and Section 7 concludes with recommendations for future research and practice.

2 Related Literature

Research on reward allocation by leaders and the relationship between personality traits and leadership has been actively studied in both economics and management literature. Economists have primarily focused on how leaders can use reward allocation to solve incentive problems in teams, while management scholars have extensively examined how personal characteristics influence leadership behavior and decision-making. Our study builds upon and connects these two streams of literature.

2.1 Economic Perspectives on Leadership and Incentives

Addressing free-rider problems has been central to research on team production, public goods provision, and common-pool resource management in the field of economics. Various mechanisms have been investigated, including pre-play communication (Isaac and Walker, 1988), group incentive contracts (Nalbantian and Schotter, 1997), and mutual monitoring (Ostrom et al., 1992). Recent experimental studies have specifically examined reward allocation by leaders as a solution, showing that it can increase team members' effort and improve efficiency compared to equal sharing schemes (Van der Heijden et al., 2009; Stoddard et al., 2014; Drouvelis et al., 2017; Karakostas et al., 2023).

Most existing studies focus on scenarios where leaders make allocation decisions after observing members' efforts, allowing them to reward high effort and punish shirking. While these studies demonstrate the effectiveness of ex-post reward allocation in solving the free-rider problem, they

[6]The main experimental tests of leadership generosity and responsibility were pre-registered as primary hypotheses, while moderation by gender and personality traits, as well as mediation analyses, were pre-specified as secondary analyses.

do not address how leaders might strategically use pre-commitment. A notable exception is Boosey et al. (2024), who examine leaders' pre-commitment to specific sharing rules. Our study extends this literature in two important ways. First, we investigate leaders' allocation decisions in two distinct comparative settings: pre-project versus post-project decisions (to understand generosity), and decisions following negative versus positive outcomes (to examine responsibility). This comprehensive approach enables the analysis of how leaders strategically use allocation decisions for different purposes at different stages of the project lifecycle. Second, while previous research has focused primarily on efficiency implications, we examine how personal characteristics—particularly altruism and other traits affecting reputation cost perceptions—moderate leaders' strategic use of reward allocation to demonstrate different leadership styles.

2.2 Personality Traits and Leadership Effectiveness

The relationship between leadership styles and altruism has been studied from various perspectives. Rotemberg and Saloner (1993) theoretically demonstrate that empathic leaders tend to adopt more participatory styles, which are particularly effective in innovative environments. Their emphasis on the role of empathy in leadership provides a theoretical foundation for our focus on altruism as a direct moderator of allocation decisions. Kocher et al. (2013) experimentally show that managers' other-regarding preferences influence their choice of management style, with efficiency-oriented managers favoring more autocratic approaches (Charness and Rabin, 2002).

Our study also complements Dur et al. (2021), who develop a formal model of leadership styles under different labor market conditions. While their framework focuses on the role of labor market constraints in shaping firms' choices of leaders who employ either friendly (praise-based) or unfriendly (punishment-based) leadership styles, both studies highlight the importance of context and social preferences in shaping leadership behavior. Their model, which incorporates altruistic and spiteful leader types, also aligns closely with our theoretical approach based on altruism and reputational concern.

The ethical dimension of leadership decisions has received considerable attention, particularly regarding responsibility-taking behavior (Den Hartog, 2015). De Hoogh and Den Hartog (2009) emphasize the importance of socially responsible power use, which includes leaders taking responsibility for both their own and their team members' actions. This view of responsibility in leadership is supported by Winter (1991), who analyzed a sixteen-year longitudinal study of AT&T managers and found that those who combined high power motivation with high responsibility were more likely to succeed. Our study extends this line of research by showing that both male and female leaders demonstrate responsibility by reducing their reward share after negative outcomes. However, we reveal distinct gender differences in the underlying psychological mechanisms: male leaders are primarily driven by internalized self-blame, while female leaders rely on other psychological processes to exhibit responsible leadership behavior.

The influence of personal characteristics on leadership has been extensively studied in management literature. House and Aditya (1997) and Judge et al. (2002) examine how the Big Five personality traits relate to both leader emergence and effectiveness, identifying traits traditionally associated with "strong" leadership, including risk-taking and competitiveness. Zaccaro et al. (2018) provide a comprehensive framework on individual differences in leadership, noting that these traits, while linked to leadership success, may not align with responsible accountability. Our findings challenge this conventional view by showing that traits typically associated with strong leadership—such as risk-taking, competitiveness, and high career ambition—can be negatively related to responsible accountability. This suggests the need to reconsider how responsible leaders are identified and developed within organizations.

2.3 Gender Differences and Leadership Styles

In the leadership literature, the relationship between leadership styles and gender has been extensively studied (see Lord et al., 2017 for a historical review). Meta-analyses in management literature (Eagly and Johnson, 1990; Eagly et al., 2003) find that female leaders tend to adopt more participative styles and engage more actively in contingent reward behaviors. These findings align with our experimental results, showing that female leaders demonstrate greater generosity through pre-project commitments, suggesting that gender differences in leadership styles manifest in reward allocation decisions.

Beyond leadership styles, gender differences also extend to compensation and accountability. Studies indicate that female executives often receive lower compensation than their male counterparts, even after controlling for firm size, performance, and other factors (Gupta et al., 2018; Hill et al., 2015; Adams and Funk, 2012). Moreover, female leaders tend to advocate for fairer workplace policies, such as improving pay equity and employee welfare (Kunze and Miller, 2017; Post and Byron, 2015; Adams and Ferreira, 2009; Ng and Sears, 2017). These empirical findings may partially explain our experimental results, where female leaders, when given the opportunity to pre-commit to reward allocation, tend to allocate a smaller share to themselves and a larger share to their team members.

Gender also plays a role in responsibility-taking behavior. Women in executive positions often face harsher scrutiny and are more likely to step down voluntarily in response to poor firm performance (Lee and James, 2007). This aligns with our findings that female leaders exhibit a significantly stronger effect of responsibility than male leaders, with a larger effect size.

While previous research has primarily focused on either gender differences in leadership styles or the role of personal characteristics, we demonstrate how these factors interact in shaping both pre-project generosity and post-outcome responsibility, revealing distinct psychological mechanisms through which male and female leaders navigate leadership challenges.

3 Theoretical Framework

We first present our theoretical model and derive some predictions, which are the basis for the hypotheses tested in the experimental analysis.

We consider a one-shot team production game with two agents: a leader and a member, where a leader makes reward allocation decisions at different points in time and under varying information conditions. Our model incorporates three key features: (1) a leader has discretionary authority over the allocation of team rewards generated through the project, (2) a team member strategically chooses their effort levels in response to, or in anticipation of, these allocation decisions, and (3) a leader is characterized by both their degree of altruism toward the team member and their concerns about how their decisions affect their reputation among the team member and external observers.[7]

3.1 Model Setup

We consider a team production with two agents: a leader and a member. The team works on a project that yields either a positive or negative outcome. Let $P \in [0, 1]$ denote the probability of achieving a positive outcome, which is determined by both agents' efforts:

$$P = e_l + e_m,$$

where $e_i \geq 0$, $i = \{l, m\}$, represents the effort levels of the leader and member, respectively.

[7]Rotemberg and Saloner (1993) highlight how a leader's beliefs and social motivations can affect incentive design and employee behavior, which aligns with our focus on the role of altruism and reputational concern in shaping reward allocation decisions.

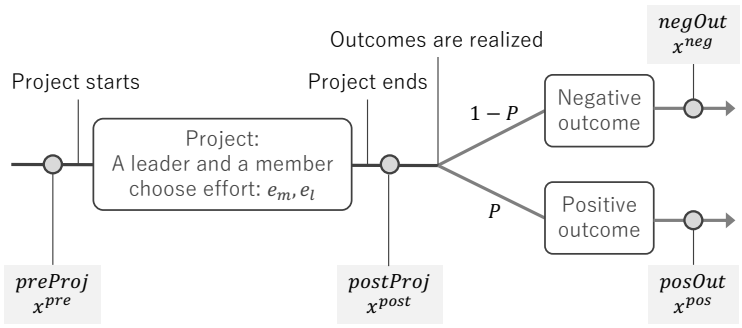


Figure 1: Timing of Reward Allocation Decisions

The team earns a total revenue of $\pi_{pos} > 0$ if the project outcome is positive and $\pi_{neg} > 0$ if it is negative, where $\pi_{pos} > \pi_{neg}$. We define $\Delta_\pi \equiv \pi_{pos} - \pi_{neg} > 0$ as the revenue gap. This revenue is divided between the leader and the member as rewards.

For simplicity, we assume that the leader's effort, e_l, is exogenously given and normalize it to $e_l = 0$. This reflects a scenario in which the leader provides only minimal but necessary oversight, focusing instead on reward allocation, as managers often oversee multiple projects and must distribute their time accordingly. As a result, the project's success probability, P, depends solely on the member's effort.[8] The member chooses their effort endogenously, incurring a quadratic cost given by $c_m = (\mu e_m^2)/2$, where μ represents the cost parameter. Since positive revenue ($\pi_{neg} > 0$) can still be generated even when both efforts are zero, this normalization does not imply the absence of leadership involvement but rather that the leader's effort is not a decision variable in our model.

The leader has the authority to allocate the total revenue between themselves and the member. Let $x \in [0, 1]$ represent the share of the total revenue that the leader allocates to themselves (hereafter referred to as the allocation rule), with the remaining share $1 - x$ going to the member.

We consider four scenarios (cases) in which the leader makes the allocation decision:

1. *preProj*: before the project starts (before effort choices)
2. *postProj*: after effort choices but before outcome realization
3. *negOut*: after effort choices and the realization of a negative outcome
4. *posOut*: after effort choices and the realization of a positive outcome

The first two scenarios (*preProj* and *postProj*) differ in decision timing, while the latter two (*negOut* and *posOut*) differ in outcome information. Figure 1 illustrates the timing of the leader's reward allocation decisions across the four scenarios.

The member's utility, u_m, is defined by

$$u_m = (1 - x)\{P\pi_{pos} + (1 - P)\pi_{neg}\} - c_m.$$

The leader's utility, u_l, is defined by

$$u_l = x\{P\pi_{pos} + (1 - P)\pi_{neg}\} + \alpha u_m - c_l,$$

[8] Even if we were to consider $e_l > 0$, as long as it remains an exogenous variable, our main theoretical results would remain qualitatively unchanged, though the comparison between e_m^{post} and e_m^{res} would be affected. Additionally, the boundary conditions ensuring interior solutions would also be affected.

where c_l represents the leader's reputation cost:

$$c_l = \frac{\gamma x^2}{2}.$$

Here, $\gamma > 0$ is the reputation cost parameter, and $\alpha \in [0, 1]$ represents the leader's degree of altruism, indicating how much they internalize the member's utility.

Importantly, the leader's reputation cost c_l represents the negative consequences a leader anticipates from being perceived as overly self-interested or unfair in their reward allocation decisions.[9] This cost is influenced not only by psychological factors, such as the leader's personality traits or altruistic concerns, but also by institutional and organizational contexts. For instance, organizational practices such as 360-degree feedback or peer review systems inherently amplify reputation costs by directly linking team members' evaluations to formal performance assessments. Similarly, regulatory frameworks enforcing transparency, including mandatory executive pay disclosure and CEO Pay Ratio reporting, increase external scrutiny, thereby raising the reputational stakes associated with self-interested reward allocations. Furthermore, institutional settings characterized by strong whistleblower protections or employee representation on corporate boards can further shape the perceived magnitude of reputation costs, complementing individual psychological predispositions.

In this model, the leader's effort level e_l is treated as fixed and normalized to zero, and consequently, their direct effort cost is constant and omitted from the utility function. However, the leader faces a reputation cost associated with their share of the team reward x. A higher self-allocated share increases the leader's immediate monetary payoff but reduces their reputation.

Throughout this theoretical section, we impose the following parameter assumptions:

Assumption. (i) $\mu \geq \Delta_\pi$, (ii) $\gamma \geq (1 - \alpha)(\pi_{pos} + \pi_{neg})$.

Here, (i) ensures that even when the entire reward is allocated to the member, the optimal effort level does not exceed 1, and (ii) guarantees that the leader's optimal choice of x remains within the interior of the feasible range $[0, 1]$ in all scenarios, as their reputation cost is assumed to be sufficiently large to deter choosing $x = 1$.

3.2 Leadership Generosity

To examine how leaders demonstrate generosity through reward allocation decisions, we compare two distinct timing scenarios: pre-project decisions, where leaders can commit to allocation rules *before* the project starts, and post-project decisions, where they determine allocations *after* effort choices have been made.

3.2.1 Pre-project Decision

We first analyze a case where the leader commits to a reward allocation rule, x, before the project starts (first stage), and then the member observes the share and chooses their effort (second stage). We solve this game by using backward induction.

In the second stage, the member chooses e_m to maximize their utility u_m after observing the leader's committed allocation rule, x. The first-order condition is given by[10]:

$$\frac{\partial u_m}{\partial e_m} = \Delta_\pi(1 - x) - \mu e_m = 0.$$

[9] When a leader allocates a large share of the team's reward to themselves (i.e., high x), observers—including team members and external stakeholders—may form negative impressions about the leader's fairness or social values. Such perceptions can damage the leader's social standing, trustworthiness, or future leadership opportunities. Thus, the reputational cost captures the expected utility loss due to the erosion of the leader's social image as a fair and trustworthy leader, rather than their competence.

[10] The second-order condition (SOC) is satisfied: $\partial^2 u_m / \partial e_m^2 = -\mu < 0$.

The best response of the member in the second stage, $\hat{e}_m$, is given as follows:

$$\hat{e}_m = \frac{\Delta_\pi(1-x)}{\mu}, \tag{1}$$

which decreases with the effort cost μ and the leader's share x.[11] Notice that a higher share for the leader reduces the member's incentive to exert effort; we refer to this as the demotivating effect of x.

In the first stage, the leader determines x to maximize their utility while considering the member's optimal response $\hat{e}_m$. Using the envelope theorem, the first-order condition for the optimal leader's share is[12]:

$$\frac{du_l}{dx} = (1-\alpha)(P\Delta_\pi + \pi_{neg}) - \frac{\Delta_\pi x}{\mu} - \gamma x = 0.$$

Solving this yields the equilibrium share in the *preProj* case[13]:

$$x^{pre} = (1-\alpha)\frac{\mu\pi_{neg} + \Delta_\pi^2}{\gamma\mu + \Delta_\pi^2(2-\alpha)}, \tag{2}$$

where the superscript *pre* indicates the equilibrium value in the Subgame Perfect Nash Equilibrium (SPNE) of the *preProj* case. Then, we have:

$$\frac{\partial x^{pre}}{\partial \alpha} = -\frac{\left(\gamma\mu + \Delta_\pi^2\right)\left(\mu\pi_{neg} + \Delta_\pi^2\right)}{\left\{\gamma\mu + \Delta_\pi^2(2-\alpha)\right\}^2} < 0,$$

which implies that a more altruistic leader commits to a lower share of rewards for themselves.

In the SPNE of the *preProj* case, the member's equilibrium effort level is given by[14]:

$$e_m^{pre} = \frac{\Delta_\pi}{\mu}(1-x^{pre}) = \frac{\Delta_\pi}{\mu}\frac{\gamma\mu - \mu(1-\alpha)\pi_{neg} + \Delta_\pi^2}{\gamma\mu + \Delta_\pi^2(2-\alpha)}, \tag{3}$$

which is increasing in α, implying that a more altruistic leader, by committing to a larger share of rewards for the member, induces greater effort from the member.

3.2.2 Post-project Decision

We next consider a case where the member chooses their effort in the first stage. In the second stage, the leader observes this effort and then determines the reward allocation rule, though they must do so before the outcome is realized.[15] By comparing the reward allocation rule and the member's effort in this setting with those in the *preProj* case, we can isolate the effect of decision timing while holding outcome uncertainty constant.

[11] To ensure that $\hat{e}_m \leq 1$ for any $x \in [0,1]$, it is necessary that $\mu \geq \Delta_\pi$, which is specified as Assumption (i).

[12] The SOC is satisfied:

$$\frac{d^2u_l}{dx^2} = -\frac{\Delta_\pi^2(1-\alpha)}{\mu} - \gamma < 0.$$

[13] By Assumption (ii), $x^{pre} < 1$ holds in equilibrium.

[14] From Assumption (i) and (ii), $e_m^{pre} < 1$ holds in equilibrium.

[15] There are compelling reasons to consider scenarios where leaders determine reward allocations after team effort is exerted but before outcomes are revealed. First, in long-term projects where complete results take substantial time to materialize (e.g., consumer loyalty-building initiatives versus short-term sales promotions), rewards often must be distributed before final outcomes are known. Second, as demonstrated in our theoretical analysis (see Appendix A2), this timing may actually elicit greater member effort compared to post-outcome decisions, providing strategic advantages to leaders who can commit to allocation rules at this intermediate stage.

We solve this game by using backward induction. The first-order condition for the leader's allocation decision in the second stage is given by[16]

$$\frac{\partial u_l}{\partial x} = (1-\alpha)(P\,\Delta_\pi + \pi_{neg}) - \gamma x = 0,$$

which yields the best response of the leader, $\tilde{x}$, given by

$$\tilde{x} = \frac{(1-\alpha)\left\{\Delta_\pi e_m + \pi_{neg}\right\}}{\gamma}. \tag{4}$$

Notably, in this case, the leader's allocation *increases* with the member's effort e_m, creating a disincentive for the member's effort provision: members anticipate that working harder will lead to a smaller share of the rewards. This time-inconsistency problem is at the heart of why pre-commitment can be valuable. As we will show later, this contributes to lower team performance in the *postProj* case.

In the first stage, the member anticipates how their effort choice will influence the leader's subsequent allocation decision $\tilde{x}$. The first-order condition for the member's effort choice is given by[17]:

$$\frac{du_m}{de_m} = \Delta_\pi(1-\tilde{x}) - \frac{\Delta_\pi(\Delta_\pi e_m + \pi_{neg})(1-\alpha)}{\gamma} - \mu e_m = 0. \tag{5}$$

Solving this game yields the equilibrium share and the equilibrium effort in the *postProj* case:

$$x^{post} = (1-\alpha)\frac{\mu\pi_{neg} + \Delta_\pi^2}{\gamma\mu + \Delta_\pi^2(2-2\alpha)}, \tag{6}$$

$$e_m^{post} = \frac{\Delta_\pi\left\{\gamma - 2\,(1-\alpha)\,\pi_{neg}\right\}}{\gamma\mu + \Delta_\pi^2(2-2\alpha)}, \tag{7}$$

where the superscript *post* indicates the equilibrium value in the SPNE of the *postProj* case.[18]

Since

$$\frac{\partial x^{post}}{\partial \alpha} = -\frac{\gamma\mu\left(\mu\pi_{neg} + \Delta_\pi^2\right)}{\left\{\gamma\mu + \Delta_\pi^2(2-2\alpha)\right\}^2} < 0,$$

it follows that a more altruistic leader chooses a lower share of rewards for themselves.

3.2.3 Comparison and Predictions

Now, we compare the equilibrium allocation rules and the member's effort between the two scenarios.

From (2) and (6), we have:

$$x^{pre} - x^{post} = -\frac{\alpha(1-\alpha)\Delta_\pi^2\left(\Delta_\pi^2 + \mu\pi_{neg}\right)}{\left\{\gamma\mu + (2-\alpha)\Delta_\pi^2\right\}\left\{\gamma\mu + (2-2\alpha)\Delta_\pi^2\right\}} \leq 0$$

hold for all $\alpha \in [0,1]$ with equality iff $\alpha = 0$ and $\alpha = 1$. Similarly, we have:

$$e_m^{pre} - e_m^{post} = \frac{(1-\alpha)\left(\gamma\mu + 2\Delta_\pi^2\right)\left(\mu\pi_{neg} + \Delta_\pi^2\right)}{\mu\left\{\gamma\mu + (2-\alpha)\Delta_\pi^2\right\}\left\{\gamma\mu + (2-2\alpha)\Delta_\pi^2\right\}} \geq 0$$

[16]The SOC is satisfied because $\frac{\partial^2 u_l}{\partial x^2} = -\gamma < 0$. Furthermore, by Assumptions (i) and (ii), and given that $e_m \leq 1$, it follows that $\tilde{x} < 1$ holds.

[17]The SOC is satisfied because $\frac{d^2 u_m}{de_m^2} = -\frac{2\Delta_\pi^2(1-\alpha)}{\gamma} - \mu < 0$.

[18]By Assumptions (i) and (ii), both x^{post} and e_m^{post} remain interior solutions.

hold for all $\alpha \in [0,1]$ with equality if and only if $\alpha = 1$.[19] Therefore, we have the following result:

Result 1 (Leadership Generosity)**.** *$x^{pre} \leq x^{post}$ with equality if and only if $\alpha = 0$ and $\alpha = 1$.*

This result, which forms the basis for our first testable hypothesis (H1), demonstrates leadership through generosity: when leaders can commit to reward allocations before the project starts, they choose more generous allocations (i.e., lower x) compared to post-project decisions. This generous commitment serves as a strategic tool for leaders to motivate higher member effort, as reflected in the consistently higher effort levels in the pre-project scenario ($e_m^{pre} > e_m^{post}$ for all $\alpha \in [0,1)$, even when $x^{pre} = x^{post}$ at $\alpha = 0$).

The intuition behind this result can be understood by comparing the marginal benefits of x in the pre-project and post-project scenarios (denoted by MB_x). Specifically, we have:

$$MB_x\big|_{pre} - MB_x\big|_{post} = \left\{ \underbrace{(1-\alpha)\left(e_m^{pre} - e_m^{post}\right)}_{\text{(i)}} + \underbrace{\frac{d\hat{e}_m}{dx^{pre}} x^{pre}}_{\text{(ii)}} \right\} \Delta_\pi$$

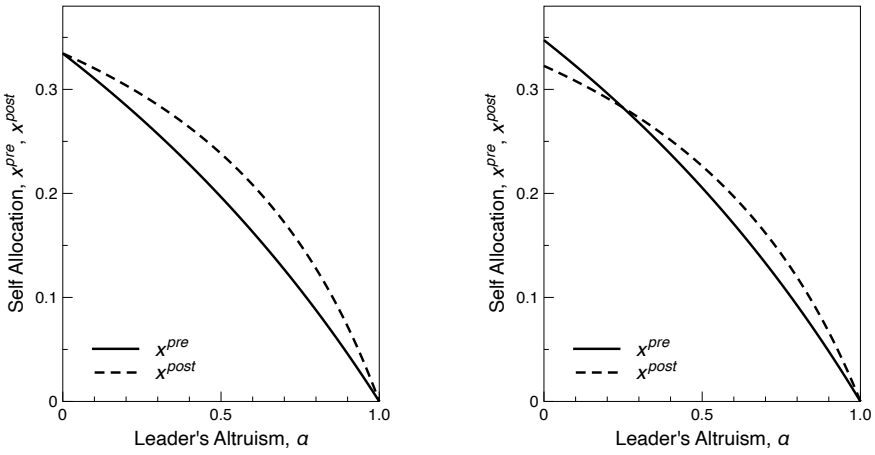
Here, (i) represents the direct marginal gain of pre-project x (over post-project x) due to differences in the member's effort, while (ii) denotes the indirect marginal loss of pre-project x (over post-project x) due to the demotivating effect on the member's effort. Note that the direct effect (i) is discounted by the leader's altruism, while the indirect effect (ii) is determined during the decision-making process, with the leader's altruistic concerns already incorporated.

When $\alpha = 0$ (no altruism), the altruistic discount disappears, leaving the direct effect purely as the difference in the member's effort between the two scenarios, which exactly cancels out the demotivating effect on the member's effort in the pre-project scenario. When $\alpha \in (0,1)$, the altruistic discount reduces the direct marginal gain (i), resulting in $x^{pre} < x^{post}$. Eventually, when $\alpha = 1$ (complete altruism), the leader fully internalizes the member's utility and, as a natural consequence, allocates all rewards to the member in both scenarios (i.e., $x^{pre} = x^{post} = 0$), thereby minimizing their own reputation costs and maximizing overall team welfare. Panel (a) of Figure 2 illustrates this relationship between the leader's altruism and the equilibrium allocation rule.

It is important to note that these theoretical predictions serve as benchmark results, assuming identical parameters across the *preProj* and *postProj* scenarios. In reality, parameters may differ between these scenarios. For instance, the reputation cost parameter γ could differ between scenarios even when leaders choose identical reward allocations. The reputation cost associated with higher self-allocation might be lower in pre-project decisions due to greater member acceptance, compared to decisions made after team production. This difference in reputation costs likely stems from members' expectations that leaders should establish clear reward rules at the project's outset.

Figure 2 illustrates how equilibrium self-allocation patterns differ under varying assumptions about reputation costs. Panel (a) depicts the case where reputation costs are identical across scenarios, clearly demonstrating leaders' strategic use of generosity: they consistently choose lower self-allocation in pre-project decisions for all altruism levels $\alpha \in (0,1)$. In contrast, panel (b) shows how patterns change when reputation costs are lower for pre-project decisions. Here, we observe higher pre-project self-allocation when altruism is low, but lower pre-project self-allocation when altruism is high. This varying pattern, combined with potential differences in other parameters across scenarios, suggests that the relationship between commitment ability and generous allocation is theoretically ambiguous, highlighting the importance of empirical investigation.

[19] See Figure A3 in the Appendix A2 , which illustrates the equilibrium member effort levels e_m^{pre} and e_m^{post} as functions of the leader's altruism.



(a) Common reputation costs (b) Different reputation costs

Figure 2: Equilibrium Reward Allocation for Pre- and Post-Project Decision

Note: Both panels show the relationship between the leader's altruism (α) and equilibrium self-allocation (x). Parameters are set at $\pi_{pos} = 6$, $\pi_{neg} = 0.6$, and $\mu = 6$. Panel (a) assumes equal reputation cost parameter ($\gamma = 6.6$) across both scenarios, while panel (b) introduces different values of the reputation cost parameter γ (6 versus 7.2 for pre- and post-project decisions, respectively). All parameter combinations used in both panels satisfy Assumptions (i) and (ii) for the entire range of $\alpha \in [0, 1]$.

3.3 Leadership Responsibility

To examine how leaders demonstrate responsibility in their reward allocation decisions, we compare two post-outcome scenarios where leaders make decisions after either positive or negative project outcomes are realized: the *negOut* and *posOut* scenarios. This comparison allows us to analyze whether and how leaders demonstrate responsibility through reward allocation, particularly focusing on their willingness to reduce their share following negative results.

We next consider a sequential game where the member chooses their effort in the first stage. In the second stage, the project ends, and the outcome is realized—either positive or negative. After observing this outcome, the leader then determines the reward allocation rule, which may differ depending on whether the outcome is positive or negative.

For each project outcome $j = \{neg, pos\}$, the leader's utility is given by $u_{l,j} = x\pi_j + \alpha u_m - c_l$. Therefore, the first-order condition for the leader's allocation decision yields:[20]

$$x^j = \frac{\pi_j(1-\alpha)}{\gamma}. \tag{8}$$

Given that $\pi_{neg} < \pi_{pos}$, we obtain the following result:

Result 2 (Leadership Responsibility)**.** *$x^{neg} \leq x^{pos}$ with equality if and only if $\alpha = 1$.*

This result, which forms the basis for our second testable hypothesis (H2), demonstrates leadership through responsibility: when leaders face negative project outcomes, they demonstrate responsibility by allocating less to themselves compared to the positive outcome scenarios.

Leaders' decisions about how much reward to allocate to themselves are guided by two key motives: a reward motive, which reflects the desire to maximize payoffs (including both their own

[20]By Assumption (ii), x^j is ensured to be an interior solution for all $j \in \{neg, pos\}$.

and, for altruistic leaders, their team members'), and a reputational concern, which discourages taking a large share due to potential social disapproval. When project outcomes are poor and the total reward is smaller, the influence of the reward motive diminishes, and the relative weight of reputational concerns increases. Because altruistic leaders take team members' payoffs into account, reputational concerns remain relatively less important in their decision-making. By contrast, self-interested leaders focus only on their own payoff; thus, when the reward is small, reputational concerns dominate, leading them to choose a lower self-allocation x. As a result, the difference in self-allocation between success and failure—our measure of responsibility—is larger for less altruistic leaders.

This intuition is formalized in the following equation:

$$\frac{\partial(x^{pos} - x^{neg})}{\partial \alpha} = -\frac{\Delta_\pi}{\gamma} < 0, \tag{9}$$

which implies that the difference in allocation shares between positive and negative outcomes decreases with the leader's degree of altruism. This result indicates that less altruistic leaders (those with lower α) demonstrate greater responsibility by reducing their share more substantially following negative outcomes than positive ones. This prediction aligns with our subsequent experimental findings, suggesting that personal characteristics, particularly altruism, play a crucial role in how leaders take responsibility for negative outcomes through their allocation decisions.

The reputation cost parameter γ in our model may vary depending on project outcomes. When allocating rewards following negative outcomes, leaders likely face higher reputation costs than in positive outcomes, as their decisions come under greater scrutiny in challenging situations. This higher γ in negative outcome scenarios leads to a lower self-allocation than in positive outcomes, reinforcing leaders' tendency to demonstrate responsibility through reduced self-allocation when teams face setbacks.

Moreover, the magnitude of this difference in reputation costs between negative and positive outcomes may vary systematically with leaders' personal characteristics. Risk-averse leaders may anticipate a larger difference in reputation costs between positive and negative outcomes, expecting more severe reputational consequences following team failures. Similarly, leaders who are less greedy or who are less optimistic about future opportunities might perceive a greater gap in the reputational implications of their allocation decisions across different outcomes. These theoretical predictions about how personality traits shape leaders' decisions to demonstrate responsibility—as we will demonstrate through our experimental analysis—suggest that individual characteristics play a crucial role in how leaders demonstrate responsibility through their allocation decisions following different project outcomes.

We now turn to the member's effort choice in the first stage. Since both outcome scenarios occur probabilistically, the member optimally selects a single effort level, which we denote as e_m^{res}. However, as our primary focus is on comparing the reward allocation rules set by the leader, we defer the formal derivation of this effort level and its comparison with those of the other scenarios to Appendix A.

Appendix A2 provides a unified comparison of allocation rules and team performance across the four scenarios. Summarizing these results, we obtain the ordering $\max\{x^{pre}, x^{neg}\} \leq x^{post} \leq x^{pos}$, while the ranking between x^{pre} and x^{neg} depends on the values of the reputation cost parameter γ and the altruism parameter α. For member effort, we find that $\max\{e_m^{post}, e_m^{res}\} \leq e_m^{pre}$, where the ranking between e_m^{post} and e_m^{res} is also determined by γ and α. These results confirm that pre-commitment to an allocation rule enhances overall team performance.

These theoretical predictions, Results 1 and 2, guide our experimental investigation in several important ways. First, they suggest that we should observe systematic differences in allocation decisions based on both timing (Result 1) and outcome information (Result 2). Second, they indicate that these leadership styles—generous and responsible leadership—may be moderated

by leaders' personality traits: directly through altruism, and indirectly through other traits that shape leaders' perceptions of situation-dependent reputation costs. To test these predictions and explore the underlying mechanisms of leadership behavior, we conducted a randomized controlled experiment, which we describe in the following section.

4 Experimental Design and Methods

Our theoretical framework developed in the previous section provides clear predictions about how leaders' reward allocation decisions are influenced by timing and outcome information. To test these theoretical predictions, we conducted a randomized controlled experiment with a scenario-based survey method. This section presents our hypotheses and experimental design.

4.1 Main Hypotheses

Building directly on our theoretical framework developed in Section 3, we formulate two testable hypotheses that guide our experimental investigation:

Hypothesis 1 (Leadership Generosity)**.** *Leaders who decide on the reward allocation before the project starts will allocate a smaller percentage of rewards to themselves, and thus a larger share to their team members, compared to those making the decision after project completion.*

This hypothesis emerges directly from Result 1, showing that leaders choose more generous allocations when they can commit before the project starts.

Hypothesis 2 (Leadership Responsibility)**.** *Leaders informed of negative project outcomes are hypothesized to allocate a smaller percentage of rewards to themselves, and thus a larger share to their team members, compared to those informed of positive outcomes.*

This hypothesis emerges directly from Result 2, showing that leaders reduce their self-allocation following negative outcomes compared to positive outcomes, reflecting their sense of responsibility for team performance.

4.2 Exploratory Analyses

In addition to testing our main hypotheses (H1 and H2), we conduct several exploratory analyses to further understand the complexities and underlying factors of leadership decision-making regarding reward allocation.

1. Moderation Effects of Personal Characteristics (E1a, E2a): We explore how individual characteristics, including gender, occupation, and personality traits, may moderate the effect of leadership generosity (H1) and leadership responsibility (H2).

2. Mediation through Decision Motivators (E1b, E2b): We investigate how decision motivators mediate the effect of leadership generosity (H1) and leadership responsibility (H2). These motivators include the desire to motivate team members, concern for social image, self-benefit, team member benefit, and the perceived importance of a leader effort relative to team members' efforts.

Our exploratory analyses examine which types of leaders demonstrate generosity and responsibility (E1a and E2a) and through what psychological mechanisms they do so (E1b and E2b). Regarding the moderation effects, this focus stems directly from our theoretical framework: the model explicitly incorporates altruism as a direct moderator of allocation decisions, while also suggesting that other personality traits may indirectly influence these decisions through their effect on

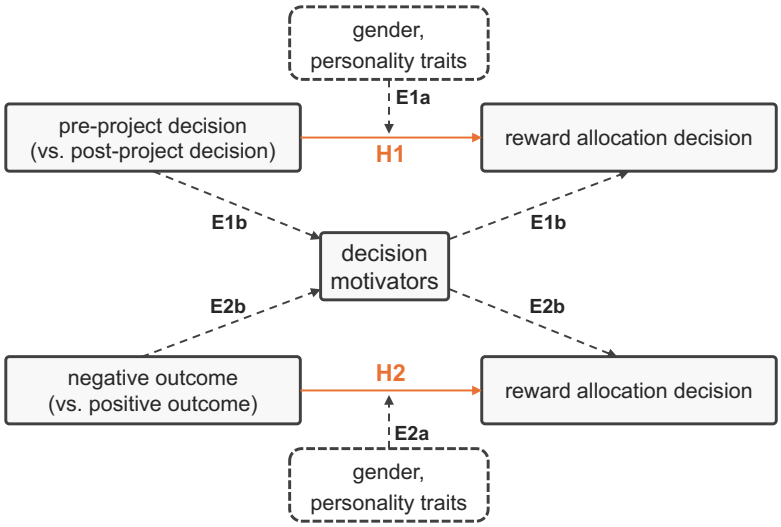


Figure 3: Conceptual model of hypothesized relationships and exploratory analyses

Note: H1 and H2 represent the main hypotheses (solid lines), while E1a, E2a, E1b, and E2b represent exploratory analyses (dashed lines). E1a and E2a examine whether gender and personality traits moderate the relationships between pre-project (vs. post-project) decision and reward allocation (H1), and between negative (vs. positive) outcome and reward allocation (H2), respectively. In contrast, E1b and E2b explore whether decision motivators mediate these relationships.

reputation cost perceptions. These analyses serve three purposes: (1) to empirically validate these theoretical channels, (2) to understand the psychological mechanisms driving allocation decisions, and (3) to generate new insights for future theoretical development by examining a broader set of individual characteristics. Figure 3 presents our conceptual framework, illustrating both the main hypothesized relationships and the exploratory analyses (E1a, E1b, E2a, E2b).

4.3 Experimental Design

The experiment employed an RCT design with scenario-based experiments to investigate the decision-making processes of team leaders in reward allocation. The design consists of four treatment conditions that vary in both the timing of allocation decisions and the information about project outcomes, allowing us to test our hypotheses about leadership generosity and responsibility separately.

4.3.1 Registration and Ethical Approval

The experiment was preregistered with the American Economic Association RCT Registry (AEARCTR-0012554). This preregistration process ensures scientific rigor and transparency in the research design before the commencement of data collection. Furthermore, the experiment received approval from the Research Ethics Committee of Aoyama Gakuin University, Japan, with the approval ID: 23-NR-004. The study was conducted in strict adherence to the university's ethical guidelines, particularly focusing on ensuring participants' anonymity to maintain the integrity of the research process.

4.3.2 Participants and Recruitment

Participants were recruited through a reputable Japanese online survey company, with a target population of employed individuals aged 20 to 60. The data collection process took place from December 11 to December 19, 2023, yielding a total of 1,783 responses. However, only 520 responses were deemed valid, resulting in a valid response rate of 29.16%.

The stringent validation process primarily involved two screening criteria. First, we excluded responses from students, unemployed individuals, and housewives/househusbands, as our study focuses on leadership in professional settings. Second, an attention check ensured data reliability by excluding participants who failed to recall key scenario details. This relatively strict screening process was essential to ensure the quality and reliability of our data, particularly given the complexity of our experimental scenarios and the importance of participants' ability to fully engage with the leadership role. See Table B1 in Appendix B for a description of the variables and survey questions, and Appendices D1 and D2 for the English translation and the original Japanese version of the survey interface.

In line with our preregistered plan, we instructed the survey company to stop data collection upon reaching the target sample size of N = 520. This approach ensured that the selection process remained unbiased and maintained the integrity of our experimental design.

The final sample (N = 520) had equal gender distribution (50% male), with ages ranging from 20 to 60 (mean = 39.36, SD = 10.82). See Appendix B, Figure B1, for the age distribution.

Participants were randomly assigned to one of four intervention groups, with each group consisting of 130 individuals. This balanced distribution across groups was crucial for our experimental design and subsequent analysis.

As an incentive for participation, respondents received a monetary reward of 8 to 10 Japanese yen (approximately 5 to 7 US cents) upon completing the survey. The experiment consisted of eight major questions, comprising a total of 24 to 25 sub-questions (varying slightly by group), and was designed to be completed in approximately three to five minutes.

4.3.3 Experimental Conditions

The experiment employed a four-arm randomized controlled trial design, where participants were randomly assigned to one of four scenario-based intervention groups:

- Pre-Project Decision condition (*preProj*)
- Post-Project Decision condition (*postProj*)
- Negative Outcome condition (*negOut*)
- Positive Outcome condition (*posOut*)

To test Hypothesis 1 (H1) on leadership generosity and conduct related exploratory analyses, we compared the Pre-Project and Post-Project Decision conditions, using a dummy variable *preProj*, where *preProj*= 0 represents the Post-Project Decision condition and *preProj*= 1 represents the Pre-Project Decision condition.

For Hypothesis 2 (H2) on leadership responsibility and its associated exploratory analyses, we examined differences between the Positive Outcome and Negative Outcome conditions, , where *negOut*= 0 represents the Positive Outcome condition and *negOut*= 1 represents the Negative Outcome condition.

4.3.4 Procedure

Our survey experiment employed four distinct scenarios to investigate the behavior of participants acting as team leaders with the authority to decide on reward allocation among project members.

The actual questionnaires used in the study are provided in Appendix D1 (English translation) and Appendix D2 (original Japanese version) for reference.

The experiment proceeded as follows:

1. Demographic Information: Participants first answered questions regarding their gender, age, and occupation. These variables were later used as either control or moderation variables when testing the intervention effects. Participants who fell outside the target age range or did not have a profession were excluded at this point and received a designated reward.

2. Personality Traits Assessment: These traits included altruism, optimism, risk tolerance, trust in others, job satisfaction, career ambition, conscientiousness (as part of the Big Five personality traits), competitiveness, sincerity, fairness, modesty, and greed avoidance.[21] These 12 responses formed the personality traits variables.

3. Common Scenario Introduction: Participants read an introductory text presenting a common hypothetical scenario:

> You are the leader of a three-member team, including yourself, at your job and you are about to embark on a new team project. As the leader, not only are you advancing the project, but you are also entrusted with the most responsible roles, such as the overall management of the team's work, member motivation management, and decision-making for the allocation of rewards. If everyone in the team puts in more effort, the project can generate larger profits. With maximum effort from everyone, the project could yield a profit of up to 6 million yen (approximately 40,000 US dollars), but with inadequate effort, it might only produce a minimum of 600,000 yen (approximately 4,000 US dollars).

4. Condition-Specific Scenarios: Following the common scenario, participants were randomly assigned to one of four intervention groups, each presented with a unique scenario (with bold text indicating the same emphasis shown to participants in the actual survey):

   a) For the Pre-Project Decision condition (*preProj*):

   > Now, **at the meeting before the start of this project**, you are about to declare in front of the two members how the profits expected from this project will be divided as rewards between yourself and the two members.

   b) For the Post-Project Uncertainty condition (*postProj*):

   > Now, **the project period has ended**, and all that is left is to wait and see how much profit the project will generate. At the meeting, you are about to declare in front of the two members how the profits expected from this project will be divided as rewards between yourself and the two members.

   c) For the Negative Outcome condition (*negOut*):

   > Now, **unfortunately, the project has ended with the worst possible outcome**, generating a profit of only 600,000 yen. At the final meeting, you are about to declare in front of the two members how the profits earned from this project will be divided as rewards between yourself and the two members.

[21] Additionally, for both risk-taking and altruism, participants answered one supplementary question each. These questions presented hypothetical scenarios designed to quantify these traits on a ratio scale.The risk-taking question assessed willingness to bet (WTB) for a lottery ticket, while the altruism question measured willingness to donate (WTD) in a disaster relief situation. This approach provided a more precise measurement of these characteristics compared to the Likert scale items.

d) For the Positive Outcome condition (*posOut*):

> Now, **the project has ended with the best possible outcome**, generating a profit of 6 million yen. At the final meeting, you are about to declare in front of the two members how the profits earned from this project will be divided as rewards between yourself and the two members.

5. Decision-Making Task: Participants were then asked to make a decision about reward allocation between themselves and their team members, specifying the percentage of total rewards they would allocate to themselves (variable: *selfAlloc*)[22]:

> As the leader of this team, what do you think you would decide for your own reward, as well as the rewards for the members, and how would you announce this in front of the members at this meeting? Please specify the percentage of the total rewards that you would take for yourself, between 0 to 100.

6. Attention Check: Participants identified the timing of their reward allocation decision. Those who answered incorrectly or did not remember were excluded, ensuring they understood their assigned condition.[23]

7. Decision Motivators: After the allocation decision, participants responded to questions assessing their decision motives and perceptions (see Table B1 in Appendix B). These included self-allocation reasons: to enhance their social image (*socImage*), to motivate team members (*motMem*; pre-project condition only), to secure personal benefits (*selfBen*), and to benefit team members (*memBen*). Additionally, participants rated the relative importance of leader versus member efforts for project outcomes (*ldrImp*). These decision motivator variables were used in exploratory analyses to examine their mediating role in the effects of leadership generosity and responsibility (E1b and E2b).

The percentage of total rewards allocated to themselves by the leader (*selfAlloc*) serves as the primary dependent variable, which corresponds to x in the theoretical model. Our main analytical focus is twofold: first, comparing reward allocation decisions made before vs. after project (*preProj* vs. *postProj* groups), and second, comparing decisions made with known project outcomes (*negOut* vs. *posOut* groups). This approach allows us to examine how the timing of decision-making and the knowledge of outcomes influence leaders' allocation choices.

All statistical analyses were conducted using STATA/SE 18.0, with a significance level set at $p < .05$.

5 Results

5.1 Preliminary Analyses

Prior to analysis, we prepared the data by reverse-coding several personality trait items (*big5C1*, *fairness*, *modesty*, *grAvoid*) for consistency in measurement direction. Additionally, we computed a composite measure of conscientiousness (*big5C*) by averaging the reversed *big5C1* and the original *big5C2*. Summary statistics, including means and standard deviations across conditions, are presented in Table B2 in Appendix B.

[22]Participants were instructed to specify only the percentage (%) of the total rewards that they would allocate to themselves as the leader, choosing a value between 0 and 100. To ensure clarity and prevent misunderstandings, the interface was designed to automatically display the corresponding monetary amount for the leader, the per-member allocation, and its percentage of the total rewards as soon as the participant entered a value. This real-time feedback allowed participants to make informed decisions without ambiguity.

[23]Participants could not use a "back" function to review the scenario when answering this question.

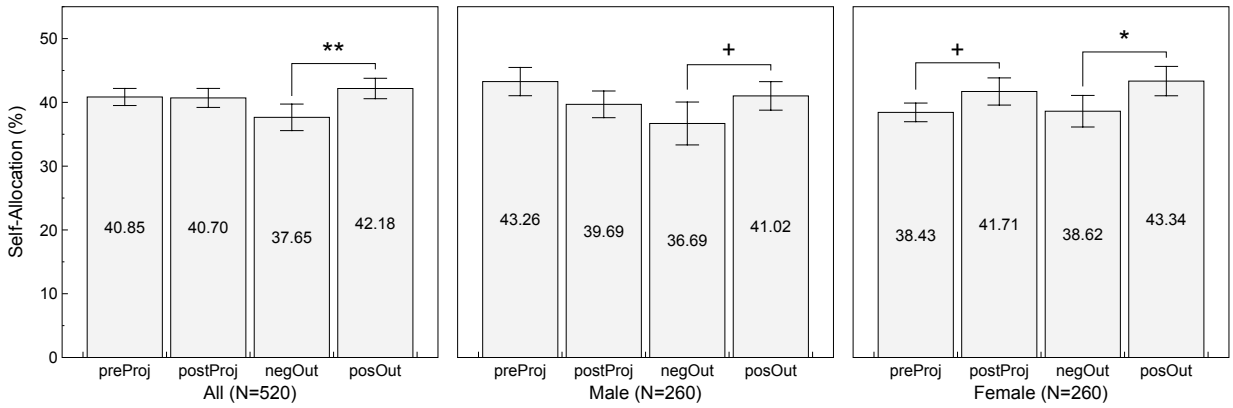


Figure 4: Mean Self-allocation Percentages across Experimental Conditions

Note: Experimental conditions—preProj (pre-project decision), postProj (post-project decision), negOut (negative outcome), and posOut (positive outcome). Due to the non-normal distribution of self-allocation across all conditions (confirmed by Shapiro-Wilk tests, $ps < .01$), Mann-Whitney U tests were used for statistical comparisons. Error bars indicate standard errors. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

Balance checks (Table B3 in Appendix) confirmed successful randomization, as no significant differences were found in personality traits between *preProj* and *postProj* or between *negOut* and *posOut* (all p-values> .05). However, some occupational categories had very few participants in certain conditions, leading to significant differences (e.g., executives, $p = .04$). To address this, we recategorized occupations into five broader groups: *regStaff*, *mgmtStaff*, *pubServ*, *partTime*, and *otherOcc* (the latter including all low-frequency categories). After recategorization, occupational distributions no longer differed significantly across conditions.

To verify the independence of personality trait measures, we conducted polychoric correlation analyses and confirmed that all coefficients remained below 0.7, indicating no multicollinearity concerns and affirming that these variables measure distinct personality traits (Shrestha, 2020). Correlation matrices for the full sample, male sample, and female sample are provided in Tables B4, B5, and B6 in Appendix B.[24]

5.2 Testing Main Hypotheses

Our main analysis focuses on testing two key hypotheses, H1 and H2. Figure 4 presents the mean self-allocation percentages across experimental conditions for the full sample (left panel) and separately by gender (middle and right panels). This figure reveals distinct gender differences in reward allocation decisions.[25] Additionally, Table 1 presents the regression results for these tests, using both OLS and robust regression methods, with and without controls for demographic and personality traits.

[24]Moreover, our Likert-scale measures of altruism and risk-taking correlated significantly with standard economic measures—willingness to donate (WTD) and willingness to bet (WTB), respectively—validating them as reliable proxies for economic preferences. Specifically, *altruism* showed a significant positive correlation with WTD (Spearman's $\rho = 0.29$, $p < .001$), while risk-taking was positively correlated with WTB ($\rho = 0.16$, $p < .001$).

[25]Table B2 in Appendix Bpresents histograms of *selfAlloc* across experimental conditions, providing a detailed distribution of our main outcome variable.

Table 1: Regression Results for Self-Allocation

	OLS				Robust Regression			
	Basic Controls		Full Controls		Basic Controls		Full Controls	
	Male	Female	Male	Female	Male	Female	Male	Female
Panel A: Testing H1 (Leadership Generosity)								
preProj	3.75	-4.32	4.04	-3.99	1.99	-3.97*	3.50	-4.13*
(vs *postProj*)	(3.07)	(2.71)	(3.24)	(2.77)	(2.35)	(1.79)	(2.40)	(1.93)
prob> F	0.55	0.08	0.37	0.32	0.98	0.08	0.64	0.52
N	130	130	130	130	130	130	130	130
Panel B: Testing H2 (Leadership Responsiblity)								
negOut	-4.66	-5.24^{+}	-2.97	-6.06^{+}	-6.09^{+}	-7.01**	-5.05	-7.35**
(vs *posOut*)	(4.16)	(3.13)	(4.43)	(3.22)	(3.09)	(2.41)	(3.36)	(2.69)
prob> F	0.26	0.28	0.22	0.11	0.20	0.02	0.03	0.54
N	130	130	130	130	130	130	130	130
Job Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Personality Traits	No	No	Yes	Yes	No	No	Yes	Yes

Note: Robust standard errors in parentheses. Basic Controls include age and job categories. Full Controls additionally include personality traits. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

5.2.1 Leadership Generosity (H1)

Hypothesis 1 posited that leaders who decide on the reward allocation before the project starts will allocate a smaller percentage of rewards to themselves compared to those making in the decision post-project decision condition. To test this hypothesis, we first conducted nonparametric comparisons between conditions, followed by regression analyses.

Given that Shapiro-Wilk tests indicated non-normal distributions of self-allocation across all conditions (all p-values$< .01$), we employed Mann-Whitney U tests for our initial comparisons. For the full sample, self-allocation levels were similar between *preProj* (M = 40.85, SD = 15.27) and *postProj* (M = 40.70, SD = 17.00) conditions ($p = .65$, $r = 0.03$). Gender-specific analyses revealed varying patterns: male leaders showed no systematic differences in self-allocation between *preProj* (M = 43.26, SD = 17.86) and *postProj* (M = 39.69, SD = 16.88) conditions ($p = .30$, $r = 0.09$), while female leaders demonstrated a marginally significant tendency to allocate less to themselves in *preProj* (M = 38.14, SD = 11.80) compared to *postProj* (M = 41.71, SD = 17.18) conditions ($p = .06$, $r = 0.16$). These initial results provide limited support for H1 in simple comparisons. However, to account for potential confounding factors and to examine the effects more rigorously, we conducted regression analyses, as shown in Panel A of Table 1.

Our regression results reveal partial support for H1 with notable gender differences. For female leaders, we find partial support for H1. The coefficient for *preProj* is consistently negative across all specifications, indicating that female leaders tend to allocate less to themselves in pre-project decisions compared to post-project decisions. This effect is statistically significant in the robust regression models with both basic control ($b = -3.97$, $p < .05$) and full control ($b = -4.13$, $p < .05$). These results suggest that female leaders tend to make more generous allocations to team members when deciding before the project starts, possibly as a strategy to motivate their team.

In contrast, for male leaders, we observe a positive coefficient for *preProj* across all specifications,

although these effects are not statistically significant (all p-values> .10). This trend, while not significant, suggests that male leaders might allocate more to themselves in pre-project decisions, contrary to our hypothesis.

These divergent patterns between male and female leaders highlight the importance of considering gender differences in leadership behaviors and decision-making processes. While female leaders show a tendency that aligns with our generosity hypothesis, male leaders do not exhibit a clear pattern in this regard.

These findings partially align with our theoretical predictions, though with important nuances. Our model predicted that leaders would generally allocate less to themselves in pre-project decisions compared to post-project decisions ($x^{pre} < x^{post}$), anticipating the motivational benefits of pre-commitment. However, the empirical results reveal that this effect manifests primarily among female leaders, while male leaders show no significant pre-project reduction in self-allocation. This gender-specific pattern may be driven by systematic differences in personality traits between male and female leaders—a possibility we explore in detail through moderation analysis in Section 5.3.1.

5.2.2 Leadership Responsibility (H2)

Hypothesis 2 posited that leaders informed of poor project outcomes would allocate a smaller percentage of rewards to themselves compared to those informed of better outcomes. To test this hypothesis, we first conducted nonparametric comparisons between conditions, followed by regression analyses.

As in the *preProj* vs *postProj* comparisons for H1, we employed Mann-Whitney U tests for our initial comparisons. For the overall sample, we found that leaders allocated significantly less to themselves in *negOut* (M = 37.65, SD = 23.73) compared to *posOut* (M = 42.18, SD = 18.26) conditions ($p = .005$, $r = 0.17$). Gender-specific analyses revealed consistent patterns: male leaders showed a marginally significant tendency to reduce self-allocation in *negOut* (M = 36.70, SD = 27.11) compared to *posOut* (M = 41.02, SD = 18.02) conditions ($p = .07$, $r = 0.16$), while female leaders demonstrated a significant reduction in self-allocation in *negOut* (M = 38.62, SD = 19.95) compared to *posOut* (M = 43.34, SD = 18.56) conditions ($p = .013$, $r = 0.21$). These initial results provide substantial support for H2.

Our regression results, shown in Panel B of Table 1, provide robust support for H2, revealing notable gender differences in how leaders demonstrate responsibility.

We observe negative coefficients for the *negOut* variable across all specifications for both male and female leaders, consistent with the nonparametric test results and supporting our hypothesis. However, the statistical significance and magnitude of these effects vary systematically by gender. For male leaders, the effect is not statistically significant in any of the models. However, in the robust regression model with basic controls, the effect is marginally significant ($b = -6.09$, $p < .10$), and the magnitude of the effect is substantial: the coefficient indicates that male leaders allocate 2.97 to 6.09 percentage points less to themselves in negative outcome scenarios compared to positive outcomes.[26] Female leaders, on the other hand, show a more pronounced and statistically significant effect, particularly in the robust regression models. In the full control model with robust regression, female leaders allocate 7.35 percentage points less to themselves in the negative outcome scenario ($p < .01$). This effect is consistent and significant across different specifications.

In conclusion, our findings provide support for H2, especially for female leaders, highlighting the importance of considering both gender and outcome information in understanding leadership decision-making in reward allocation contexts.

These findings largely support our theoretical predictions, though notable gender differences emerge. Our model predicted that leaders would allocate less to themselves following negative

[26]Recall that self-allocation was measured as the percentage of total rewards, from 0 to 100, that leaders would take for themselves.

outcomes compared to positive outcomes ($x^{neg} < x^{pos}$). This pattern is observed in our data, with the effect being statistically significant for female leaders and directionally consistent but not significant for male leaders. The weaker support for our prediction among male leaders may stem from various factors, including systematic gender differences in personality traits or distinct psychological pathways through which male leaders process and respond to negative outcomes, which will be clarified in later sections.

5.3 Moderating Roles of Individual Characteristics

To investigate how individual characteristics—such as personality traits, occupation, and age—moderate the relationship between experimental conditions and self-allocation decisions, we conducted regression analyses including interaction terms between the experimental condition and these characteristics.

To further interpret significant interactions involving personality traits, we performed simple slope analyses. Specifically, we examined the relationship between decision timing and self-allocation at levels of personality traits one standard deviation above (+1 SD) and below (-1 SD) their respective means (all personality trait variables were mean-centered for this analysis).

For H1, we tested whether individual characteristics moderate the effect of *preProj* on self-allocation (i.e., leadership generosity). Similarly, for H2, we examined whether these characteristics moderate the effect of *negOut* on self-allocation (i.e., leadership responsibility).

5.3.1 Moderation Effects of Personality Traits on Leadership Generosity (H1)

For the full-sample analysis, our model included the experimental condition (*preProj*), personality traits, their interaction terms, and control variables for age and gender. Gender-specific analyses were conducted separately for male and female subsamples, omitting the gender control variable but retaining age as a control.

The full results, including full-sample and gender-specific regressions, are presented in Tables B7 and B8 in Appendix B, with Figure B3 providing a visual summary of the interaction effects.

Among the personality traits examined, altruism was a particularly significant moderator of leadership commitment. For the overall sample, we found a significant negative interaction between *preProj* and altruism ($b = -5.45$, $p < .01$), indicating that more altruistic leaders were more likely to demonstrate generosity.

To clarify this interaction, we analyzed simple slopes at one standard deviation above (+1 SD) and below (-1 SD) the mean of altruism. At low altruism (-1 SD), *preProj* was significantly positively associated with *selfAlloc* ($b = 7.34$, $p < .05$), indicating that less altruistic leaders allocated more to themselves in the pre-project condition. In contrast, at high altruism (+1 SD), the relationship was significantly negative ($b = -7.53$, $p < .01$), suggesting that more altruistic leaders allocated less to themselves, demonstrating stronger generosity.

Figure 5 illustrates this interaction effect. Notably, this pattern differed by gender. For male leaders, the interaction effect was marginally significant ($b = -4.72$, $p < .10$), with a significant positive simple slope at low altruism ($b = 9.76$, $p < .05$) but no significant effect at high altruism. For female leaders, the interaction effect was strongly significant ($b = -5.99$, $p < .01$), with a significant negative simple slope at high altruism ($b = -11.87$, $p < .01$) but no significant effect at low altruism.

These findings suggest that altruism plays a crucial role in moderating the effect of leadership generosity. Less altruistic leaders tend to choose more generous reward allocations after the project, whereas more altruistic leaders are more likely to commit to generous allocations before the project begins.

These experimental findings align remarkably well with our theoretical predictions illustrated in Figure 2-(b). According to our model, when reputation costs are lower for pre-project decisions

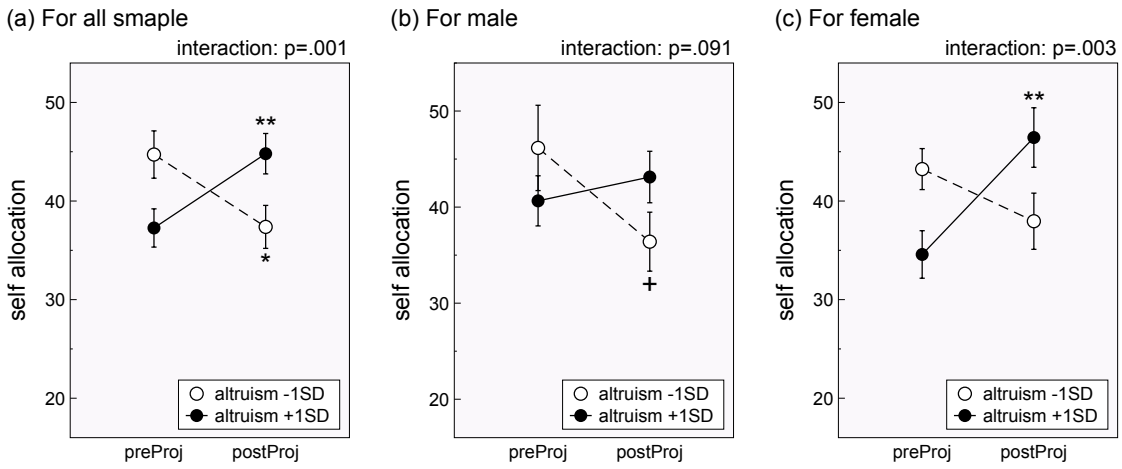


Figure 5: Interaction Effect of Altruism on Leadership Generosity

Note: This figure illustrates the interaction effect of altruism on leadership commitment. Low and high altruism are defined as -1 SD and +1 SD from the mean, respectively. Panel (a) shows results for the full sample, panel (b) for male leaders, and panel (c) for female leaders. Interaction p-values are provided for each panel. Error bars represent standard errors. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

compared to post-project decisions, less altruistic leaders are predicted to allocate more to themselves in pre-project decisions than in post-project decisions ($x^{pre} > x^{post}$), while highly altruistic leaders are expected to show the opposite pattern ($x^{pre} < x^{post}$).

Our experimental results confirm these predictions: less altruistic leaders (-1 SD) exhibit $x^{pre} > x^{post}$, whereas highly altruistic leaders (+1 SD) demonstrate $x^{pre} < x^{post}$. This alignment suggests that our model, despite its simplifying assumptions about reputation costs, successfully captures how altruism influences leadership styles related to generosity.

While altruism showed the most prominent moderation effect, other personality traits also demonstrated significant and marginally significant interaction effects, particularly among female leaders. Both job satisfaction (*jobSat*) and optimism (*optimism*) exhibited significant negative interaction effects, indicating that female leaders with higher levels of these traits were more likely to allocate rewards generously in the pre-project condition. Competitive orientation (*compet*) also showed a marginally significant negative interaction effect, suggesting that highly competitive female leaders tended to make more generous pre-project allocations.

Overall, these patterns reveal that the strongest pre-project generosity was observed among female leaders who were highly altruistic, satisfied with their current job, optimistic, and competitively oriented. This suggests that pre-commitment generosity may serve as a strategic tool for female leaders who feel secure in their position and confident in their professional environment.

5.3.2 Moderation Effects of Personality Traits on Leadership Responsibility (H2)

To examine the potential moderating effects of personality traits on leadership responsibility (H2), we conducted a series of regression analyses, following the same approach as in the previous section. The results are presented in Table B8 in Appendix B.

We observed that altruism significantly moderates the relationship between outcome condition and self-allocation. For the overall sample, leaders with low altruism (-1 SD) showed a stronger tendency to take responsibility by reducing their self-allocation in negative outcome scenarios compared to leaders with high altruism (+1 SD), who exhibited little change. This pattern was consistent

across both male and female leaders, suggesting that less altruistic leaders are more inclined to demonstrate responsibility regardless of gender.

These findings align well with our theoretical framework. As shown in (9) in Section 3.3, the model predicts that higher altruism (α) weakens the difference between self-allocations in positive and negative outcome conditions. This pattern is clearly observed in our data: leaders with lower altruism show a stronger tendency to reduce their self-allocation following negative outcomes, consistent with the model's predictions.

In addition to altruism, several other personality traits also moderated the responsibility effect. Leaders with lower risk-taking propensity, lower trust in others, lower job satisfaction, and lower career ambition all showed a stronger tendency to take responsibility in response to negative outcomes. Similarly, leaders with high modesty and greed avoidance exhibited a more pronounced sense of responsibility. These patterns were particularly evident among male leaders, suggesting that personality traits strongly influence how leaders respond to negative outcomes.

Synthesizing these moderation effects reveals a counterintuitive pattern that challenges conventional views on leadership. Leaders who exhibit the strongest responsibility behaviors tend to possess traits traditionally associated with "weak" leadership: they are less risk-taking, less competitive, less trusting, and less ambitious, yet more modest and risk-averse. This profile contrasts with the stereotypical image of a "strong" leader—one who is risk-taking, competitive, and ambitious (House and Aditya, 1997; Judge et al., 2002; Zaccaro et al., 2018).[27]

More importantly, our theoretical model suggests that the responsibility effect ($x^{pos} - x^{neg}$) becomes more pronounced when leaders perceive reputation costs to be higher for negative outcomes compared to positive outcomes. This aligns well with our empirical findings: leaders who are more risk-averse, less trusting, less ambitious, and less competitive—traits often associated with "weak" leadership—may be more inclined to perceive negative outcomes as carrying greater reputational risks. This heightened sensitivity likely drives them to take stronger responsibility by reducing self-allocation following negative outcomes.

5.3.3 Moderating Effects of Occupations

To investigate how occupational characteristics influence the expression of generosity and responsibility in leadership decisions, we conducted additional moderated regression analyses.[28] Table 2 presents these results, revealing distinct patterns across different occupational categories.

As shown in Table 2, differences in leadership style were observed across occupational categories, with *partTime* workers serving as the reference group. For leadership generosity (H1), managerial staff exhibited a significant positive interaction with the *preProj* dummy ($b = 12.79$, $p < .05$), indicating that the difference between pre-project and post-project allocations is 12.79 points more positive for managers than for part-time respondents. This suggests that managers may leverage their pre-project allocation authority to secure larger shares, allocating more to themselves in the pre-project condition than in the post-project condition, to a greater extent than part-time respondents.

Leadership responsibility (H2) showed more pronounced occupational differences. Regular staff displayed a marginally significant negative interaction with *negOut* ($b = -9.79$, $p < .10$), while

[27] Comprehensive reviews of leadership research consistently identify traits such as risk-taking, competitiveness, and career ambition as key characteristics of effective leaders (House and Aditya, 1997; Judge et al., 2002), and these traits remain central in our understanding of successful leadership, though contemporary research also highlights the role of adaptability and emotional intelligence (Zaccaro et al., 2018).

[28] In Appendix B, we also examined generational effects, including age and the experience of Japan's Employment Ice Age (1970-1983 birth cohort). The Employment Ice Age refers to a period (approximately 1993-2005) when Japanese new graduates faced exceptionally difficult employment conditions. We coded respondents born between 1970-1983, who entered the job market during this period, as the Ice Age generation ($iceAge = 1$). As shown in Tables B9 and B10 in the Appendix, we found no significant moderating effects of either age or the Ice Age experience on leadership generosity (H1) or responsibility (H2) across all samples.

Table 2: Moderating Effects of Occupation on Self-Allocation

	H1: Generosity		H2: Responsibility	
Variable	Coefficient	SE	Coefficient	SE
treatment (*preProj* for H1; *negOut* for H2)	-2.57	3.18	0.00	4.31
regStaff	-0.07	2.68	3.01	3.49
mgmtStaff	-7.74*	3.86	8.45	6.33
pubServ	-5.71	4.24	4.49	5.77
otherOcc	-4.73	3.46	-2.23	4.15
treatment × *regStaff*	-0.36	3.79	-9.79+	5.22
treatment × *mgmtStaff*	12.79*	5.58	-20.58*	9.45
treatment × *pubServ*	5.17	5.96	-10.87	7.69
treatment × *otherOcc*	4.79	4.72	-3.25	5.80
age	0.06	0.07	-0.03	0.09
female	1.53	1.48	4.33*	2.02
Prob > F	0.403		0.002	
N	260		260	

Note: This table presents results from robust regression estimating the moderating effects of occupation on self-allocation. *partTime* is the reference category for occupation variables. Robust standard errors are reported. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

managerial staff exhibited an even stronger negative effect ($b = -20.58$, $p < .05$). This indicates that both regular and managerial employees tend to exhibit stronger responsibility in response to negative outcomes, with managers demonstrating particularly pronounced responsibility.

Notably, despite representing only 7% of our sample, managerial staff exhibited significant interaction effects in both H1 and H2, suggesting that leadership experience may intensify both generosity and responsibility tendencies. The robustness of these effects, despite the relatively small sample size, highlights how managerial experience enhances distinct leadership styles in reward allocation.

5.4 Mediating Roles of Decision Motivators

Here, we examine the psychological mechanisms through which leaders make their reward allocation choices, focusing on how various decision motivators mediate these leadership behaviors.

5.4.1 Mediating Role of Self-Allocation Motivations

After making their allocation decisions, participants rated the importance of various reasons for their choices. In the pre-project condition, they evaluated four potential motivations, including a unique motivation to encourage team members' effort (*motMem*) due to its relevance to pre-project timing. In all other conditions, participants assessed three common motivations: concern for social image (*socImage*), securing personal benefits (*selfBen*), and benefiting team members (*memBen*). Our preliminary analysis (Table B11 in Appendix B) revealed that *motMem* played a relatively minor role in the pre-project condition.

We conducted parallel mediation analyses to examine how these self-reported motivations—measured across all four conditions (*socImage*, *selfBen*, and *memBen*)—mediate the effects of both generosity (H1) and responsibility (H2) on allocation decisions. This approach allows us to identify which of these three common motivations play a key role in driving generous commitment (H1)

Table 3: Mediating Role of Self-Allocation Motivations

		H1: Generosity			H2: Responsibility		
Sample	Mediator	Indirect Effect	SE	95% BCa CI	Indirect Effect	SE	95% BCa CI
All	*socImage*	0.11	0.25	[-0.16, 0.98]	0.04	0.20	[-0.17, 0.73]
	selfBen	-0.77	0.67	[-2.25, 0.43]	-1.71*	0.93	[-3.93, -0.26]
	memBen	-0.44^{+}	0.37	[-1.51, 0.05]	-0.50	0.62	[-2.08, 0.46]
Male	*socImage*	-0.44	0.69	[-2.61, 0.43]	0.02	0.33	[-0.39, 0.97]
	selfBen	0.15	1.16	[-2.20, 2.56]	-3.20**	1.58	[-7.37, -0.81]
	memBen	0.18	0.43	[-0.29, 1.79]	-2.90^{+}	1.82	[-6.97, 0.22]
Female	*socImage*	0.14	0.41	[-0.42, 1.38]	-0.08	0.37	[-1.33, 0.35]
	selfBen	-1.28^{+}	0.86	[-3.43, 0.03]	-0.43	0.89	[-2.98, 0.78]
	memBen	-1.06*	0.73	[-3.40, -0.14]	-0.19	0.52	[-2.05, 0.39]

Note: This table presents the results of structural equation modeling (SEM) analyses examining the effects of leadership generosity (H1) and responsibility (H2) on self-allocation decisions, mediated through *socImage*, *selfBen*, and *memBen*. The analysis was conducted for the full sample, as well as separately for male and female participants. *selfAlloc* is the dependent variable, with intervention conditions (*preProj* for H1, *negOut* for H2) as independent variables, controlling for *age* and gender (*female*). Indirect effects and their 95% bias-corrected and accelerated (BCa) confidence intervals were estimated using bootstrap resampling (5000 iterations). Notably, for H2, in the male subsample, the indirect effect through *selfBen* remained significant at the 99% BCa CI [-8.75, -0.30]. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

and responsible accountability (H2) in leaders' reward allocation decisions. Table 3 presents the results.

For H1, we conducted a parallel mediation analysis with *preProj* as the independent variable, *selfAlloc* as the dependent variable, and *socImage*, *selfBen*, and *memBen* as parallel mediators. The analysis revealed notable gender differences in the mediating mechanisms: female leaders demonstrated a significant negative indirect effect through *memBen* ($b = -1.06$, $p < .05$, 95% BCa CI [-3.40, -0.14])[29], suggesting that the pre-project context may heighten their motivation to prioritize team member benefits, which in turn drives them toward more generous commitment. In contrast, male leaders showed no such mediation effect through *memBen* ($b = 0.18$, n.s.), and if anything, the direction of the effect was opposite.

For H2, we used a similar parallel mediation model, with *negOut* as the independent variable. For the full sample, we observed a significant negative indirect effect through *selfBen* ($b = -1.71$, 95% BCa CI [-3.93, -0.26]).

Notably, this mediation pattern differed by gender. For male leaders, the indirect effect through *selfBen* was particularly strong, remaining significant even at the 99% confidence level ($b = -3.20$, 99% BCa CI [-8.75, -0.30]). In contrast, none of the mediators showed significant effects for female leaders. This suggests that while both genders exhibit responsibility, male leaders are primarily driven by decreased self-benefit motivations, whereas female leaders may rely on other psychological mechanisms.

[29]BCa refers to 95% bias-corrected and accelerated confidence intervals.

Table 4: Mediating Roles of Leader Effort Importance

	H1: Generosity			H2: Responsibility		
Sample	Indirect Effect	SE	95% BCa CI	Indirect Effect	SE	95% BCa CI
All	-0.04	0.19	[-0.58, 0.26]	-1.77*	1.01	[-4.11, -0.11]
Male	0.10	0.33	[-0.32, 1.18]	-5.02**	2.12	[-9.89, -1.55]
Female	-0.05	0.41	[-0.92, 0.85]	0.06	0.67	[-1.22, 1.47]

Note: This table presents the results of a mediation analysis examining the effects of leadership generosity (H1) and responsibility (H2) on self-allocation decisions, with the perceived importance of the leader's effort for project success (*ldrImp*) as the mediator. The analysis was conducted for the full sample, as well as separately for male and female participants. *selfAlloc* is the dependent variable, with intervention conditions (*preProj* for H1, *negOut* for H2) as independent variables, controlling for age and gender (*female*). Indirect effects and their 95% bias-corrected and accelerated (BCa) confidence intervals were estimated using bootstrap resampling (5000 iterations). Notably, in the male subsample, the coefficient remained significant at the 99% BCa CI [-11.88, -0.50]. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

5.4.2 Mediating Roles of Leader Effort Importance

Next, we examined whether leaders' perceptions of their own effort importance, which may vary depending on the situation, act as a key factor driving generous commitment (H1) and responsible accountability (H2). To test this, we conducted mediation analyses using perceived leader effort importance (*ldrImp*) as the mediator. This measure captures leaders' assessments of the relative importance of their leadership compared to team members' contributions in determining project success or failure. The results, presented in Table 4, reveal how changes in leaders' self-perceptions about their leadership role shape their reward allocation choices.

For H1, we found no significant indirect effects through *ldrImp* across all samples, suggesting that the timing of the decision (pre- vs. post-project) does not significantly influence self-allocation through changes in leaders' perceptions of their effort's importance. However, for H2, we observed significant indirect effects, particularly in the male sample. The negative indirect effect ($b = -5.02$, 99% BCa CI [-11.88, -0.50]) suggests that when faced with negative outcomes (vs. positive outcomes), male leaders tend to attribute greater importance to their own lack of effort, leading to lower self-allocation.

In summary, these mediation analyses highlight two key psychological mechanisms underlying leaders' allocation decisions. For generous commitment (H1), the parallel mediation analysis on self-allocation motivations revealed notable gender differences: female leaders were primarily driven by the motivation to benefit team members (*memBen*), whereas male leaders showed no significant mediation effects.

In contrast, for responsible accountability (H2), both mediation analyses—on self-allocation motivations and perceived leader effort importance—revealed a consistent pattern, particularly among male leaders. Male leaders exhibited a significant negative indirect effect through *selfBen*, suggesting they were driven by the belief that they should sacrifice personal gains after negative outcomes. Additionally, the *ldrImp* analysis showed that male leaders were more likely to attribute failure to their own lack of effort, which further reduced their self-allocation.

This consistent pattern indicates a notable gender difference in how responsibility manifests in leadership behaviors. Male leaders appear to internalize responsibility by attributing poor outcomes to their own leadership inadequacy, leading to stronger self-blame and a heightened sense of personal accountability. In contrast, the factors influencing female leaders' responsibility remain less clear. Their decisions may instead be shaped by external pressures, such as anticipating greater

backlash from both society and the market or adhering to organizational norms that impose stricter accountability expectations on women in leadership roles.

6 Discussion

Our study investigates how leaders make reward allocation decisions in team settings, focusing on two key dimensions: leadership generosity—pre-committing to a smaller personal share before the project begins—and leadership responsibility—adjusting one's own share downward after negative outcomes to demonstrate accountability.

In this section, we contextualize our experimental findings within existing research on leadership and gender differences, highlighting how our results align with or extend prior empirical evidence. We then connect our experimental findings to our theoretical framework, demonstrating how individual traits and reputational concerns shape leadership decisions. Finally, we discuss a follow-up experiment that examines how generosity in reward allocation influences team members' motivation to exert effort.

6.1 Explaining Experimental Findings through Prior Research

Our experimental results reveal notable gender differences in leadership generosity (H1): female leaders are more likely than male leaders to commit to generous reward allocations, taking a smaller share for themselves while allocating a larger share to team members, especially those with higher levels of altruism, job satisfaction, optimism, and competitive orientation. This finding provides insights into the empirical patterns observed in real-world corporate settings. For instance, Gupta et al. (2018) document that female CEOs in S&P 500 firms receive lower compensation than their male counterparts. Similarly, Hill et al. (2015) show that while the gender pay gap among CEOs is relatively small in smaller firms, it becomes significantly larger in larger corporations, with female CEOs receiving markedly lower compensation. Moreover, Adams and Funk (2012) find that female CEOs tend to receive a smaller proportion of their compensation in performance-based pay compared to male CEOs.

The lack of generosity among male leaders can be explained through Eagly and Karau's (2002) role congruity theory. According to their framework, perceived congruity or incongruity between leadership roles and gender roles influences evaluations of leaders. Male leaders likely experience congruence between masculine leadership norms and their gender role, potentially leading them to recognize that demonstrating "traditional" leadership behaviors such as assertiveness and dominance garners social approval. Allocating more rewards to themselves before project commencement may serve as a method of signaling authority and status, aligning with masculine leadership norms. From this role congruity perspective, male leaders' preference for authoritative self-allocation rather than generosity may possibly reflect deeply embedded social role expectations.

Our experimental evidence suggests that such compensation patterns may not merely result from external constraints but could partly stem from the fact that female leaders themselves are more likely to pre-commit to lower reward shares. This behavior may reflect a strategic adaptation to prevailing corporate norms or an internalized acceptance of existing institutional structures. Furthermore, it is possible that female leaders, being aware of the persistent gender pay gap, consciously or subconsciously adjust their reward allocation decisions in ways that align with these societal expectations. This priority on others' benefits over personal gain is consistent with recent research by Roussille (2024), which demonstrates that women generally request lower salaries compared to men in compensation negotiations. If so, their generosity may not only reflect inherent preferences but also a response to the broader professional environment in which they operate.

Furthermore, existing research suggests that female leaders place greater emphasis on employee welfare than their male counterparts. Studies show that female executives are more inclined to

raise employee wages (Kunze & Miller, 2017), invest in employee benefits and workplace improvements (Post & Byron, 2015), and adopt broader stakeholder-oriented governance approaches that consider not only shareholders but also employees and local communities (Adams & Ferreira, 2009). Additionally, female leaders exhibit a stronger preference for fairness and ethical considerations, making them more likely to reduce wage disparities and enhance overall employee compensation (Ng & Sears, 2017). These empirical findings align with our mediation analysis, which indicates that female leaders' generous commitment was primarily driven by their motivation to benefit team members (*memBen*).

These findings on leadership generosity strongly resonate with the leadership characteristics of female leaders identified in the meta-analysis by Eagly et al. (2003). Our experimental results not only support their observations regarding the transformational leadership style of female leaders but also extend this understanding by demonstrating how it manifests in concrete decision-making contexts such as reward allocation. Specifically, the key traits of female leadership highlighted by Eagly et al.—prioritizing team welfare and adopting a more nuanced leadership approach that transcends personal gain—closely parallel the generosity observed in our experiments.

In contrast, our findings on leadership responsibility (H2) suggest that both male and female leaders exhibit responsible behavior by reducing their self-allocation after negative outcomes. However, the psychological mechanisms driving this responsibility differ: male leaders primarily exhibit responsibility through internalized self-blame, perceiving negative outcomes as a reflection of their own leadership inadequacy. This distinction aligns with prior research showing that female and male leaders face different social and institutional pressures when responding to failure. For example, Lee and James (2007) find that when female CEOs resign under difficult circumstances, market reactions tend to be more negative compared to male CEOs, suggesting that female leaders operate under stricter scrutiny. This may create a psychological environment in which female leaders feel an implicit obligation to demonstrate responsibility more consistently, regardless of whether they attribute failure to their own leadership.

Our conceptualization of leadership responsibility also complements empirical findings on executive compensation by Bertrand and Mullainathan (2001), who document an asymmetry in how CEOs' pay responds to performance: rewards increase with good luck (e.g., industry-wide positive shocks) but do not correspondingly decrease with bad luck. Their research demonstrates that this asymmetry is less pronounced in firms with stronger governance structures, suggesting that institutional factors can promote responsible behavior. Our theoretical framework extends this insight by explicitly modeling how both organizational contexts (through reputation costs) and individual characteristics (particularly altruism and gender) shape leaders' willingness to demonstrate responsibility through reward allocation, especially following negative outcomes.

Our results suggest that male leaders' responsibility is conditional on their perception of personal leadership failure, whereas female leaders may be more influenced by broader social and institutional expectations. If male leaders do not perceive failure as stemming from their own leadership shortcomings, they may feel less compelled to demonstrate responsibility in their reward allocations. This sheds light on an important asymmetry in leadership accountability: female leaders may feel external pressures to take responsibility regardless of the circumstances, while male leaders' sense of responsibility is primarily self-driven and contingent on their attribution of failure.

6.2 Connecting Experimental Findings to Our Theoretical Model

Our experimental findings align well with the predictions derived from our theoretical model. The data offered partial support for the generosity hypothesis (H1) and strong support for the responsibility hypothesis (H2). Specifically, the experimental results confirmed the model's prediction that more altruistic leaders are likely to engage in generous commitment, while less altruistic leaders are more prone to demonstrate responsible accountability.

Furthermore, the consistency between our theoretical predictions and empirical results becomes

even clearer when we consider situation-dependent reputation costs and how various personality traits contribute to their formation.

First, if the reputational cost a leader incurs is lower when they commit to a reward allocation before the project begins (*preProj*) than when they decide after observing the team's performance (*postProj*), our theoretical model predicts distinct leadership tendencies based on altruism. Specifically, as illustrated in Figure 2-(b), leaders with lower altruism should exhibit non-generous decision-making ($x^{pre} > x^{post}$), while those with higher altruism should exhibit generosity ($x^{pre} < x^{post}$). This theoretical prediction is strongly supported by our experimental findings, as shown in Figure 5, where high-altruism leaders tend to allocate smaller shares to themselves in the pre-project condition compared to the post-project condition.

Second, leaders with traits such as risk aversion, lower trust, and lower career ambition—often associated with "weaker" leadership—demonstrated stronger responsibility in reward allocation. This pattern suggests that these leaders may be more sensitive to reputational risks in negative-outcome situations, prompting them to take greater responsibility to safeguard their leadership reputation. In contrast, leaders who are more risk-seeking and ambitious may perceive lower reputational costs from maintaining their initial self-allocation, leading to a weaker response to negative outcomes. This result highlights an important asymmetry in leadership accountability: while high-status, ambitious leaders may feel secure in maintaining their rewards, those with a more cautious leadership approach may prioritize signaling accountability to preserve their standing.

6.3 A Follow-Up Experiment on How Leadership Generosity Affects Team Effort

To further investigate the impact of generous commitment on team motivation, we conducted a follow-up survey experiment where participants assumed the role of team members rather than leaders. This 2×2 factorial experiment manipulated both the generosity of reward allocation (generous vs. ungenerous) and the decision-making authority (leader vs. upper management). Details of this follow-up experiment, including its design and analysis, are provided in Appendix C.

This follow-up experiment found that generous reward allocation (higher reward share for the members), compared to ungenerous allocation (lower reward share for the members), significantly increased members' effort motivation, regardless of whether the decision was made by the leader or upper management. Moreover, the positive effect of generosity on effort motivation was stronger when the decision was made by the leader rather than by upper management. These findings suggest that generosity generally enhances team motivation, but its impact depends on the perceived legitimacy and agency of the decision-maker.

The complementary experiment also revealed that individual differences influence how team members respond to reward allocation decisions. When a leader determined the reward allocation, those who generally trust others were less sensitive to monetary incentives, while those who were less trusting exhibited a stronger response to a higher (vs. lower) reward share. When upper management made the allocation decision, members who strongly accept hierarchical authority were less responsive to financial incentives, whereas those with weaker hierarchical beliefs showed a greater motivational boost. Additionally, generous leaders were perceived as less authoritarian, which increased effort motivation. However, generosity also weakened the perception that the leader was male, which in turn slightly dampened effort motivation. In contrast, when upper management determined the allocation, only perceptions of authoritarianism mediated the effect, with no significant gender-related effects.

Notably, our main experiment showed that female leaders were more likely than male leaders to commit to generous reward allocations. Taken together, these findings suggest a bidirectional relationship: female leaders tend to adopt more generous strategies, while generosity itself strengthens the perception that a leader is female. This may create additional pressure for female leaders to conform to generosity expectations, shaping their future decision-making.

7 Concluding Remarks

This study examined how leaders make reward allocation decisions in team settings, focusing on two key aspects of leadership behavior: generous commitment and responsible accountability. Our theoretical framework provides clear predictions about how leaders' reward allocation decisions are influenced by timing and outcome information. Through a randomized controlled experiment with 520 Japanese participants, we tested these theoretical predictions, and our experimental results largely support them.

Our experimental findings reveal intriguing results on leadership generosity and responsibility. Generosity, meaning leaders' commitment to more generous reward allocation rules in the pre-project phase compared to the post-project phase, received partial support. Female leaders demonstrated greater generosity, particularly those with higher levels of altruism, while male leaders showed no consistent pattern. Responsibility, meaning leaders' reduction of their share of rewards when facing negative outcomes compared to positive ones, received robust support. Male leaders showed stronger responsibility through psychological mechanisms related to internalized self-blame and heightened personal accountability for negative outcomes. Notably, leaders demonstrating the strongest responsibility often possessed traits traditionally associated with "weaker" leadership. These experimental results align well with our theoretical analysis, confirming that generosity is more likely among highly altruistic leaders, while less altruistic leaders tend to show stronger responsibility.

Our study contributes to the literature on leadership by integrating theoretical predictions with empirical validation through a pre-registered experiment, offering new insights into how gender and personality shape leadership styles in reward allocation decisions in teams.

Our study offers several practical and managerial implications for leadership selection, development, and decision-making. First, our findings highlight the role of pre-commitment in leadership decision-making. Both our theoretical model and experimental evidence suggest that leaders who commit to a reward allocation before the project starts tend to make more generous decisions. We also identify key leader characteristics that influence this tendency.

Second, our findings suggest that individual differences play an important role in leadership behavior, which has implications for both leader selection and development. Gender and personality traits influence how leaders allocate rewards and how they respond to performance outcomes. Understanding these factors can help organizations align leadership styles with team needs when selecting leaders. Additionally, our theoretical framework highlights how institutional arrangements—such as performance evaluation systems, transparency requirements, and governance structures—can shape leaders' perceived reputation costs and subsequent decision-making. Organizations should consider how these institutional factors interact with individual characteristics to determine leadership effectiveness. Furthermore, leadership development programs may benefit from training leaders to recognize the strategic value of pre-commitment and use reward allocation effectively within their specific institutional contexts. Developing self-awareness and emotional intelligence can also help leaders better understand how their personal characteristics and institutional environments jointly shape their decision-making tendencies.

However, several limitations of our study should be noted. First, while our experiment provides valuable insights into leadership decision-making, it was scenario-based, meaning that participants' choices may not fully capture their behavior in real organizational settings where actual rewards are at stake. Future research using field experiments or observational data would help validate and extend our findings.

Second, our experiment focused solely on leaders' reward allocation decisions, without fully examining how team members respond to these choices. While our follow-up experiment provided partial insights by showing how generous reward allocations influence members' effort motivation, employees' broader reactions to leaders' commitments and accountability measures likely play a crucial role in shaping overall team functioning. Further research incorporating a wider range of

employee responses would offer a more comprehensive understanding of leadership effectiveness.

Third, our sample consisted entirely of Japanese participants, and cultural factors may influence both leadership behaviors and their interpretation. For instance, prior research has shown that Japanese children are more prone to experiencing shame, which leads them to prioritize others' evaluations and social harmony, and when their shame is particularly strong, they may exhibit excessive self-criticism or blame others compared to American children (Furukawa et al., 2012). Such cultural differences in shame sensitivity and social evaluation concerns might affect how leaders perceive and respond to reputation costs, particularly in negative outcome scenarios. Cross-cultural studies would be necessary to assess the generalizability of our findings and to explore whether similar incentive structures drive leadership decisions in different cultural contexts.

Finally, we focused on monetary reward allocation as a mechanism for demonstrating generosity and responsibility. However, in real organizations, leaders utilize various other tools, such as resource allocation, task delegation, and public acknowledgment of responsibility. Investigating how these alternative mechanisms interact with reward allocation would offer deeper insights into leadership strategies. These areas remain open for future research.

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A Theory Appendix

This appendix provides detailed derivations and additional analyses that complement the theoretical framework presented in the main text. We first examine the member's effort choice in the negative and positive outcome scenarios, followed by a comprehensive comparison of equilibrium outcomes across all four cases considered in our model.

A1 Member's Effort Choice in *negOut* and *posOut* Scenarios

In the first stage of *negOut* and *posOut* scenarios, the member anticipates receiving a reward of $(1 - x^{neg})\pi_{neg}$ if the outcome is negative, or $(1 - x^{pos})\pi_{pos}$ if the outcome is positive, and chooses their effort level accordingly. Unlike the *postProj* scenario, the leader's allocation decisions (x^{neg} and x^{pos}) are determined independently of the member's effort, so the member's effort influences outcomes only through changes in the success probability P. In the first stage, the member chooses e_m to maximize their utility $u_m = P\,\pi_{pos}(1 - x^{pos}) + (1 - P)\pi_{neg}(1 - x^{neg}) - c_m$. The first-order condition is:

$$\begin{aligned} \frac{du_m}{de_m} &= \pi_{pos}(1 - x^{pos}) - \pi_{neg}(1 - x^{neg}) - \mu e_m \\ &= \Delta_\pi - \frac{(1-\alpha)\Delta_\pi(\pi_{pos} + \pi_{neg})}{\gamma} - \mu e_m = 0 \end{aligned} \tag{A1}$$

This yields the equilibrium effort level in the case where the leader makes allocation decisions based on outcomes, denoted as e_m^{res}:

$$\begin{aligned} e_m^{res} &= \frac{\Delta_\pi - (x^{pos}\pi_{pos} - x^{neg}\pi_{neg})}{\mu} \\ &= \frac{\Delta_\pi\{\gamma - (1-\alpha)(\pi_{pos} + \pi_{neg})\}}{\gamma\mu} \end{aligned} \tag{A2}$$

To ensure $e_m^{res} \geq 0$, we need $\gamma \geq (1 - \alpha)(\pi_{pos} + \pi_{neg})$, which corresponds to Assumption (ii).

A2 Comparison of Equilibrium Outcomes across Four Cases

Here, we compare the equilibrium allocation rules and member effort levels across the four scenarios.

A2.1 Comparison of Reward Allocation Rules

We first compare equilibrium allocation rules. From our previous analysis, we know that $x^{pre} \leq x^{post}$ and $x^{neg} \leq x^{pos}$ hold. Comparing x^{pre} with x^{neg}, we have:

$$x^{pre} - x^{neg} = \frac{(1-\alpha)\Delta\pi^2\{\gamma - (2-\alpha)\pi_{neg}\}}{\gamma\{\gamma\mu + (2-\alpha)\Delta\pi^2\}} \gtreqless 0 \quad \Leftrightarrow \quad \gamma \gtreqless \bar{\gamma} \equiv (2-\alpha)\pi_{neg}$$

This result indicates that $x^{pre} \geq x^{neg}$ holds when $\gamma \geq \bar{\gamma}$, and $x^{pre} < x^{neg}$ holds when $\gamma < \bar{\gamma}$. When γ is small and α is large, there exists a region where $x^{pre} < x^{neg}$. Figure A1 illustrates this relationship. The left panel (a) shows the case where $\pi_{neg} = 0.6$, while the right panel (b) shows the case where $\pi_{neg} = 3$. The dashed line represents the boundary above which Assumption (ii) is satisfied, while the solid line depicts $\gamma = \bar{\gamma}$, the threshold determining whether x^{pre} exceeds x^{neg}. As evident from the figure, the region where $x^{pre} < x^{neg}$ occurs (represented by the shaded area) becomes larger as the relative value of π_{neg} increases.

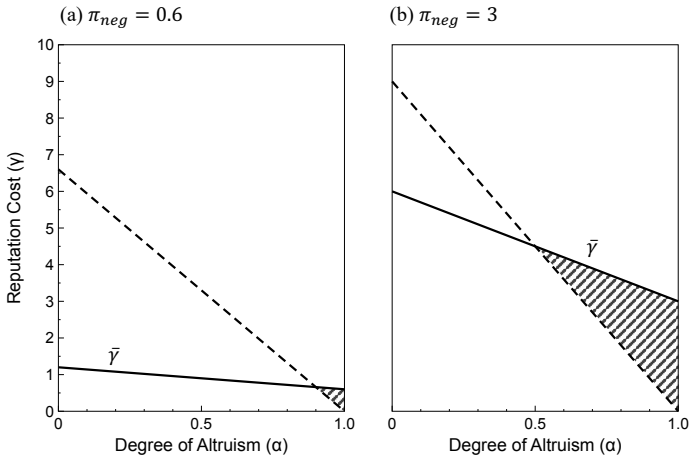


Figure A1: Comparison of x^{pre} and x^{neg} for Different Values of π_{neg}

Note: This figure illustrates threshold values of γ. The dashed line represents the boundary above which Assumption (ii) is satisfied, while the solid line depicts $\gamma = \bar{\gamma}$, the threshold determining whether x^{pre} exceeds x^{neg}. Both panels use common parameter values $\mu = 6$ and $\pi_{pos} = 6$, with panel (a) showing the case where $\pi_{neg} = 0.6$ and panel (b) showing $\pi_{neg} = 3$. As evident from the figure, the region where $x^{pre} < x^{neg}$ occurs (represented by the shaded area) becomes larger as the relative value of π_{neg} increases.

To explain this result intuitively, we can compare the marginal benefits of allocation rules in the pre-project and negative outcome scenarios. These marginal benefits are:

$$MB_x\big|_{pre} = (1-\alpha)(P\Delta\pi + \pi_{neg}) + \frac{\partial e_m^{pre}}{\partial x} x^{pre}\Delta\pi,$$
$$MB_x\big|_{neg} = (1-\alpha)\pi_{neg}.$$

Therefore, the difference is:

$$MB_x\big|_{pre} - MB_x\big|_{neg} = \left\{(1-\alpha)e_m^{pre} + \frac{\partial e_m^{pre}}{\partial x} x^{pre}\right\}\Delta\pi,$$

The first term, $(1-\alpha)e_m^{pre}$, captures the direct marginal benefit, representing the difference between the expected revenue under pre-project conditions and the fixed π_{neg} in the negative outcome scenario. This term decreases as α increases or γ decreases (since e_m^{pre} is an increasing function of γ). The second term represents the indirect demotivating effect of x, which only exists in the preProj scenario. When γ is small and α is large, the direct effect becomes smaller, making it more likely that $x^{pre} < x^{neg}$ holds.

Next, we compare x^{post} and x^{pos}. We have:

$$x^{post} - x^{pos} = -\frac{(1-\alpha)\Delta_\pi\left\{\gamma(\mu-\Delta_\pi) + 2(1-\alpha)\Delta_\pi\pi_{pos}\right\}}{\gamma\{2(1-\alpha)\Delta_\pi^2 + \gamma\mu\}} < 0, \tag{A3}$$

where the inequality follows from Assumption (i). Combining our results, we obtain the ordering: $\max\{x^{pre}, x^{neg}\} \leq x^{post} \leq x^{pos}$.

While our experiment primarily focused on comparing x between *preProj* and *postProj* conditions (for generosity) and between *negOut* and *posOut* conditions (for responsibility), we also obtained interesting results when comparing *selfAlloc* between *preProj* and *negOut* conditions,

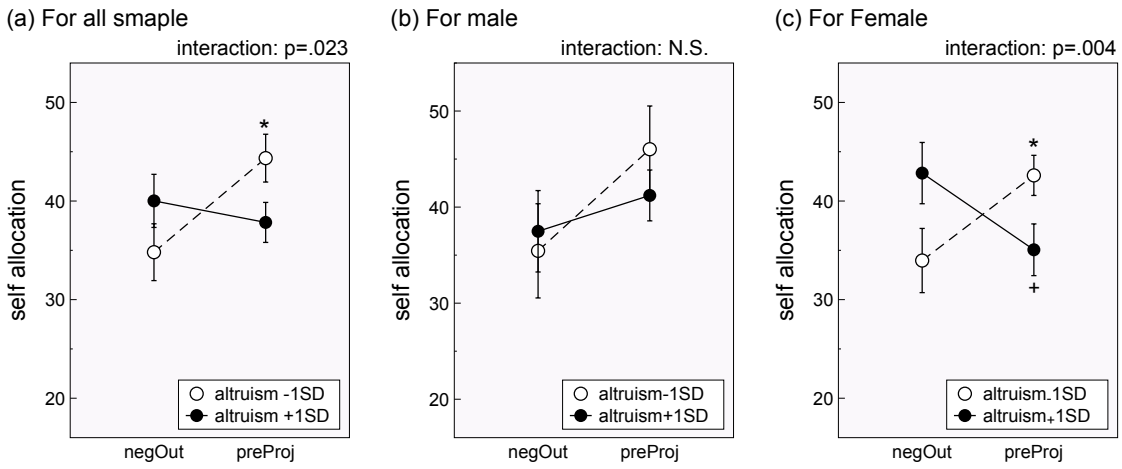


Figure A2: Interaction Effect of Altruism on Self-Allocation: preProj vs. negOut

Note: This figure illustrates the interaction effect of altruism on self-allocation by comparing the preProj (pre-commitment) and negOut (after negative outcome) conditions. The results are based on a regression where self-allocation is the dependent variable, and the independent variables include a dummy for preProj (=1 if preProj, =0 if negOut), altruism, and their interaction term, controlling for age and gender in the full sample (panel a) and for age only in the male (panel b) and female (panel c) subsamples. Low and high altruism are defined as -1 SD and +1 SD from the mean, respectively. Panel (a) shows results for the full sample, panel (b) for male leaders, and panel (c) for female leaders. Interaction p-values are provided for each panel. Error bars represent standard errors. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

which align with our theoretical findings on x^{pre} versus x^{neg}. Figure A2 illustrates the interaction effect between the dummy variable for treatment condition ($preProj = 1$, $negOut = 0$), altruism, and their interaction term, controlling for age and gender. The results show a significant interaction effect that is consistent with our theoretical predictions: when altruism is low, $x^{pre} > x^{neg}$, and when altruism is high, $x^{pre} < x^{neg}$. We also observe a significant simple slope effect in the low-altruism group. These findings not only demonstrate the precision of our scenario-based experimental design but also provide compelling evidence supporting the explanatory power of our theoretical model in real-world settings.

These comparisons across the four scenarios reveal when leaders tend toward generosity or greed in their allocation decisions. Leaders demonstrate greatest generosity either before projects begin or after negative outcomes are confirmed, with their relative magnitudes depending on their altruism and reputation concerns. By contrast, leaders exhibit maximum greed after confirming positive outcomes. These findings underscore how timing and outcome information shape leaders' strategic allocation behavior.

A2.2 Comparison of Member Effort

Next, we compare equilibrium effort levels across all scenarios. This comparison is theoretically important as it helps us understand which timing of reward allocation decisions lead to the highest team performance.

Since we have already established that $e_m^{pre} \geq e_m^{post}$, we first compare e_m^{pre} and e_m^{res}. Using $x^{pre} \leq x^{post} \leq x^{pos}$ along with (8) to compare (1) and (A2), we obtain:

$$e_m^{pre} = \frac{\Delta_\pi}{\mu}(1 - x^{pre}) > \frac{\Delta_\pi}{\mu}\{1 - (x^{pos} + x^{neg})\} = \frac{\Delta_\pi}{\mu}\left\{1 - \frac{(1-\alpha)(\pi_{pos} + \pi_{neg})}{\gamma}\right\} = e_m^{res}$$

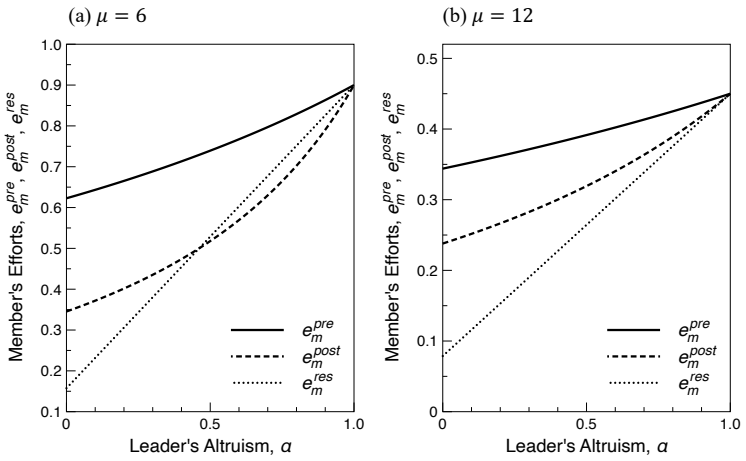


Figure A3: Equilibrium Member Effort for Different Effort Cost Parameters

Note: This figure illustrates equilibrium member effort levels across all cases. Both panels use common parameter values $\gamma = 8$, $\Delta_\pi = 5.4$, with panel (a) showing the case where $\mu = 6 \in [\Delta_\pi, 2\Delta_\pi]$ and panel (b) showing $\mu > 2\Delta_\pi$. In both cases, we can confirm that e_m^{pre} elicits the highest member effort level.

Thus, we have proven that $e_m^{pre} > e_m^{res}$.

Next, we compare e_m^{res} and e_m^{post}. Using the first-order conditions for member's effort choice in *postProj* case (5) and in *postOut* case (A1), we define the marginal benefits of effort as $MB_e\big|_{post}$ and $MB_e\big|_{res}$, respectively. Then, we have:

$$\begin{aligned} MB_e\big|_{post} &= \Delta_\pi - 2\Delta_\pi(\tilde{x}) \\ &= \Delta_\pi - 2\Delta_\pi\left(\frac{1-\alpha}{\gamma}\right)(P\pi_{pos} + (1-P)\pi_{neg}) \\ MB_e\big|_{res} &= \Delta_\pi - \Delta_\pi(x^{neg} + x^{pos}) = \Delta_\pi - 2\Delta_\pi\left(\frac{x^{neg} + x^{pos}}{2}\right) \\ &= \Delta_\pi - 2\Delta_\pi\left(\frac{1-\alpha}{\gamma}\right)\left(\frac{1}{2}\pi_{pos} + \frac{1}{2}\pi_{neg}\right) \end{aligned}$$

Therefore, when $e_m = P = 1/2$, the marginal benefit of effort for the member is identical in both cases. Moreover, $e_m^{res} > e_m^{post}$ when $e_m > 1/2$, whereas $e_m^{res} < e_m^{post}$ when $e_m < 1/2$.

From (7), we find that $e_m^{post} > 1/2$ holds when:

$$\gamma > \tilde{\gamma} \equiv \frac{2(1-\alpha)\Delta_\pi(\pi_{pos} + \pi_{neg})}{2\Delta_\pi - \mu}$$

Therefore, we have: (a) when $\mu \in [\Delta_\pi, 2\Delta_\pi]$, $e_m^{res} < e_m^{post}$ holds if $\gamma < \tilde{\gamma}$, and (b) when $\mu \geq 2\Delta_\pi$, $e_m^{res} \geq e_m^{post}$ holds. Figure A3 depicts equilibrium member effort levels across the three cases as a function of α. Panel (a) illustrates the case where $\mu \in [\Delta_\pi, 2\Delta_\pi]$, while panel (b) shows the case where $\mu \geq 2\Delta_\pi$. In panel (a), we can observe that $e_m^{post} = e_m^{res}$ precisely at $e_m = 1/2$.

In conclusion, we find that $\max\{e_m^{post}, e_m^{res}\} \leq e_m^{pre}$, where the ranking between e_m^{post} and e_m^{res} is also determined by γ and α. Crucially, e_m^{pre} is consistently the largest effort level regardless of parameter values. This indicates that pre-project commitment to reward allocation necessarily

elicits the highest member effort and achieves the best team performance among all the timing scenarios we analyzed.

B Experiment Appendix

This appendix presents supplementary materials related to our experimental design and results. We include detailed variable descriptions, summary statistics, balance checks, and additional analyses that support but were not included in the main text due to space constraints.

Table B1: Description of Variables and Survey Questions

Scale	Var Name	Survey Question	Response
(i) Demographic Variables			
Gender	*female*	Please indicate your gender.	(1) Male; (2) Female
Age	*age*	Please indicate your age.	Numerical values
• **Occupation dummy**		Please indicate your occupation.	14 options
Regular Staff	*regStaff*	Regular employee (non-managerial)	—
Managerial Staff	*mgmtStaff*	Regular employee (managerial)	—
Executive	*executive*	Company executive (president, officer)	—
Public Servant	*pubServ*	Public servant, teacher, non-profit organization employee	—
Temporary/Contract	*tempEmp*	Temporary/contract worker	—
Self-Employed	*selfEmp*	Self-employed (freelancer, service provider)	—
SOHO	*soho*	SOHO	—
Agriculture/Fishery	*agrFish*	Agriculture, fishery	—
Professional	*profJob*	Professional (lawyer, accountant, medical)	—
Part-time	*partTime*	Part-time, casual worker	—
Housewife/Househusband	[Excluded]	Housewife, househusband	—
Student	[Excluded]	Student	—
Unemployed	[Excluded]	Unemployed	—
Other Occupation	*otherOcc*	Other occupation	—
(ii) Personality Traits			
• **Personality measures**		Please indicate how well each of the following statements describes you.	1 (Strongly disagree) - 7 (Strongly agree)
Altruism	*altruism*	I do good deeds without expecting anything in return.	—
Optimism	*optimism*	I am optimistic about the future.	—
Risk-Taking	*riskTaking*	I am not afraid to take risks.	—
Trust in Others	*trust*	I generally assume that people have good intentions.	—
Job Satisfaction	*jobSat*	I feel a high level of satisfaction with my current job.	—
Career Ambition	*careerAmb*	I value promotion and success in my work.	—
Big5 Conscientiousness 1	*big5C1*†	I tend to be disorganized and careless.	—
Competitiveness	*compet*	Competition brings the best out of me.	—
Sincerity	*sincerity*	I would not try to gain promotions through flattery, even if it might be effective.	—
Fairness	*fairness*†	If I know I'll never get caught, I'd steal 100 million yen.	—
Modesty	*modesty*†	I have a right to be respected more than the average person.	—
Greed Avoidance	*grAvoid*†	I get a lot of enjoyment from owning expensive, luxurious things.	—
Big5 Conscientiousness 2	*big5C2*	I am thorough and strict with myself.	—
• **Behavioral measures**			
Willingness to Bet	*WTB*	Suppose there is a "Speed Lottery" that has a 50% chance of winning 10,000 yen and a 50% chance of winning nothing. How much would you be willing to pay to purchase this lottery ticket? Please indicate the maximum price you would consider paying.	Response in yen (0 to 10,000)
Willingness to Donate	*WTD*	Suppose a major earthquake has occurred in Japan. While your area suffered no damage, there are other regions that experienced severe damage. If you had 100,000 yen in unexpected money at this time, how much would you be willing to donate for disaster recovery?	Response in yen (0 to 100,000)
(iii) Outcome Variable			

Continued on next page

Table B1 – continued from previous page

Scale	Var Name	Survey Question	Response
Self Allocation	*selfAlloc*	As the leader of this team, what do you think you would decide for your own reward, as well as the rewards for the members, and how would you announce this in front of the members at this meeting? Please specify the percentage of the total rewards that you would take for yourself, between 0 to 100.	You will receive ( )% of the total rewards
(iv) Attention and Manipulation Checks			
[Screening question]‡		In the scenario you just read, at what timing did you as a leader decide and announce the reward allocation to members?	(1) Before the project started, (2) After the project ended but before knowing the results, (3) After the project ended and results were known, (4) Don't remember
(v) Decision Motivators			
• **Allocation motivations**		Please indicate your reasons for choosing that reward allocation.	1 (Strongly disagree) - 7 (Strongly agree)
Social Image	*socImage*	Because I want team members to view me favorably.	—
Motivate Member	*motMem*§	Because I want to motivate team members to put in greater effort.	—
Self Benefit	*selfBen*	Because I wanted to secure a larger share for myself.	—
Member Benefit	*memBen*	Because I wanted to give more to the members.	—
• **Leader effort importance**		Please share your thoughts about this project's outcome.	
(For *preProj* & *postProj*)	*ldrImp*	For this project to succeed, which do you think is more important—your efforts as a leader or the members' efforts?	1 (Leader's efforts important) - 5 (Members' effort important)
(For *posOut*)	*ldrImp*	As factors in the project's success, which was more important—your efforts as a leader or the members' efforts?	1 (Leader's efforts important) - 5 (Members' effort important)
(For *negOut*)	*ldrImp*	As factors in the project's failure, which was more important—your lack of effort as a leader or the members' lack of efforts?	1 (Leader's lack of effort important) - 5 (Members' lack of effort important)

Note: †Reverse-coded items. ‡The order of response options (1)-(3) was randomized across participants. §Item included only in the preProj condition.

Table B2: Summary Statistics

Variable	N	Mean	SD	Min	Max
A. Demographic Variables					
female	520	0.50	0.50	0.00	1.00
age	520	39.36	10.82	20.00	59.00
regStaff	520	0.44	0.50	0.00	1.00
mgmtStaff	520	0.07	0.26	0.00	1.00
executive	520	0.02	0.13	0.00	1.00
pubServ	520	0.09	0.28	0.00	1.00
profJob	520	0.06	0.23	0.00	1.00
partTime	520	0.19	0.40	0.00	1.00
tempEmp	520	0.04	0.20	0.00	1.00
selfEmp	520	0.05	0.21	0.00	1.00
soho	520	0.01	0.11	0.00	1.00
agrFish	520	0.01	0.08	0.00	1.00
otherOcc	520	0.03	0.16	0.00	1.00
B. Personality Traits					
altruism	520	3.82	1.36	1.00	7.00
optimism	520	3.50	1.43	1.00	7.00
riskTaking	520	3.15	1.35	1.00	7.00
trust	520	3.63	1.30	1.00	7.00
jobSat	520	3.58	1.40	1.00	7.00
careerAmb	520	3.28	1.45	1.00	7.00
big5C	520	3.80	1.14	1.00	7.00
compet	520	3.20	1.34	1.00	7.00
sincerity	520	3.99	1.42	1.00	7.00
fairness	520	4.90	1.70	1.00	7.00
modesty	520	4.76	1.36	1.00	7.00
grAvoid	520	4.87	1.43	1.00	7.00
C. Treatment Dummies					
preProj	260	0.50	0.50	0.00	1.00
negOut	260	0.50	0.50	0.00	1.00
D. Outcome Variable					
selfAlloc	520	40.34	18.85	0.00	100.00
E. Decision Motivators					
motMem	130	4.36	1.45	1.00	7.00
socImage	520	3.29	1.36	1.00	7.00
selfBen	520	3.56	1.46	1.00	7.00
memBen	520	3.64	1.34	1.00	7.00
ldrImp	520	2.97	0.79	1.00	5.00

Note: (i) Categories A and B represent measures that were common to all participants and were assessed prior to the intervention. (ii) Personality traits are measured on a 7-point Likert scale. (iii) Treatment dummies: *preProj* represents the pre-project (vs. post-project) decision condition, and *negOut* represents the negative (vs. positive) outcome condition.

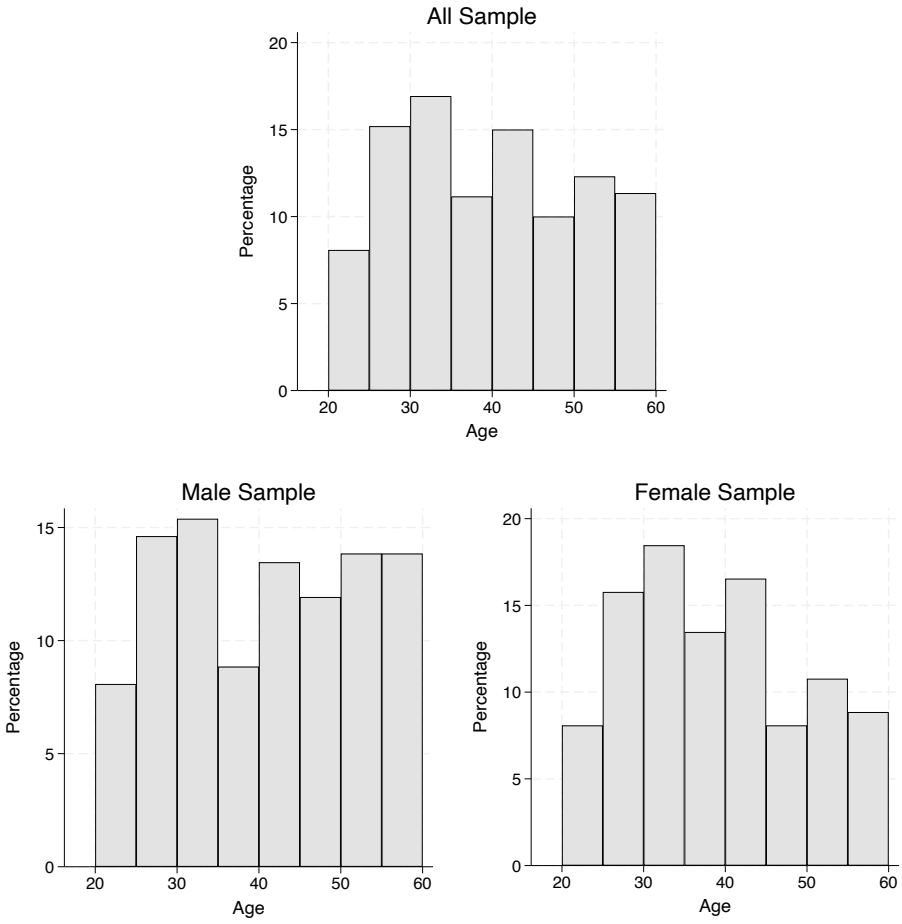


Figure B1: Age Distribution of Survey Respondents: Full Sample and Gender Subsamples

Note: This figure shows the age distribution of survey respondents for the full sample and by gender. The width of each bar represents a 5-year interval. The sample includes 520 respondents (260 males and 260 females) aged 20-60, with a mean age of 39.36 years (SD = 10.82). The distribution differs between male and female subsamples: while male respondents are relatively evenly distributed across ages, female respondents are underrepresented in older age groups, likely due to lower workforce participation among women in those generations.

Table B3: Balance Check

	(1) preProj		(2) postProj		(3) negOut		(4) posOut		p-value	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	(1) vs (2)	(3) vs (4)
A. Demographic variables										
female	0.50	0.04	0.50	0.04	0.50	0.04	0.50	0.04	1.00	1.00
age	40.06	0.93	39.09	0.98	38.98	0.95	39.29	0.95	.47	.82
regStaff	0.45	0.04	0.47	0.04	0.36	0.04	0.47	0.04	.80	.08
mgmtStaff	0.08	0.02	0.11	0.03	0.05	0.02	0.05	0.02	.53	.78
executive	0.03	0.02	0.00	0.00	0.02	0.01	0.02	0.01	.04	.65
pubServ	0.08	0.02	0.08	0.02	0.12	0.03	0.07	0.02	.82	.20
tempEmp	0.03	0.02	0.03	0.02	0.08	0.02	0.03	0.02	1.00	.10
selfEmp	0.06	0.02	0.05	0.02	0.06	0.02	0.02	0.01	.58	.12
soho	0.00	0.00	0.02	0.01	0.02	0.01	0.02	0.01	.16	1.00
agrFish	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	.32	.16
profJob	0.03	0.02	0.02	0.01	0.12	0.03	0.06	0.02	.41	.09
partTime	0.19	0.03	0.20	0.04	0.16	0.03	0.22	0.04	.88	.21
otherOcc	0.03	0.02	0.03	0.02	0.02	0.01	0.02	0.01	1.00	.65
B. Personality traits										
altruism	3.88	0.10	3.68	0.12	3.92	0.14	3.80	0.12	.32	.46
optimism	3.62	0.12	3.42	0.12	3.48	0.13	3.48	0.13	.23	.86
riskTaking	3.27	0.12	3.12	0.11	3.12	0.13	3.08	0.12	.36	.97
trust	3.62	0.10	3.64	0.11	3.56	0.12	3.68	0.12	.87	.72
jobSat	3.68	0.11	3.42	0.11	3.62	0.14	3.58	0.12	.08	.95
careerAmb	3.42	0.12	3.28	0.12	3.18	0.14	3.25	0.13	.39	.63
big5C	3.97	0.09	3.84	0.09	3.73	0.12	3.66	0.10	.44	.38
compet	3.38	0.11	3.08	0.11	3.08	0.13	3.25	0.11	.06	.28
sincerity	4.15	0.12	3.94	0.12	3.93	0.14	3.94	0.12	.20	.97
fairness	4.76	0.16	4.84	0.14	5.14	0.15	4.86	0.15	.79	.23
modesty	4.68	0.12	4.76	0.11	4.87	0.13	4.72	0.12	.60	.34
grAvoid	4.81	0.12	4.83	0.12	4.89	0.14	4.95	0.13	.67	.81

Note: Reported p-values are uncorrected for multiple comparisons. After applying Bonferroni correction, no significant differences remain between conditions. The *executive* category, which shows a significant difference, is later merged into *otherOcc* due to its small sample size. p-values compare (1) pre-project vs. post-project and (2) negative vs. positive outcome conditions.

Table B4: Polychoric Correlation Matrix for All Sample

	a	b	c	d	e	f	g	h	i	j	k	l
a. *altruism*	1.00											
b. *optimism*	0.35	1.00										
c. *riskTaking*	0.32	0.54	1.00									
d. *trust*	0.40	0.56	0.40	1.00								
e. *jobSat*	0.48	0.53	0.43	0.48	1.00							
f. *careerAmb*	0.28	0.37	0.46	0.37	0.58	1.00						
g. *big5C*	0.17	0.13	0.15	0.11	0.26	0.21	1.00					
h. *compet*	0.29	0.32	0.44	0.36	0.45	0.57	0.17	1.00				
i. *sincerity*	0.33	0.20	0.25	0.30	0.26	0.13	0.03	0.22	1.00			
j. *fairness*	0.13	-0.17	-0.21	-0.04	0.02	-0.13	0.18	-0.18	-0.03	1.00		
k. *modesty*	-0.28	-0.35	-0.39	-0.28	-0.38	-0.48	-0.30	-0.51	-0.15	0.30	1.00	
l. *grAvoid*	-0.15	-0.33	-0.40	-0.30	-0.23	-0.50	-0.14	-0.44	-0.01	0.31	0.58	1.00

Note: The highest observed correlation is 0.58, which appears between job satisfaction (*jobSat*) and career ambition (*careerAmb*), as well as between modesty (*modesty*) and greed avoidance (*grAvoid*).

Table B5: Polychoric Correlation Matrix for Male Sample

	a	b	c	d	e	f	g	h	i	j	k	l
a. *altruism*	1.00											
b. *optimism*	0.25	1.00										
c. *riskTaking*	0.33	0.49	1.00									
d. *trust*	0.37	0.56	0.40	1.00								
e. *jobSat*	0.36	0.48	0.45	0.43	1.00							
f. *careerAmb*	0.31	0.34	0.50	0.33	0.63	1.00						
g. *big5C*	0.12	0.05	0.22	0.05	0.30	0.26	1.00					
h. *compet*	0.24	0.35	0.45	0.38	0.48	0.66	0.25	1.00				
i. *sincerity*	0.36	0.14	0.20	0.29	0.23	0.12	0.01	0.18	1.00			
j. *fairness*	0.18	-0.24	-0.16	-0.12	-0.00	-0.12	0.20	-0.20	0.09	1.00		
k. *modesty*	-0.30	-0.35	-0.40	-0.32	-0.36	-0.57	-0.26	-0.53	-0.14	0.26	1.00	
l. *grAvoid*	-0.19	-0.34	-0.40	-0.30	-0.31	-0.57	-0.22	-0.62	-0.02	0.31	0.63	1.00

Note: The highest observed correlation is 0.66 between competitiveness (*compet*) and career ambition (*careerAmb*).

Table B6: Polychoric Correlation Matrix for Female Sample

	a	b	c	d	e	f	g	h	i	j	k	l
a. *altruism*	1.00											
b. *optimism*	0.42	1.00										
c. *riskTaking*	0.32	0.58	1.00									
d. *trust*	0.44	0.57	0.41	1.00								
e. *jobSat*	0.58	0.59	0.42	0.54	1.00							
f. *careerAmb*	0.26	0.40	0.43	0.41	0.55	1.00						
g. *big5C*	0.21	0.20	0.11	0.15	0.22	0.18	1.00					
h. *compet*	0.35	0.30	0.45	0.35	0.42	0.50	0.12	1.00				
i. *sincerity*	0.30	0.26	0.30	0.32	0.29	0.15	0.05	0.26	1.00			
j. *fairness*	0.08	-0.10	-0.25	0.03	0.04	-0.12	0.15	-0.15	-0.15	1.00		
k. *modesty*	-0.28	-0.35	-0.38	-0.25	-0.40	-0.41	-0.34	-0.49	-0.17	0.32	1.00	
l. *grAvoid*	-0.12	-0.32	-0.40	-0.29	-0.16	-0.43	-0.08	-0.29	0.00	0.31	0.53	1.00

Note: The highest observed correlation is 0.59 between job satisfaction (*jobSat*) and optimism (*optimism*).

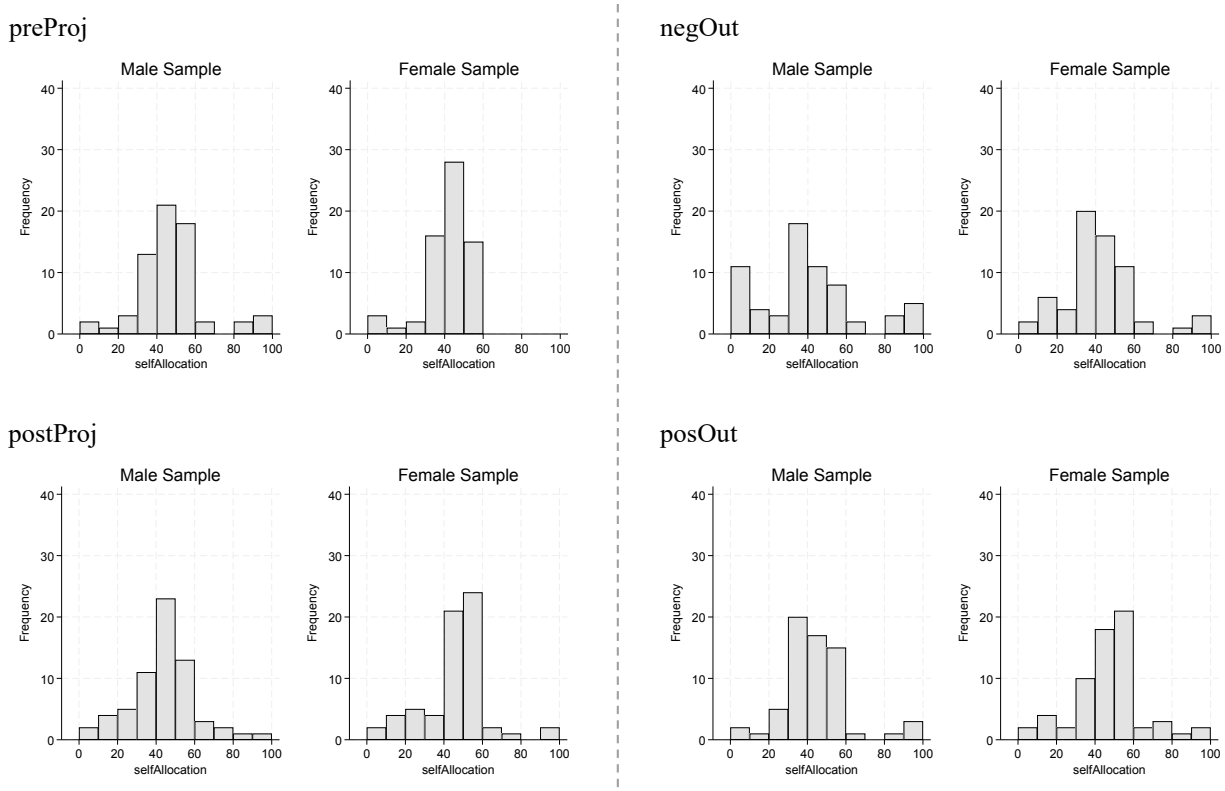


Figure B2: Distribution of Self-Allocation across Experimental Conditions

Note: This figure shows the distribution of *selfAlloc*. The horizontal axis represents the percentage of total rewards allocated to oneself (ranging from 0 to 100), while the vertical axis indicates the frequency of respondents selecting each allocation level. Notably, in the pre-project condition, no female leader allocated more than 60% of the rewards to herself. In contrast, in the negative-outcome condition, a substantial number of male leaders opted for extremely low self-allocations, suggesting a stronger response to accountability pressures in this group.

Table B7: Moderation and Simple Slope of Personality Traits on H1 (Generosity)

Trait	Sample	preProj	trait	female	preProj × trait	trait -1 SD	trait +1 SD
altruism	All	-0.10 (1.97)	2.72* (1.13)	-1.02 (1.98)	-5.45** (1.68)	7.34* (3.25)	-7.53** (2.78)
	Male	3.64 (2.94)	2.60 (1.62)		-4.72+ (2.74)	9.76+ (5.45)	-2.47 (3.57)
	Female	-3.29 (2.45)	2.96* (1.47)		-5.99** (1.94)	5.29 (3.56)	-11.87** (3.84)
optimism	All	0.29 (1.99)	0.50 (0.92)	-1.42 (2.04)	-2.26+ (1.33)	3.50 (2.79)	-2.92 (2.69)
	Male	4.02 (3.03)	0.22 (1.38)		-0.37 (1.86)	4.53 (4.21)	3.51 (3.75)
	Female	-3.02 (2.50)	0.75 (1.17)		-3.83* (1.67)	2.58 (3.42)	-8.62* (3.57)
riskTaking	All	0.24 (2.00)	-0.02 (1.20)	-1.40 (2.09)	-0.83 (1.64)	1.36 (2.91)	-0.88 (3.06)
	Male	4.09 (3.08)	0.68 (1.56)		-0.11 (2.29)	4.23 (4.55)	3.95 (3.95)
	Female	-2.78 (2.51)	-0.31 (1.79)		-1.56 (2.30)	-0.58 (3.61)	-4.97 (4.52)
trust	All	0.12 (2.01)	0.40 (1.26)	-1.09 (2.03)	-2.30 (1.66)	3.11 (2.97)	-2.86 (2.76)
	Male	3.97 (3.08)	-0.05 (2.01)		-0.42 (2.60)	4.50 (5.03)	3.43 (3.85)
	Female	-3.07 (2.55)	0.65 (1.44)		-3.02 (1.93)	0.98 (3.41)	-7.13+ (3.82)
jobSat	All	0.16 (2.02)	0.56 (1.13)	-1.53 (2.06)	-1.74 (1.58)	2.59 (2.94)	-2.27 (3.04)
	Male	4.00 (3.09)	-1.02 (1.87)		1.97 (2.57)	1.28 (5.01)	6.72 (4.33)
	Female	-3.58 (2.52)	1.67 (1.29)		-4.65** (1.79)	3.00 (3.11)	-10.16* (4.03)
careerAmb	All	0.24 (2.02)	-0.40 (1.09)	-1.57 (2.04)	-0.32 (1.48)	0.70 (2.98)	-0.23 (2.91)
	Male	3.95 (3.07)	-0.99 (1.61)		1.10 (2.30)	2.35 (4.97)	5.55 (4.10)
	Female	-3.16 (2.56)	0.46 (1.23)		-1.94 (1.77)	-0.35 (3.28)	-5.98 (3.96)
big5C	All	0.19 (2.04)	0.43 (1.08)	-1.46 (2.05)	-0.61 (1.50)	0.89 (3.20)	-0.50 (2.74)
	Male	4.26 (3.09)	0.39 (1.43)		-1.76 (2.38)	6.18+ (3.36)	2.33 (4.47)
	Female	-3.43 (2.60)	-0.10 (1.63)		1.05 (2.05)	-4.66+ (3.45)	-2.19 (3.57)
compet	All	0.18 (2.03)	0.67 (1.16)	-1.39 (2.03)	-1.29 (1.53)	1.91 (2.95)	-1.55 (2.86)
	Male	3.62 (3.08)	0.24 (1.72)		1.46 (2.48)	1.74 (4.27)	5.51 (4.42)
	Female	-3.27 (2.55)	1.66 (1.59)		-3.82+ (1.98)	2.03 (3.67)	-8.57+ (3.75)
sincerity	All	0.25 (2.02)	1.34 (1.04)	1.83 (2.05)	-2.37+ (1.39)	3.60 (2.97)	-3.11 (2.87)
	Male	4.44 (3.11)	-0.36 (1.56)		-1.32 (2.11)	6.26+ (4.81)	2.63 (3.54)
	Female	-2.65 (2.57)	2.17+ (1.29)		-2.96 (1.74)	1.64 (4.01)	-6.95* (3.24)
fairness	All	0.11 (2.02)	-0.99 (0.75)	-1.02 (2.04)	0.23 (1.03)	-0.28 (2.76)	0.49 (2.94)
	Male	3.46 (3.06)	-0.18 (1.20)		-1.79 (1.46)	6.51+ (3.89)	0.42 (3.91)
	Female	-3.31 (2.56)	-1.39 (0.85)		1.74 (1.41)	-6.27+ (3.69)	-0.35 (3.62)
modesty	All	0.12 (2.02)	-0.58 (1.17)	-1.29 (2.04)	0.30 (1.61)	-0.30 (2.89)	0.53 (2.97)
	Male	3.84 (3.08)	-0.68 (1.95)		-0.26 (2.38)	4.17 (4.00)	3.51 (4.63)
	Female	-3.27 (2.57)	-0.46 (1.44)		1.03 (2.09)	-4.73 (3.70)	-1.81 (3.75)
grAvoid	All	0.11 (2.02)	1.11 (0.96)	-1.46 (2.03)	-1.03 (1.35)	1.59 (2.84)	-1.37 (2.96)
	Male	3.77 (3.06)	1.47 (1.55)		-2.83 (2.05)	7.71+ (4.00)	-0.16 (4.33)
	Female	-3.39 (2.56)	0.61 (1.11)		0.86 (1.74)	-4.64 (3.68)	-2.13 (3.73)

Note: This table presents moderated regression analyses examining how personality traits affect the relationship between *preProj* (vs. *postProj*) and self-allocation behavior. For each personality trait, we report the main effects and interaction with the experimental condition, controlling for age and gender. For each trait, "trait -1 SD" and "trait +1 SD" show simple slope analyses evaluating the effect of experimental condition at one standard deviation below and above the mean of the moderating trait. Robust standard errors in parentheses. The sample consists of 260 participants (130 males and 130 females). $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

Table B8: Moderation and Simple Slope of Personality Traits on H2 (Responsibility)

Trait	Sample	negOut	trait	female	negOut × trait	trait -1 SD	trait +1 SD
altruism	All	-4.79^{+} (2.59)	-1.81 (1.43)	1.50 (2.63)	3.90* (1.97)	-10.11* (4.05)	0.53 (3.38)
	Male	-4.63 (4.01)	-3.07 (2.05)		4.01 (3.18)	-9.83 (6.59)	0.56 (4.74)
	Female	-4.96 (3.35)	-0.97 (1.99)		4.18^{+} (2.41)	-10.95* (4.89)	1.02 (4.73)
optimism	All	-4.51^{+} (2.57)	-1.62 (1.12)	0.82 (2.64)	4.96** (1.88)	-11.58** (3.64)	2.56 (3.77)
	Male	-4.30 (3.98)	-3.18^{+} (1.66)		6.17* (3.09)	-12.89* (5.88)	4.29 (5.82)
	Female	-5.18 (3.34)	-0.18 (1.51)		3.86^{+} (2.17)	-10.83* (4.14)	0.45 (5.03)
riskTaking	All	-4.34^{+} (2.57)	-2.54* (1.24)	1.38 (2.62)	5.97** (1.93)	-12.42** (3.33)	3.73 (3.97)
	Male	-3.96 (3.90)	-3.73^{+} (2.11)		7.76** (3.11)	-13.97** (5.27)	6.04 (5.89)
	Female	-4.67 (3.38)	-1.64 (1.56)		4.68^{+} (2.46)	-11.26* (4.10)	1.90 (5.47)
trust	All	-4.50^{+} (2.55)	-2.58* (1.22)	1.01 (2.59)	6.74** (1.85)	-13.27** (3.68)	4.27 (3.33)
	Male	-4.38 (3.93)	-3.12* (1.54)		8.22** (2.86)	-14.70** (5.46)	5.94 (5.16)
	Female	-4.60 (3.32)	-2.19 (1.87)		5.76* (2.46)	-12.35** (4.84)	3.15 (4.52)
jobSat	All	-4.83^{+} (2.54)	-1.77 (1.19)	1.43 (2.58)	5.88** (1.63)	-13.06** (3.59)	3.39 (3.22)
	Male	-4.17 (3.83)	-3.73* (1.58)		8.01** (2.36)	-15.26** (5.06)	6.92 (5.01)
	Female	-5.23 (3.34)	-0.26 (1.77)		4.43* (2.23)	-11.51* (4.95)	1.04 (4.20)
careerAmb	All	-4.14^{+} (2.55)	-1.64 (1.02)	1.76 (2.58)	5.62** (1.53)	-12.31** (3.14)	4.02 (3.61)
	Male	-3.50 (3.86)	-1.81 (1.43)		6.97** (2.28)	-13.62** (4.62)	6.62 (5.50)
	Female	-4.65 (3.37)	-1.35 (1.44)		4.13* (2.05)	-10.65** (4.15)	1.35 (4.82)
big5C	All	-4.28^{+} (2.57)	0.17 (1.22)	1.21 (2.60)	4.86** (1.75)	-9.83** (2.94)	1.26 (3.54)
	Male	-4.16 (3.80)	-1.59 (2.30)		9.22** (2.95)	-14.24** (4.28)	5.93 (5.60)
	Female	-4.66 (3.40)	1.29 (1.19)		1.01 (1.97)	-5.85 (3.94)	-3.47 (4.30)
compet	All	-4.20^{+} (2.50)	-3.61** (1.30)	0.93 (2.53)	8.58** (1.79)	-15.68** (3.54)	7.29* (3.39)
	Male	-2.72 (3.69)	-4.63* (2.03)		12.64** (2.88)	-19.03** (5.03)	13.58* (5.43)
	Female	-4.88 (3.35)	-2.74 (1.67)		5.41* (2.14)	-12.39** (4.72)	2.62 (4.22)
sincerity	All	-4.52^{+} (2.58)	-1.89 (1.30)	1.13 (2.69)	1.62 (1.86)	-6.82^{+} (3.95)	-2.22 (3.42)
	Male	-5.01 (4.08)	-1.89 (2.18)		-0.52 (3.07)	-4.29 (6.71)	-5.73 (4.93)
	Female	-4.16 (3.34)	-1.65 (1.66)		3.49^{+} (2.20)	-9.23* (4.67)	0.91 (4.59)
fairness	All	-4.14 (2.67)	0.41 (0.93)	0.76 (2.64)	-2.48 (1.63)	0.09 (4.42)	-8.36** (3.17)
	Male	-1.04 (4.31)	0.75 (1.21)		-6.04* (2.59)	9.23 (7.32)	-11.32* (4.71)
	Female	-4.76 (3.38)	-0.00 (1.51)		0.06 (2.15)	-4.86 (5.69)	-4.66 (4.13)
modesty	All	-4.22 (2.56)	2.30* (1.22)	1.20 (2.59)	-6.55** (1.78)	4.69 (3.69)	-13.14** (3.35)
	Male	-3.00 (3.80)	3.90* (1.86)		-11.05** (2.88)	11.26* (5.52)	-17.28** (5.10)
	Female	-4.80 (3.39)	1.04 (1.62)		-2.94 (2.12)	-0.61 (4.94)	-8.99* (4.10)
grAvoid	All	-4.43^{+} (2.59)	1.51 (1.24)	1.05 (2.59)	-4.56* (1.82)	2.09 (4.07)	-10.94** (3.21)
	Male	-3.44 (3.90)	2.20 (2.00)		-7.38* (2.83)	6.82 (6.09)	-13.71** (4.94)
	Female	-4.82^{+} (3.36)	0.86 (1.55)		-2.08 (2.27)	-1.76 (5.40)	-7.88* (3.94)

Note: This table presents moderated regression analyses examining how personality traits affect the relationship between *negOut* (vs. *posOut*) and self-allocation behavior. For each personality trait, we report the main effects and interaction with the experimental condition, controlling for age and gender. For each trait, "trait -1 SD" and "trait +1 SD" show simple slope analyses evaluating the effect of experimental condition at one standard deviation below and above the mean of the moderating trait. Robust standard errors in parentheses. The sample consists of 260 participants (130 males and 130 females). $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

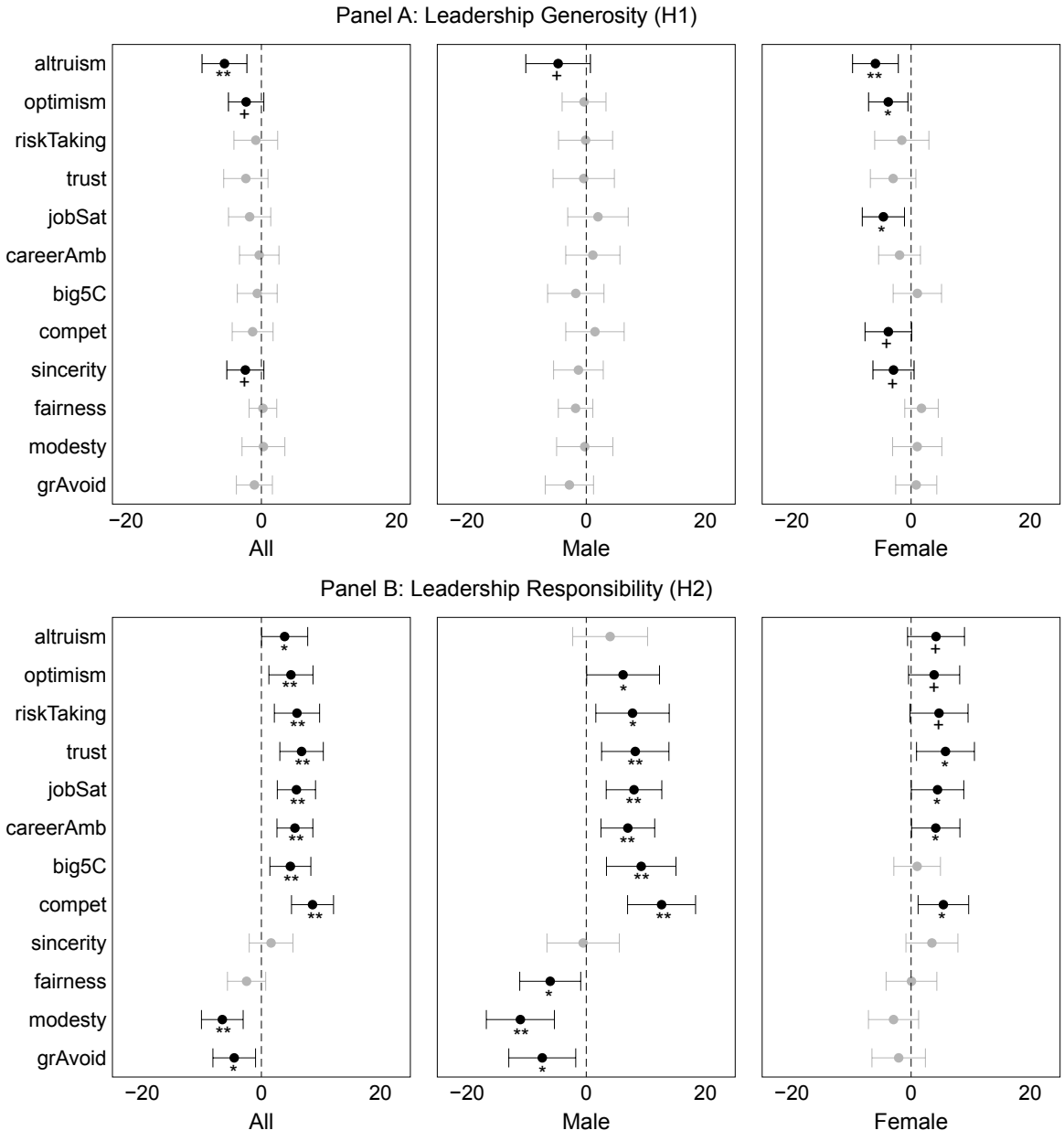


Figure B3: Interaction Effects of Personality Traits on Leadership Styles

Note: These figures show the estimated interaction coefficients between personality traits and treatment indicators, along with their 95% confidence intervals. The left panel shows results for the full sample, while the middle and right panels show results for male and female subsamples. The top figure (panel A) presents interactions with the pre-project condition (H1: Leadership Generosity), and the bottom figure (panel B) presents interactions with the negative outcome condition (H2: Leadership Responsibility). Positive (negative) coefficients indicate that leaders with higher levels of the trait show stronger (weaker) generosity or responsibility effects. For example, in Panel A, the significant negative coefficient for altruism in the full sample (-5.45) indicates that leaders with altruism one point above the mean reduce their self-allocation by 5.45 percentage points more in the pre-project condition compared to the post-project condition. Similarly, in Panel B, the significant positive coefficient for competitiveness (8.58) suggests that leaders with competitiveness one point above the mean increase their self-allocation by 8.58 percentage points more in the negative outcome condition than in the positive outcome condition. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

Table B9: Moderation of Age on H1 and H2

	H1: Generosity			H2: Responsibility		
Sample	*preProj*	*age*	*preProj* × *age*	*negOut*	*age*	*negOut* × *age*
All	-0.26	0.03	0.04	-6.76**	-0.07	0.14
	(1.55)	(0.99)	(0.14)	(1.79)	(0.12)	(0.17)
Male	1.87	-0.11	0.09	-7.17*	-0.06	-0.01
	(2.35)	(0.14)	(0.21)	(2.98)	(0.19)	(0.26)
Female	-2.23	0.16	-0.09	-6.98**	-0.09	0.22
	(1.86)	(0.13)	(0.18)	(2.26)	(0.16)	(0.22)

Note: This table presents results from robust regression examining how the effects of generosity (H1) and responsibility (H2) on self-allocation are moderated by age. Age has been mean-centered prior to analysis. We find no significant moderating effects of *age* on either H1 or H2. Robust standard errors are reported in parentheses. Female dummy is included in the "All" sample regression but not reported. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

Table B10: Moderation of "Employment Ice Age" on H1 and H2

	H1: Generosity			H2: Responsibility		
Sample	*preProj*	*iceAge*	*preProj* × *iceAge*	*negOut*	*iceAge*	*negOut* × *iceAge*
All	-0.53	-0.68	0.94	-7.09**	-1.66	1.27
	(1.96)	(2.31)	(3.24)	(2.18)	(2.78)	(3.92)
Male	0.88	-4.13	2.76	-7.04+	-4.45	-0.59
	(2.88)	(3.41)	(4.79)	(3.77)	(4.50)	(6.40)
Female	-2.26	1.62	-0.60	-7.16**	0.84	1.83
	(2.35)	(2.76)	(3.88)	(2.61)	(3.59)	(5.04)

Note: This table presents results from robust regression examining how the effects of generosity (H1) and responsibility (H2) on self-allocation are moderated by ice-age generation. The variable *iceAge* is a dummy variable that equals one if the respondent was born during Japan's Employment Ice Age generation (1970-1983) and zero otherwise. Robust standard errors are reported in parentheses. Female dummy is included in the "All" sample regression but not reported. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

Table B11: Regression Results for Self-Allocation Motivations by Experimental Group

	preProj			postProj			negOut			posOut		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
motMem	-0.44	-1.63	0.55	–	–	–	–	–	–	–	–	–
	(0.99)	(1.72)	(0.89)									
socImage	-3.71**	-4.87*	-3.04*	1.75+	0.65	2.38+	1.74	0.36	0.10	-1.75	-0.90	-1.95
	(1.31)	(2.11)	(1.14)	(0.98)	(1.60)	(1.26)	(1.48)	(1.48)	(2.33)	(1.24)	(2.11)	(1.43)
selfBen	4.14**	6.40**	3.03*	3.49**	3.63**	2.90*	4.98**	5.87**	1.91	3.05*	2.62	3.38**
	(1.18)	(1.90)	(1.31)	(0.90)	(1.33)	(1.28)	(1.43)	(1.69)	(1.91)	(1.00)	(1.67)	(1.23)
memBen	-1.35	2.05	-4.01**	0.01	-0.24	0.51	-3.08*	-7.82**	4.58*	-3.35**	-4.08*	-2.93+
	(1.14)	(1.76)	(1.31)	(1.27)	(2.10)	(1.56)	(1.35)	(1.68)	(2.23)	(1.25)	(1.95)	(1.57)
age	0.05	-0.19	0.13	0.00	-0.18	0.21	-0.33*	-0.36+	-0.17	-0.19	-0.32	-0.05
	(0.10)	(0.18)	(0.09)	(0.14)	(0.19)	(0.19)	(0.16)	(0.20)	(0.20)	(0.15)	(0.22)	(0.23)
female	-4.68+			1.08			-3.43			1.06		
	(2.70)			(2.89)			(4.16)			(3.12)		
R^2	0.18	0.22	0.31	0.12	0.11	0.16	0.18	0.39	0.18	0.15	0.20	0.12
N	130	65	65	130	65	65	130	65	65	130	65	65

Note: Results show that encouraging team members' effort (*motMem*) had a minimal effect in the pre-project condition (All: -0.44, n.s.), suggesting that it does not meaningfully influence self-allocation decisions. Across conditions, male and female leaders responded differently to project outcomes. In the *negOut* condition, male leaders significantly reduced self-allocation when focusing on member benefits (*memBen*: -7.82**), while female leaders showed the opposite effect (*memBen*: 4.58*). Additionally, after successful outcomes (*posOut*), self-benefit (*selfBen*) remained a significant predictor for female leaders (3.38**) but not for male leaders (2.62, n.s.). Robust standard errors in parentheses. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

C A Follow-Up Experiment on How Leadership Generosity Affects Team Effort

This follow-up experiment, conducted three months after the main experiment, examines how a leader's generosity—precommitting to a lower personal share of team rewards while allocating a higher share to team members—affects members' motivation to exert effort, using a survey experiment with a separate sample of 1,065 Japanese participants distinct from those in the main experiment.

Similar to the main experiment, participants were presented with a scenario in which they were part of a three-person team working on a project. The team was led by a capable leader, and participants were asked to imagine themselves as one of the two team members working under the leader's direction. Two different reward allocation rules were introduced:

- High Reward (*highRwd*) condition: The leader receives 40% of the team's total earnings, while each member receives 30%. This represents the more generous commitment condition.
- Low Reward (*lowRwd*) condition: The leader receives 70% of the team's total earnings, while each member receives 15%. This represents the less generous commitment condition.

Additionally, we varied the allocation authority, defining two conditions:

- By Leader (*byLeader*) condition: The reward allocation was determined by the team leader.
- By Management (*byMgmt*) condition: The reward allocation was determined by upper management.

This resulted in a 2×2 factorial design with four conditions. Participants were randomly assigned to one of these four conditions and asked to report their motivation to exert effort (*effort*) under the assigned scenario. This design allows us to examine whether a generous reward allocation commitment increases members' effort motivation and whether the source of the allocation decision moderates this effect.

C1 Hypotheses

In this follow-up experiment, we set forth the following two hypotheses:

Hypothesis 3. *Team members who are promised a higher share of the team rewards before the project begins will exhibit greater motivation to exert effort compared to those who are promised a lower share.*

Hypothesis 3 (H3) tests the (de)motivating effect of lower leader self-allocations (i.e., a higher reward for the member) in the pre-project stage, as predicted by our theoretical model (see Eq. (1)).

Hypothesis 4. *The difference in effort motivation between the High Reward and Low Reward conditions will be greater when the reward allocation is determined by the team leader than when it is determined by upper management.*

Hypothesis 4 (H4) is based on the idea that team members may respond more strongly to the generosity of a leader who is directly engaged in the team project, compared to generosity exhibited by upper management, which is perceived as a more distant authority. While our theoretical model does not explicitly incorporate decision-making authority, testing this effect provides new insights into the role of leadership, particularly in understanding how a leader's control over reward allocation influences team motivation.

Additionally, we explore the following research questions:

1. Moderation Effects of Personal Characteristics: We examine how individual characteristics, including gender, personality traits, and occupation, moderate the effect of leadership generosity and decision authority on effort motivation.

2. Mediation through Leadership Impressions: We analyze how leadership impressions mediate the effect of leadership generosity and decision authority on team members' effort motivation. These impressions include perceived competence, charisma, authoritarianism, and gender associations.

To examine moderation effects, we analyze which individual characteristics make team members more or less sensitive to generosity exhibited by the leader or upper management in terms of effort motivation. Personality traits include those measured in the main experiment—Altruism, Competitiveness, Risk-Taking, and Trust—as well as additional traits relevant to sensitivity toward authority figures, namely Negative and Positive Reciprocity and Power Distance Belief (PDB). In contrast to the main experiment, Optimism, Job Satisfaction, Career Ambition, and Big Five Conscientiousness were omitted in this study to reduce participant burden.

For the mediation analysis, we examine leadership impressions as mediators, which were measured after participants reported their effort motivation. Specifically, participants were asked to describe how they perceived the leader in the scenario. This analysis allows us to explore the psychological mechanisms through which generosity from the leader or upper management influences team members' effort motivation.

C2 Experimental Design

C2.1 Participants and Recruitment

Participants were recruited through a reputable Japanese online survey company, targeting employed individuals aged 20 to 60 years. The data collection took place from March 5 to March 7, 2024, yielding a total of 2,800 responses.

The final sample consisted of 1,065 employed individuals (50% female; valid response rate: 38%) with a mean age of 48.24 years (SD = 8.58). Participants were selected based on three criteria: non-working respondents (students, unemployed individuals, and housewives/househusbands) were excluded, only those who passed two attention checks assessing comprehension of key scenario elements were retained, and respondents who failed the instructed response check were removed. After excluding outliers, the average response time was 3.13 minutes. As an incentive, participants received a monetary reward of 8 to 10 Japanese yen (approximately 5 to 7 US cents) upon completing the survey. Figure C1 presents the age distribution histogram of the valid sample.

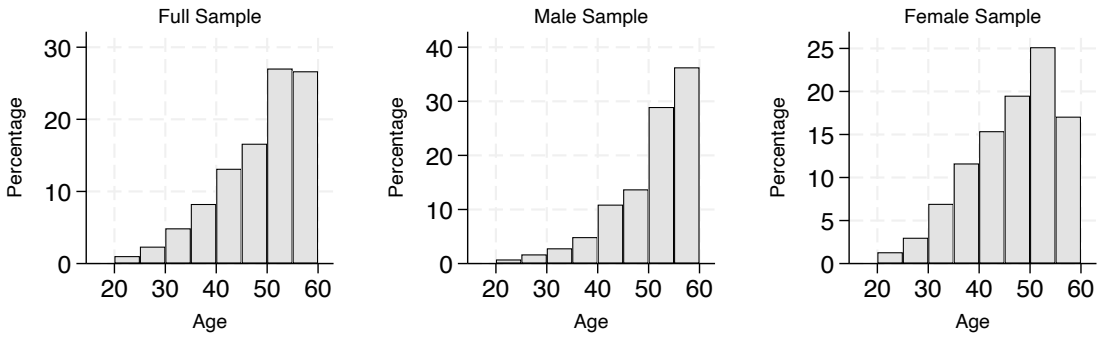


Figure C1: Distribution of Age

Note: The average age of participants was 48.24 years. This is slightly higher than the typical working-age population in Japan, where the average age of workers is around 42−44 years.

C3 Experimental Conditions

We employed a 4-arm (2×2) randomized controlled trial design. Participants were presented with a scenario in which they were members of a three-person team (one leader, the participant, and another team member) working on a project. They were informed that greater individual effort would contribute to higher total team earnings. Before starting the project, they were shown a description of the reward allocation rule for distributing team earnings.

The experiment manipulated two factors:

- **Reward Allocation:**
  1. High Reward (*highRwd*) condition: Leader 40%, each member 30%.
  2. Low Reward (*lowRwd*) condition: Leader 70%, each member 15%.
- **Allocation Authority:**
  1. By Leader (*byLeader*) condition: The reward allocation was determined by the team leader.
  2. By Management (*byMgmt*) condition: The reward allocation was determined by upper management.

Participants were randomly assigned to one of the four experimental conditions and subsequently asked to rate their motivation to exert effort under the given scenario.

C4 Procedure

The experiment followed these steps:

1. Pre-survey measures: Participants reported their gender, age, occupation, and personality traits (Altruism, Negative and Positive Reciprocity, Competitiveness, Risk-Taking preference, Trust in others, and Power Distance Belief (Hofstede, 1984, 2001; Oyserman, 2006) ; each measured on a 7-point Likert scale).
2. Condition-Specific Scenarios: participants were randomly assigned to one of four conditions, which differed in two aspects:

> You have been assigned as a member of a three-person team working on a project.
> The team is led by a capable leader who bears the primary responsibility for overall coordination, managing team members' motivation, [and determining reward allocation].
> This project is expected to generate revenue, and the more effort the team exerts, the higher the expected earnings.

The clause [and determining reward allocation] was included in the By Leader condition but omitted in the By Management condition.

> Before the project begins, **[Decision-maker] has decided to allocate the project's expected earnings as follows: [X]% to the leader and [Y]% to each member.**
> This promise will never be broken. Once the project is completed, the team will be disbanded, and you will not have any future opportunities to work with the same members.

where [Decision-maker] was either "the leader" for By Leader condition or "the upper management of your organization" for by Management condition, and $\{X, Y\} = \{40, 30\}$ for High Reward condition or $\{X, Y\} = \{70, 15\}$ for Low Reward condition.

3. Effort motivation assessment: Participants rated the extent to which they would exert effort under the assigned condition (variable: *effort*, 100-point VAS scale).

4. Leader impression measures: Participants evaluated the imagined leader in the scenario on attributes such as Selfish, Skilled, Dedicated, Charismatic, Autocratic, Visionary, and Perceived as Male, all measured on 7-point Likert scales.

The effort motivation of team members under the given reward allocation conditions (*effort*) serves as the primary dependent variable, which corresponds to e_m^{pre} in the theoretical model.

All statistical analyses were conducted using STATA/SE 18.0, with significance levels set at $p < .05$.

C5 Measures and Variables

Table C1 provides descriptions of all variables and survey items used in the follow-up experiment. The table categorizes variables into four sections: Personality Traits, Experimental Manipulations, Outcome Variable, and Leader Impressions.

Table C1: Description of Variables and Survey Questions (A Follow-Up Experiment)

Scale	Var Name	Survey Question	Response
(i) Demographic Variables		(Same as in Table B1, omitted for brevity.)	
(ii) Personality Traits		Please indicate how well each of the following statements describes you.	1 (Strongly disagree) - 7 (Strongly agree)
Altruism	*altruism*	I do good deeds without expecting anything in return.	—
Negative Reciprocity	*negRcp*	If someone puts me in a difficult position, I will do the same to them.	—
Positive Reciprocity	*posRcp*	I am willing to make personal sacrifices for those who have helped me in the past.	—
Competitiveness	*compet*	Competition brings the best out of me.	—
Risk Taking	*riskTaking*	I am not afraid to take risks.	—
Trust	*trust*	I generally assume that people have good intentions.	—
Power Distance Belief	*PDB*	Those with less power should depend on those with more power.	—
[Sqreening question]		Please select 'Neutral' as your answer to this question.	—
(iii) Outcome Variable			
Effort Motivation	*effort*	Under this leader, how much effort do you imagine yourself putting into this project?	0 (Minimal Effort) - 100 (Maximum Effort) on a Visual Analogue Scale
(iv) Attention and Manipulation Checks			
[Screening question]		In the scenario you just read, what percentage of the total revenue were you allocated as your reward?	(1) 10%, (2) 15%, (3) 30%, (4) 50%
[Screening question]		In the scenario you just read, who was responsible for determining the reward allocation for you and the leader?	(1) The upper management, (2) The leader
(v) Leader Impressions		Please indicate how you imagine the leader in the scenario you just read.	1 (Strongly disagree) - 7 (Strongly agree)
Selfish	*leadSlfsh*	I imagine the leader as a selfish person.	—
Skilled	*leadSkill*	I imagine the leader as highly skilled in managing the project.	—
Dedicated	*leadDedic*	I imagine the leader as highly dedicated to the project.	—
Charisma	*leadChrsm*	I imagine the leader as charismatic.	—
Autocratic	*leadAutoc*	I imagine the leader as likely to lead the project in an autocratic manner.	—
Visionary	*leadVsn*	I imagine the leader as having a clear vision for the project.	—
Perceived as Male	*leadMale*	I imagine the leader as male.	—

Note: The demographic variables, along with their measurement items and survey questions, are identical to those used in the main experiment. For details, see Table B1. Only respondents who correctly answered all three attention check questions were included in the final sample.

C6 Result

C6.1 Preliminary Analyses

First, we present the summary statistics for the sample in Table C2.

Table C2: Summary Statistics

Variable	N	Mean	SD	Min	Max
A. Demographic Variables					
female	1065	0.50	0.50	0.00	1.00
age	1065	48.24	8.58	21.00	60.00
regStaff	1065	0.34	0.47	0.00	1.00
mgmtStaff	1065	0.12	0.32	0.00	1.00
executive	1065	0.02	0.14	0.00	1.00
pubServ	1065	0.08	0.27	0.00	1.00
profJob	1065	0.05	0.21	0.00	1.00
partTime	1065	0.22	0.41	0.00	1.00
tempEmp	1065	0.08	0.27	0.00	1.00
selfEmp	1065	0.05	0.22	0.00	1.00
soho	1065	0.02	0.14	0.00	1.00
agrFish	1065	0.01	0.08	0.00	1.00
otherOcc	1065	0.03	0.16	0.00	1.00
B. Personality Traits					
altruism	1065	4.11	1.22	1.00	7.00
negRcp	1065	3.73	1.34	1.00	7.00
posRcp	1065	4.59	1.09	1.00	7.00
compet	1065	3.39	1.33	1.00	7.00
riskTaking	1065	3.15	1.31	1.00	7.00
trust	1065	3.86	1.19	1.00	7.00
PDB	1065	3.12	1.26	1.00	7.00
C. Treatment Dummies					
highRwd	1065	0.50	0.50	0.00	1.00
byMgmt	1065	0.49	0.50	0.00	1.00
D. Outcome Variable					
effort	1065	66.61	25.89	0.00	100.00
E. Leader Impression					
leadSlfsh	1065	3.80	1.37	1.00	7.00
leadSkill	1065	4.89	1.27	1.00	7.00
leadDedic	1065	4.70	1.23	1.00	7.00
leadChrsm	1065	4.26	1.20	1.00	7.00
leadAutoc	1065	4.03	1.26	1.00	7.00
leadVsn	1065	4.59	1.18	1.00	7.00
leadMale	1065	4.52	1.30	1.00	7.00

Note: Summary statistics are presented for demographic variables, personality traits, treatment dummies, outcome variables, and leader impression metrics. All continuous variables are measured on a 7-point Likert scale except for *effort*, which is measured on a 0-100 scale.

Respondents who selected occupations with extremely low frequencies—Executive (*executive*), Professional (*profJob*), Self-Employed (*selfEmp*), SOHO (*soho*), and Agriculture/Fishery (*agriFish*)—were grouped into the Other Occupation (*otherOcc*) category.

To ensure the independence of personality trait measures, we examined polychoric correlations (see Table C3) and found that all coefficients remained below 0.6, indicating no concerns regarding multicollinearity and suggesting that these variables capture distinct personality traits (Shrestha, 2020).

Next, we conducted a balance check (see Table C4) to confirm that there were no significant pre-treatment differences across the four experimental conditions, ensuring that randomization was

Table C3: Polychoric Correlation Matrix of Personality Traits

	altruism	*negRcp*	*posRcp*	*compet*	*riskTaking*	*trust*	*PDB*
altruism	1.00						
negRcp	-0.10	1.00					
posRcp	0.38	0.11	1.00				
compet	0.12	0.22	0.14	1.00			
riskTaking	0.20	0.12	0.12	0.50	1.00		
trust	0.26	-0.05	0.20	0.14	0.15	1.00	
PDB	-0.12	0.13	-0.13	0.20	0.17	0.00	1.00

Note: This table reports the polychoric correlation matrix for personality traits. All values are rounded to two decimal places.

successful.

C6.2 Testing H3 and H4

To test H3 and H4, we first visualize the distribution of effort motivation across the four experimental conditions using histgrams.

As shown in Figure C2, in the high reward share conditions, the distribution peak consistently appears at the right end of the scale (indicating maximum motivation) regardless of whether the allocation was determined by the leader or upper management. In contrast, the distribution becomes more spread out in the low reward share conditions.

Next, we compare the mean effort motivation across conditions.

Across both decision-maker conditions (By Leader and By Management), effort motivation is higher in the higher reward share condition compared to the lower reward share condition, as shown in Figure C3, providing strong support for H3.

In the lower reward share condition, effort motivation is significantly lower when the decision was made by the leader than when it was made by upper management. However, in the high reward share condition, the decision-making authority does not affect effort motivation.

Table C5 presents the regression results for effort motivation across all participants, as well as separately for male and female subsamples. In all models, the main effects of *highRwd* and *byMgmt* are significantly positive, while their interaction term ($highRwd \times byMgmt$) is significantly negative. This indicates that receiving a higher reward share increases effort motivation regardless of who makes the decision, but the extent of this increase is greater when the decision is made by the team leader rather than upper management.

The results are generally consistent across gender groups, though some differences emerge. The interaction term is more strongly negative in the male subsample, suggesting that men are particularly sensitive to whether the reward allocation decision is made by the leader or upper management. In contrast, while the interaction effect remains negative for female members, its magnitude is smaller and only marginally significant. This suggests that female members' effort motivation is somewhat less influenced by the decision-maker than male members'.

Overall, these findings support H4, demonstrating that while a higher reward share consistently increases effort motivation, the effect is more pronounced when the leader, rather than upper management, determines the allocation—especially among male participants.

Table C4: Balance Check across Conditions

	lowRwd×byLeader		highRwd×byLeader		lowRwd×byMgmt		highRwd×byMgmt		p-value
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
female	0.50	0.50	0.50	0.50	0.51	0.50	0.49	0.50	0.99
age	47.92	8.69	47.54	9.05	48.78	8.05	48.77	8.45	0.48
regStaff	0.32	0.47	0.39	0.49	0.30	0.46	0.35	0.48	0.14
mgmtStaff	0.12	0.32	0.10	0.30	0.13	0.33	0.13	0.34	0.72
pubServ	0.08	0.27	0.06	0.24	0.08	0.27	0.09	0.29	0.69
tempEmp	0.06	0.23	0.07	0.25	0.11	0.31	0.09	0.28	0.11
partTime	0.26	0.44	0.21	0.41	0.20	0.40	0.20	0.40	0.28
otherJobs	0.17	0.38	0.17	0.38	0.18	0.39	0.14	0.35	0.65
altruism	4.13	1.22	4.04	1.28	4.11	1.17	4.16	1.21	0.95
negRcp	3.77	1.32	3.68	1.37	3.74	1.34	3.74	1.33	0.94
posRcp	4.64	1.12	4.49	1.14	4.57	1.00	4.65	1.09	0.22
compet	3.28	1.33	3.34	1.34	3.55	1.39	3.40	1.26	0.08
riskTaking	3.04	1.39	3.12	1.29	3.16	1.21	3.27	1.32	0.17
trust	3.76	1.19	3.86	1.24	3.90	1.13	3.91	1.17	0.52
PDB	3.15	1.32	3.00	1.31	3.10	1.21	3.22	1.20	0.25

Note: Reported p-values indicate the results of statistical tests for group differences. Chi-square tests were used for categorical variables (gender and occupation), while all other variables were analyzed using the Kruskal-Wallis test.

C6.3 Moderating Effect of Personality Traits

We examine how personality traits moderate the effect of High Reward (vs. Low Reward) on effort motivation, controlling for age and gender. Figure C4 presents the estimated interaction coefficients for the overall, male and female samples.

Overall, we observed two significant moderation effects (Figure C4). First, in the By Leader condition, Trust had a negative moderation effect on the impact of High Reward, suggesting that individuals with greater trust in others were less influenced by monetary rewards. Second, Power Distance Belief (PDB) negatively moderated the effect of High Reward in the By Management condition, indicating that individuals with stronger hierarchical acceptance were less responsive to financial incentives.

Regarding gender differences, in the By Leader condition, male members with higher Positive Reciprocity exhibited a stronger response to High Reward ($p < .01$), whereas those with higher Competitiveness were less motivated by financial incentives ($p < .05$). For female members, no significant moderation effects were found.

In the By Management condition, the negative moderation effect of PDB observed in the overall sample was primarily driven by men, confirming that hierarchical acceptance reduces sensitivity to reward increases.

With respect to occupation, no significant moderating effects were observed for any occupational category in either the leader- or management-determined reward conditions.

C6.4 Mediation Analyses

To examine the psychological mechanisms through which leaders' generosity influences effort motivation, we conducted mediation analyses using leader impression variables collected after measuring effort motivation.

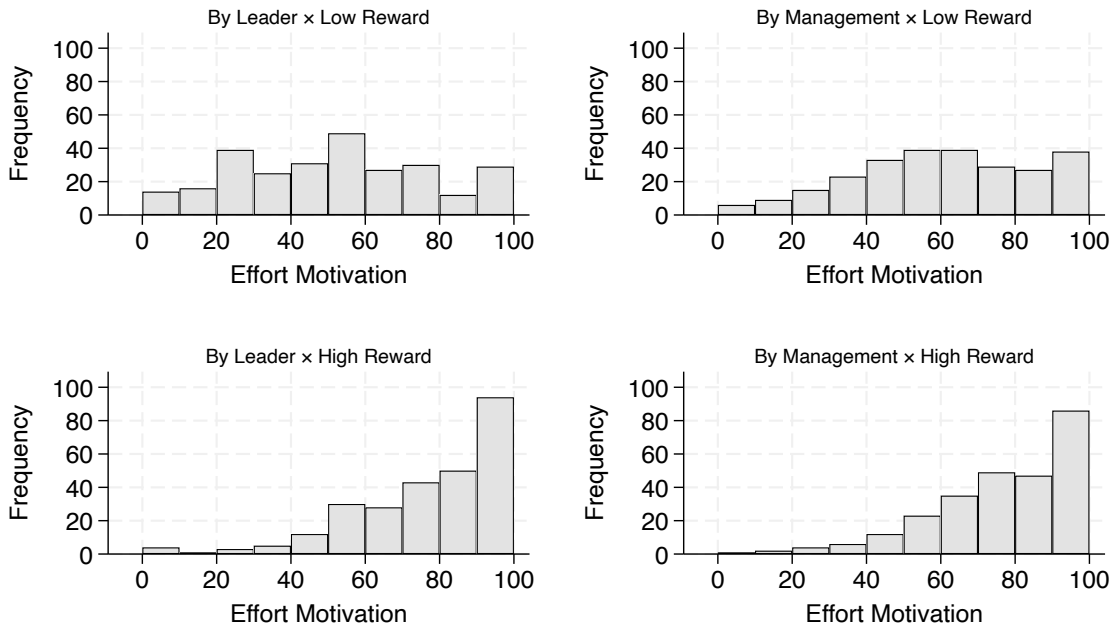


Figure C2: Distribution of Effort Motivation across Experimental Conditions

Note: This figure shows the distribution of effort motivation. The horizontal axis represents participants' motivation to exert effort in the team project (ranging from 0 to 100), while the vertical axis indicates the frequency of respondents selecting each effort level.

First, we examine the polychoric correlation matrix of leadership impression measures (Table C7).

Table C7: Polychoric Correlation Matrix of Leadership Impression Measures

	leadSlfsh	*leadSkill*	*leadDedic*	*leadChrsm*	*leadAutoc*	*leadVsn*	*leadMale*
leadSlfsh	1.00						
leadSkill	-0.28	1.00					
leadDedic	-0.27	0.93	1.00				
leadChrsm	-0.22	0.66	0.66	1.00			
leadAutoc	0.60	-0.17	-0.13	-0.06	1.00		
leadVsn	-0.24	0.75	0.76	0.63	-0.07	1.00	
leadMale	0.20	0.30	0.31	0.27	0.26	0.32	1.00

Note: This table reports the polychoric correlation matrix for leadership impression measures. All values are rounded to two decimal places.

The correlations among leadership impression variables are strong. Thus, we create three composite measures by averaging their values:

1. Transformational Impression (*transformational*): The mean of *leadSkill*, *leadDedic*, *leadChrsm*, and *leadVsn* (correlations $> .66$).
2. Authoritarian Impression (*authoritarian*): The mean of *leadSlfsh* and *leadAutoc* (correlation

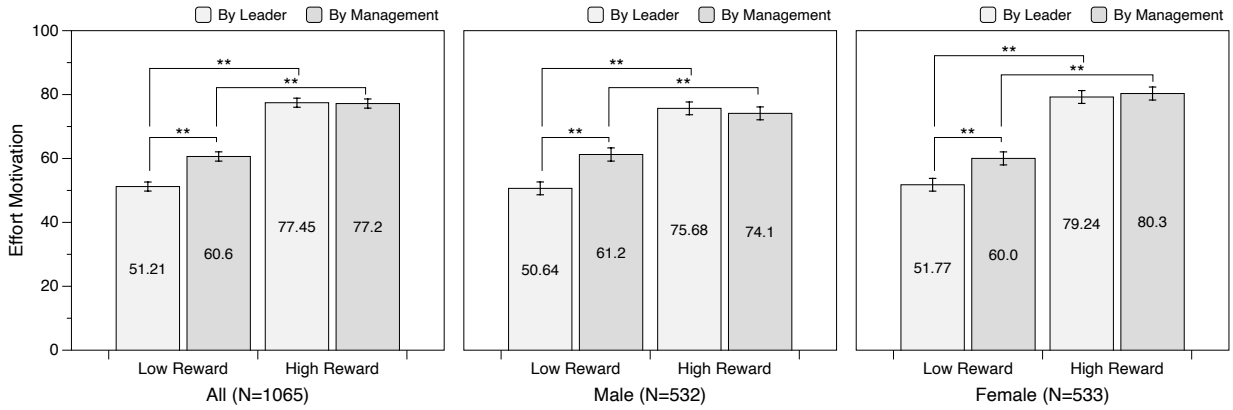


Figure C3: Mean Effort Motivation across Experimental Conditions

Note: When members receive a smaller reward share (LowReward), they exhibit greater effort motivation when the decision is made by the upper management rather than by the leader ($p < .01$). However, when members receive a higher reward share (High Reward), the decision-maker (leader vs. upper management) does not significantly impact effort motivation. Regardless of the decision-maker, a higher reward share leads to significantly greater effort motivation compared to a lower reward share (all p-values$< .01$). Error bars indicate standard errors. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$.

$= 0.60$).

3. Perceived as Male: *leadMale* is used as a single-item measure due to its weaker correlations with other variables.

Reliability analyses confirmed the internal consistency of these composite measures. The transformational impression scale (*transformational*) showed high reliability (Cronbach's $\alpha = 0.89$), and the authoritarian impression scale (*authoritarian*) demonstrated acceptable reliability (Cronbach's $\alpha = 0.72$). Both exceed the conventional threshold of 0.70, supporting our approach of creating these composite measures for the subsequent mediation analyses.

Next, we test whether leadership impressions mediate the effect of High Reward (vs. Low Reward) allocation on members' effort motivation, separately for the By Leader and By Management conditions.

Table C8 presents the estimated indirect effects and their 95% confidence intervals from mediation analysis, where each leadership impression variable is treated as a single mediator.

Table C8: Results of Causal Mediation Analyses for Leader Impressions

	By Leader			By Management		
Mediator	Indirect Effect	SE	95% CI	Indirect Effect	SE	95% CI
Transformational	0.94	0.77	[-0.57, 2.45]	-0.21	0.60	[-1.40, 0.97]
Authoritarian	6.21**	1.50	[3.27, 9.14]	3.47**	0.87	[1.77, 5.17]
Perceived as Male	-1.78*	0.75	[-3.25, -0.31]	0.03	0.14	[-0.24, 0.31]

Note: The table presents results from causal mediation analyses, with *highRwd* (vs. *lowRwd*) as the treatment variable, *effort* as the outcome variable, and each leadership impression as a single mediator. The models control for gender and age. Robust standard errors are reported in parentheses. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

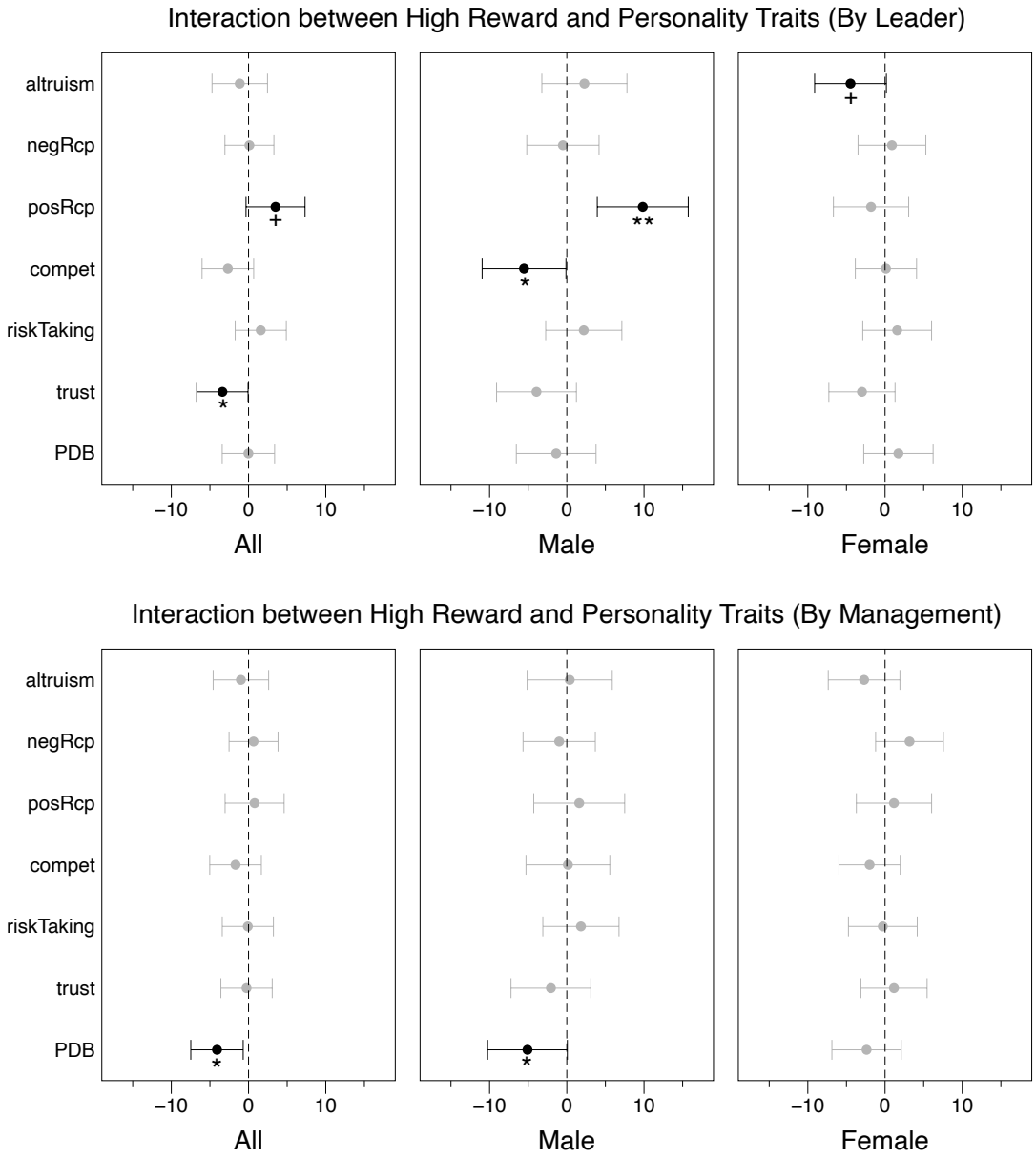


Figure C4: Interaction Effect of Personality Traits

Table C5: Regression Results for Effort Motivation

	Basic Controls			Full Controls		
	All	Male	Female	All	Male	Female
highRwd	26.30**	25.89**	27.19**	26.53**	26.09**	27.67**
	(2.07)	(3.12)	(2.75)	(2.04)	(3.15)	(2.68)
byMgmt	9.16**	10.90**	7.92*	9.06**	10.61**	8.03**
	(2.23)	(3.25)	(3.08)	(2.20)	(3.26)	(2.97)
highRwd × *byMgmt*	-9.77**	-13.13**	-6.46+	-9.98**	-12.24**	-8.03*
	(2.86)	(4.24)	(3.86)	(2.82)	(4.24)	(3.79)
Job Controls	Yes	Yes	Yes	Yes	Yes	Yes
Personality Traits	No	No	No	Yes	Yes	Yes
Prob > F	0.00	0.00	0.00	0.00	0.00	0.00
N	1065	532	533	1065	532	533

Note: Robust standard errors in parentheses. All models include age and job categories as controls, with gender additionally controlled in full sample models. These demographic variables constitute the "Basic Controls", while "Full Controls" adds personality traits (altruism, reciprocity, competitiveness, risk-taking, trust, and power distance). The interaction term (*highRwd*×*byMgmt*) tests whether reward effects differ when allocations are made by leaders versus upper management. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

When the leader determined the reward allocation, a generous allocation was associated with a stronger perception of the leader as female, which in turn decreased effort motivation. Conversely, generosity reduced perceptions of the leader as authoritarian, which increased effort motivation.

In contrast, when upper management determined the reward allocation, the only significant mediator was the authoritarian impression. Unlike in the By Leader condition, Perceived as Male (*leadMale*) did not serve as a significant mediator and showed only a slight, non-significant positive effect. However, similar to the By Leader condition, authoritarian impression had a significant mediating effect: generosity reduced perceptions of the leader as authoritarian, which increased effort motivation. This suggests that even when upper management determined the high reward allocation, the leader's endorsement—rather than opposition—led to weaker perception of the leader as authoritarian.

C7 Summary

Our findings indicate the following key insights:

1. Effect of Reward Share: A higher (vs. lower) reward share increases team members' effort motivation.
2. Effect of Decision-Maker: The motivational boost from a higher reward share is greater when the decision is made by the leader rather than upper management.
3. Moderation by Personality Traits: Trust (By Leader) and Power Distance Belief (By Management) reduce sensitivity to reward increases.
4. Mediation by Leadership Perceptions: Generous leaders are perceived as less authoritarian, increasing effort motivation. In the By Leader condition, generosity also strengthens the perception of the leader as female, which slightly dampens motivation.

These findings suggest that leadership generosity not only enhances team motivation but also influences perceptions of authority and gender, shaping members' willingness to exert effort.

Table C6: Moderating Effects of Occupation on Effort Motivation

	By Leader		By Management	
Variable	Coefficient	SE	Coefficient	SE
highRwd	21.48**	4.41	20.76**	4.19
regStaff	1.63	4.40	7.22	4.56
mgmtStaff	9.76+	5.56	5.17	5.89
pubServ	9.15	6.58	4.90	6.01
tempEmp	0.29	8.20	-4.88	6.30
otherOcc	1.61	5.14	7.15	4.85
highRwd × *regStaff*	8.17	5.64	-10.89+	5.60
highRwd × *mgmtStaff*	2.47	7.45	-3.64	7.24
highRwd × *pubServ*	-3.56	8.47	4.25	7.22
highRwd × *tempEmp*	9.95	9.44	8.16	7.22
highRwd × *otherOcc*	6.69	6.92	-8.13	6.18
female	5.40*	2.28	5.04*	2.26
age	0.06	0.12	0.23+	0.12
Prob > F	0.000		0.000	
N	542		523	

Note: This table presents results from OLS regression with robust standard errors estimating the moderating effects of occupation on effort motivation. Robust standard errors are reported. $^{**}p < .01$, $^{*}p < .05$, $^{+}p < .10$.

D Survey Questionnaire (Main Experiment)

D1 English-Translated Version

For all conditions:

Please indicate your gender.

1 ○ Male
2 ○ Female

Please indicate your age.

[ ] years old

Please indicate your occupation.

1 ○ Regular employee (non-managerial)
2 ○ Regular employee (managerial)
3 ○ Company executive (president/officer)
4 ○ Public servant/teacher/non-profit organization employee
5 ○ Temporary/contract worker
6 ○ Self-employed (freelancer/service provider)
7 ○ SOHO
8 ○ Agriculture/fishery
9 ○ Professional (lawyer/accountant/medical)
10 ○ Part-time/casual worker
11 ○ Housewife/househusband
12 ○ Student
13 ○ Unemployed

For all conditions:

Q01

Please indicate how well each of the following statements describes you.

		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I do good deeds without expecting anything in return.	1	2	3	4	5	6	7
2	I am optimistic about the future.	1	2	3	4	5	6	7
3	I am not afraid to take risks.	1	2	3	4	5	6	7
4	I generally assume that people have good intentions.	1	2	3	4	5	6	7
5	I feel a high level of satisfaction with my current job.	1	2	3	4	5	6	7
6	I value promotion and success in my work.	1	2	3	4	5	6	7
7	I tend to be disorganized and careless.	1	2	3	4	5	6	7
8	Competition brings the best out of me.	1	2	3	4	5	6	7
9	I would not try to gain promotions through flattery, even if it might be effective.	1	2	3	4	5	6	7
10	If I know I'll never get caught, I'd steal 100 million yen.	1	2	3	4	5	6	7
11	I have a right to be respected more than the average person.	1	2	3	4	5	6	7
12	I get a lot of enjoyment from owning expensive, luxurious things.	1	2	3	4	5	6	7
13	I am thorough and strict with myself.	1	2	3	4	5	6	7

Strongly disagree Disagree Somewhat disagree Neutral Somewhat agree Agree Strongly agree

For all conditions:

Q02

Suppose there is a “Speed Lottery” that has a 50% chance of winning 10,000 yen and a 50% chance of winning nothing.
How much would you be willing to pay to purchase this lottery ticket?
Please indicate the maximum price you would consider paying.

[ ] yen

Q03

Suppose a major earthquake has occurred in Japan.
While your area suffered no damage, there are other regions that experienced severe damage.
If you had 100,000 yen in unexpected money at this time, how much would you be willing to donate for disaster recovery?

[ ] yen

Next

0 50 100(%)

For pre-project decision (*preProj*) condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

You are the leader of a three-member team, including yourself, at your job and you are about to embark on a new team project.

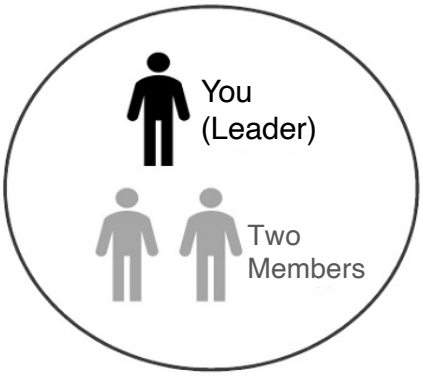
As the leader, not only are you advancing the project, but you are also entrusted with the most responsible roles, such as the overall management of the team's work, member motivation management, and decision-making for the distribution of rewards.

If everyone in the team puts in more effort, the project can generate larger profits. With maximum effort from everyone, the project could yield a profit of up to 6 million yen (approximately 40,000 dollars), but with inadequate effort, it might only produce a minimum of 600,000 yen (approximately 4,000 dollars).

Now, **at the meeting before the start of this project**, you are about to declare in front of the two members how the profits expected from this project will be divided as rewards between yourself and the two members.

You have the authority to determine your share of rewards, with the remainder split equally between the two members. For instance, you might take 50% for yourself, leaving 25% for each member. Note that your allocation decision may influence everyone's motivation and effort levels in the project.

Once announced, this decision is binding for all parties - the team members must accept your allocation, and you cannot modify it later. After this project concludes, the team will be disbanded, and there will be no future collaboration opportunities with these team members.



Project Team

For post-project decision (*postProj*) condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

You are the leader of a three-member team, including yourself, at your job and you are about to embark on a new team project.

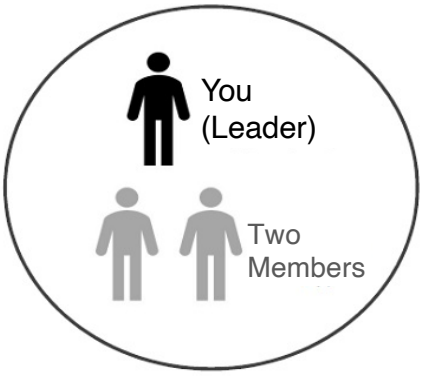
As the leader, not only are you advancing the project, but you are also entrusted with the most responsible roles, such as the overall management of the team's work, member motivation management, and decision-making for the distribution of rewards.

If everyone in the team puts in more effort, the project can generate larger profits. With maximum effort from everyone, the project could yield a profit of up to 6 million yen (approximately 40,000 dollars), but with inadequate effort, it might only produce a minimum of 600,000 yen (approximately 4,000 dollars).

Now, **the project period has ended**, and all that is left is to wait and see how much profit the project will generate. At the meeting, you are about to declare in front of the two members how the profits expected from this project will be divided as rewards between yourself and the two members.

You have the authority to determine your share of rewards, with the remainder split equally between the two members. For instance, you might take 50% for yourself, leaving 25% for each member. Your allocation decision will not affect the project's outcome.

Once announced, this decision is binding for all parties - the team members must accept your allocation, and you cannot modify it later. After this project concludes, the team will be disbanded, and there will be no future collaboration opportunities with these team members.



Project Team

For positive outcome (*posOut*) condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

You are the leader of a three-member team, including yourself, at your job and you are about to embark on a new team project.

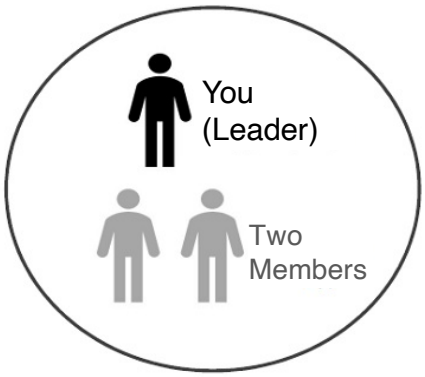
As the leader, not only are you advancing the project, but you are also entrusted with the most responsible roles, such as the overall management of the team's work, member motivation management, and decision-making for the distribution of rewards.

If everyone in the team puts in more effort, the project can generate larger profits. With maximum effort from everyone, the project could yield a profit of up to 6 million yen (approximately 40,000 dollars), but with inadequate effort, it might only produce a minimum of 600,000 yen (approximately 4,000 dollars).

Now, **the project has ended with the best possible outcome**, generating a profit of 6 million yen. At the final meeting, you are about to declare in front of the two members how the profits earned from this project will be divided as rewards between yourself and the two members.

You have the authority to determine your share of rewards, with the remainder split equally between the two members. For instance, you might take 50% for yourself, leaving 25% for each member.

Once announced, this decision is binding for all parties - the team members must accept your allocation, and you cannot modify it later. After this project concludes, the team will be disbanded, and there will be no future collaboration opportunities with these team members.



Project Team

For negative outcome (*negOut*) condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

You are the leader of a three-member team, including yourself, at your job and you are about to embark on a new team project.

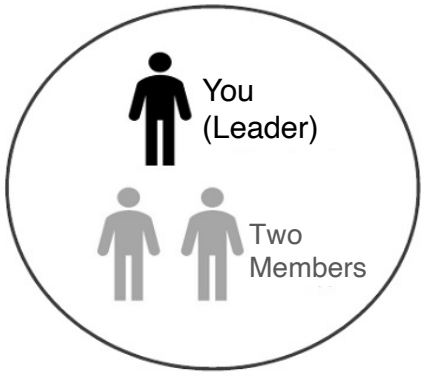
As the leader, not only are you advancing the project, but you are also entrusted with the most responsible roles, such as the overall management of the team's work, member motivation management, and decision-making for the distribution of rewards.

If everyone in the team puts in more effort, the project can generate larger profits. With maximum effort from everyone, the project could yield a profit of up to 6 million yen (approximately 40,000 dollars), but with inadequate effort, it might only produce a minimum of 600,000 yen (approximately 4,000 dollars).

Now, **unfortunately, the project has ended with the worst possible outcome**, generating a profit of only 600,000 yen. At the final meeting, you are about to declare in front of the two members how the profits earned from this project will be divided as rewards between yourself and the two members.

You have the authority to determine your share of rewards, with the remainder split equally between the two members. For instance, you might take 50% for yourself, leaving 25% for each member.

Once announced, this decision is binding for all parties - the team members must accept your allocation, and you cannot modify it later. After this project concludes, the team will be disbanded, and there will be no future collaboration opportunities with these team members.



Project Team

For all conditions:

Q04

As the leader of this team, what do you think you would decide for your own reward, as well as the rewards for the members, and how would you announce this in front of the members at this meeting? Please specify the percentage of the total rewards that you would take for yourself, between 0 to 100.

You will receive [ ] % of the total rewards. (yen)
Each member will receive

% of the total rewards. (yen)

Next

0 50 100(%)

Q05

In the scenario you just read, at what timing did you as a leader decide and announce the reward allocation to members?

1 ○ Before the project started
2 ○ After the project ended, but before knowing the results
3 ○ After the project ended and results were known
4 ○ Don't remember

Next

0 50 100(%)

For all conditions (item 2 applicable to pre-project condition only):

Q06

Please indicate your reasons for choosing that reward allocation.

		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	Because I want team members to view me favorably	1	2	3	4	5	6	7
2	Because I want to motivate team members to put in greater effort	1	2	3	4	5	6	7
3	Because I wanted to secure a larger share for myself	1	2	3	4	5	6	7
4	Because I wanted to give more to the members	1	2	3	4	5	6	7

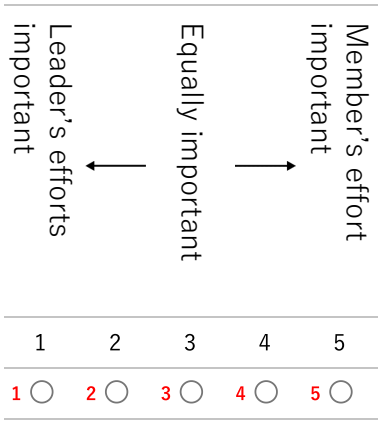
Next

0 50 100(%)

For pre-project and post-project decision (*preProj* and *postProj*) conditions:

Q07
Please share your thoughts about this project's outcome.

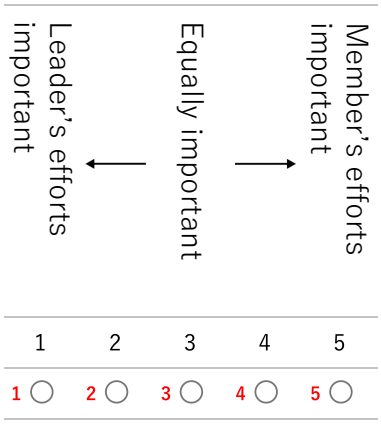
Q07_1
For this project to succeed, which do you think is more important - your efforts as a leader or the members' efforts?



For positive outcome (*posOut*) condition:

Q07
Please share your thoughts about this project's outcome.

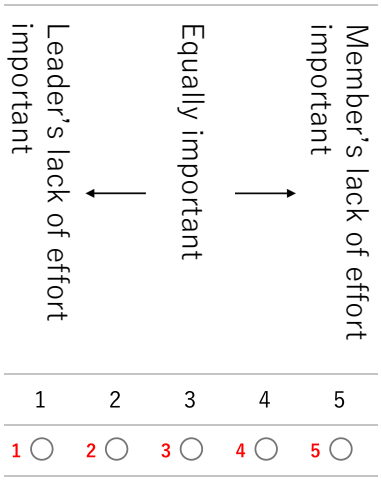
Q07_2
As factors in the project's success, which was more important - your efforts as a leader or the members' efforts?



For negative outcome (*negOut*) condition:

Q07
Please share your thoughts about this project's outcome.

Q07_3
As factors in the project's failure, which was more important - your lack of effort as a leader or the members' lack of efforts?



D2 Original (Japanese) Version

For all conditions:

あなたの性別をお知らせください。

1 ○ 男性
2 ○ 女性

あなたの年齢をお知らせください。

[ ] 歳

あなたの職業をお知らせください。

1 ○ 会社勤務(一般社員)
2 ○ 会社勤務(管理職)
3 ○ 会社経営(経営者・役員)
4 ○ 公務員・教職員・非営利団体職員
5 ○ 派遣社員・契約社員
6 ○ 自営業(商工サービス)
7 ○ SOHO
8 ○ 農林漁業
9 ○ 専門職(弁護士・税理士等・医療関連)
10 ○ パート・アルバイト
11 ○ 専業主婦・主夫
12 ○ 学生
13 ○ 無職
14 ○ その他の職業

For all conditions:

Q01

以下の項目があなた自身にどのぐらい当てはまるかについて、もっとも適切なものを選んでください。（それぞれひとつずつ）

		まったくそう思わない	そう思わない	ややそう思わない	どちらともいえない	ややそう思う	そう思う	とてもそう思う
1	私は見返りを期待することなく、善い行いをする。	1	2	3	4	5	6	7
2	私は未来に対して楽観的である。	1	2	3	4	5	6	7
3	私は普段、リスクを取ることを恐れない。	1	2	3	4	5	6	7
4	周りの人間は善意をもって生きていると思う。	1	2	3	4	5	6	7
5	私は自分の仕事に対して高い満足感を感じている。	1	2	3	4	5	6	7
6	私は自分の仕事における昇進や成功を重要視している。	1	2	3	4	5	6	7
7	私はだらしなく、うっかりしていると思う。	1	2	3	4	5	6	7
8	競争が私の能力を最大限に引き出すと思う。	1	2	3	4	5	6	7
9	たとえそうすればうまくいくと思っても、仕事の上で昇進するためにお世辞を言ったりしようとは思わない。	1	2	3	4	5	6	7
10	もし決して捕まらないとわかっているのなら、私は1億円を盗もうと思う。	1	2	3	4	5	6	7
11	私は、平均的な人間よりも、尊重される権利があると思う。	1	2	3	4	5	6	7
12	私は高価で贅沢なものを所有することで、多くの楽しみが得られる。	1	2	3	4	5	6	7
13	私はしっかりしていて、自分に厳しいと思う。	1	2	3	4	5	6	7

まったくそう思わない　そう思わない　ややそう思わない　どちらともいえない　ややそう思う　そう思う　とてもそう思う

次へ

For all conditions:

Q02

確率 50% で1万円が当たり、確率 50%で何ももらえない「スピードくじ」があるとします。
あなたはその「スピードくじ」が、何円以下であれば購入しますか。
購入してもよいと考えるギリギリ高い価格をお答えください。

円

Q03

今、日本において大きな規模の地震が発生したとします。
あなたが住んでいる場所は被害は全くありませんでしたが、壊滅的な被害を被った地方があるとします。
このとき、ちょうどあなたに10万円の思わぬ臨時収入があったならば、あなたはこの10万円のうち、災害復興のためにいくらまでなら寄付できると思いますか?

円

次へ

0 50 100(%)

For pre-project decision (*preProj*) condition:

以下のシナリオ(仮想的な状況)をよく読んで、後の質問にお答えください。
文章の内容について、後ほど質問がございますので、文章の内容をよくご覧ください。

あなたは、自身の仕事において、あなたを含め3名からなるチームのリーダーとして、新しいチームプロジェクトに取り組むことになりました。

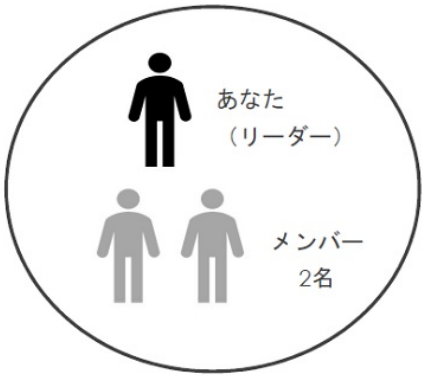
リーダーであるあなたは、プロジェクトを進めるだけでなく、そのチームの仕事の全体的な管理やメンバーのモチベーション管理、報酬の配分決定など、最も責任が重く、また他のメンバーよりも多くの労力が必要な役を任されました。

このチームの全員がより多くの努力を注ぐことができれば、プロジェクトはより大きな収益を生み出します。全員が最大限の努力を注げばプロジェクトは最高で 600 万円の収益を生みますが、適切な努力を注がなければ最低ラインの60万円の収益しか生み出さないかもしれません。

今、あなたは**【このプロジェクト開始前のミーティング】**にて、このプロジェクトから得られるであろう収益を、報酬としてリーダーである自らとメンバー2人に対してどのように分けるのかについて、メンバー2人の前で宣言することになりました。

あなた以外の 2人のメンバーの取り分は等しくなるようにして、あなた自身の報酬の取り分について、あなた自身が自由に決めることができます。(例えばあなたが報酬の 50% を、他のメンバーが 25% ずつ、など)。当然、あなたが宣言する報酬の配分次第で、あなた及びメンバーのプロジェクトへのモチベーションや努力水準は影響を受ける可能性があります。

他のメンバーはその決定に従う以外の方法はなく、あなたもこの決定を後から覆すことはできません。このチームは、このプロジェクトが終わり次第解散となり、今後それらのメンバーとともに仕事をする機会はないものとします。



プロジェクト チーム

For post-project decision (*postProj*) condition:

以下のシナリオ(仮想的な状況)をよく読んで、後の質問にお答えください。
文章の内容について、後ほど質問がございますので、文章の内容をよくご覧ください。

あなたは、自身の仕事において、あなたを含め3名からなるチームのリーダーとして、新しいチームプロジェクトに取り組むことになりました。

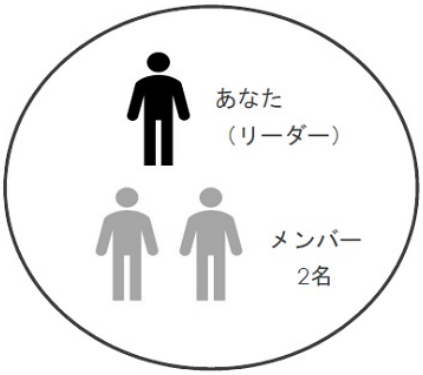
リーダーであるあなたは、プロジェクトを進めるだけでなく、そのチームの仕事の全体的な管理やメンバーのモチベーション管理、報酬の配分決定など、最も責任が重く、また他のメンバーよりも多くの労力が必要な役を任されました。

このチームの全員がより多くの努力を注ぐことができれば、プロジェクトはより大きな収益を生み出します。全員が最大限の努力を注げばプロジェクトは最高で 600 万円の収益を生みますが、適切な努力を注がなければ最低ラインの60万円の収益しか生み出さないかもしれません。

今、**【このプロジェクトの期間が終わり】**残すはそのプロジェクトの収益がいくらになるのかを待つのみとなりました。あなたはミーティングにて、このプロジェクトから得られるであろう収益を、報酬としてリーダーである自らと2人のメンバーに対してどのように分けるのかについてメンバー2人の前で宣言することになりました。

あなた以外の 2人のメンバーの取り分は等しくなるようにして、あなた自身の報酬の取り分について、あなた自身が自由に決めることができます。(例えばあなたが報酬の 50% を、他のメンバーが 25% ずつ、など)。あなたが宣言する報酬の配分によって、このプロジェクトの成果に影響を及ぼすことはありません。

他のメンバーはその決定に従う以外の方法はなく、あなたもこの決定を後から覆すことはできません。このチームは、このプロジェクトが終わり次第解散となり、今後それらのメンバーとともに仕事をする機会はないものとします。



プロジェクト チーム

For positive outcome (*posOut*) condition:

以下のシナリオ(仮想的な状況)をよく読んで、後の質問にお答えください。
文章の内容について、後ほど質問がございますので、文章の内容をよくご覧ください。

あなたは、自身の仕事において、あなたを含め3名からなるチームのリーダーとして、新しいチームプロジェクトに取り組むことになりました。

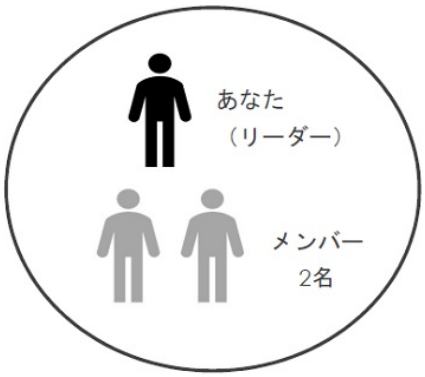
リーダーであるあなたは、プロジェクトを進めるだけでなく、そのチームの仕事の全体的な管理やメンバーのモチベーション管理、報酬の配分決定など、最も責任が重く、また他のメンバーよりも多くの労力が必要な役を任されました。

このチームの全員がより多くの努力を注ぐことができれば、プロジェクトはより大きな収益を生み出します。全員が最大限の努力を注げばプロジェクトは最高で 600 万円の収益を生みますが、適切な努力を注がなければ最低ラインの60万円の収益しか生み出さないかもしれません。

今、**【このプロジェクトは見事、最高の結果に終わり】**600 万円の収益を得ることができました。最後のミーティングにて、このプロジェクトから得られた収益を、報酬としてリーダーである自らと2人のメンバーに対してどのように分けるのかについてメンバー2人の前で宣言することになりました。

あなた以外の 2人のメンバーの取り分は等しくなるようにして、あなた自身の報酬の取り分について、あなた自身が自由に決めることができます。(例えばあなたが報酬の 50% を、他のメンバーが 25% ずつ、など)。

他のメンバーはその決定に従う以外の方法はなく、あなたもこの決定を後から覆すことはできません。このチームは、このプロジェクトが終わり次第解散となり、今後それらのメンバーとともに仕事をする機会はないものとします。



プロジェクト チーム

For negative outcome (*negOut*) condition:

以下のシナリオ(仮想的な状況)をよく読んで、後の質問にお答えください。
文章の内容について、後ほど質問がございますので、文章の内容をよくご覧ください。

あなたは、自身の仕事において、あなたを含め3名からなるチームのリーダーとして、新しいチームプロジェクトに取り組むことになりました。

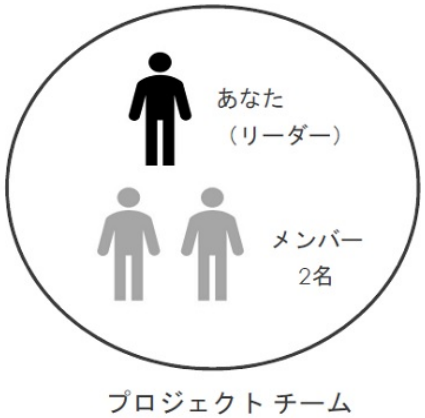
リーダーであるあなたは、プロジェクトを進めるだけでなく、そのチームの仕事の全体的な管理やメンバーのモチベーション管理、報酬の配分決定など、最も責任が重く、また他のメンバーよりも多くの労力が必要な役を任されました。

このチームの全員がより多くの努力を注ぐことができれば、プロジェクトはより大きな収益を生み出します。全員が最大限の努力を注げばプロジェクトは最高で 600 万円の収益を生みますが、適切な努力を注がなければ最低ラインの60万円の収益しか生み出さないかもしれません。

今、**【このプロジェクトは残念ながら、最低の結果に終わり】** 60 万円の収益を得ることになりました。最後のミーティングにて、このプロジェクトから得られた収益を、報酬としてリーダーである自らと2人のメンバーに対してどのように分けるのかについてメンバー2人の前で宣言することになりました。

あなた以外の 2人のメンバーの取り分は等しくなるようにして、あなた自身の報酬の取り分について、あなた自身が自由に決めることができます。(例えばあなたが報酬の 50% を、他のメンバーが 25% ずつ、など)。

他のメンバーはその決定に従う以外の方法はなく、あなたもこの決定を後から覆すことはできません。このチームは、このプロジェクトが終わり次第解散となり、今後それらのメンバーとともに仕事をする機会はないものとします。



For all conditions:

Q04

あなたがこのチームのリーダーとして、このミーティングで自分とメンバーの報酬配分をどのように決定し、それをメンバーに発表するかを教えてください。
全体の報酬からあなたが受け取る割合を0%から100%の範囲で具体的に答えてください。

あなたは全収益の [ ] %を得る（　　万円）
各メンバーは全収益の

%を得る（　　万円）

次へ

0　50　100(%)

Q05

先ほど読んでいただいたシナリオにおいて、あなたがリーダーとして報酬の配分を決定してメンバーに伝えたのはどのタイミングでしたか。

1 ○ プロジェクトが開始する前
2 ○ プロジェクトが終了し、プロジェクトの結果が判明する前
3 ○ プロジェクトが終了し、結果が判明した後
4 ○ 覚えていない

次へ

0　50　100(%)

For all conditions (item 2 applicable to pre-project condition only):

Q06

先ほどの問いにおいて、あなたがそのような報酬の配分を選んだ理由についてお答えください。（それぞれひとつずつ）

		まったくあてはまらない	あてはまらない	ややあてはまらない	どちらともいえない	ややあてはまる	あてはまる	とてもあてはまる
1	自分のことをメンバーから良く思われたいから。	1	2	3	4	5	6	7
2	メンバーのより大きな努力を引き出したいから。	1	2	3	4	5	6	7
3	自分の取り分をより多くしたいから。	1	2	3	4	5	6	7
4	メンバーの取り分をより多くしたいから。	1	2	3	4	5	6	7

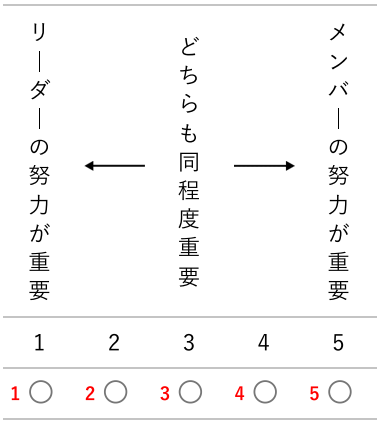
次へ

0 50 100(%)

For pre-project and post-project decision (*preProj* and *postProj*) conditions:

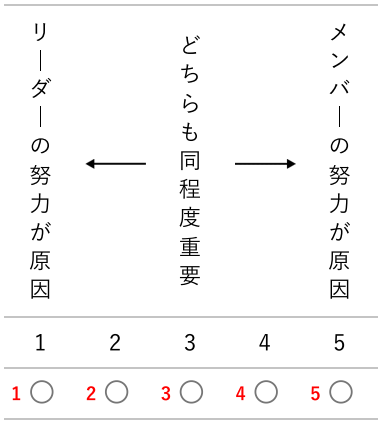
Q07
このプロジェクトの成否についてのあなたの考えをお答えください。

Q07_1
このプロジェクトが成功するために、リーダーとしての自らの努力と、メンバーの努力のどちらが重要だと想像しますか。



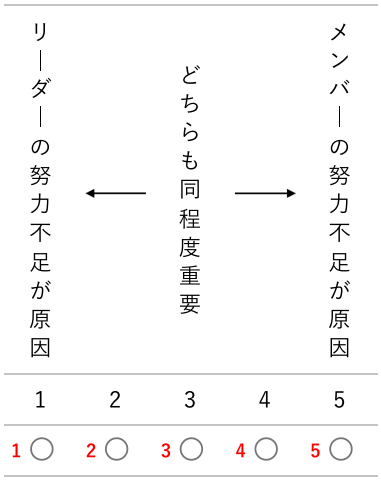
For positive outcome (*posOut*) condition:

> **Q07**
> このプロジェクトの成否についてのあなたの考えをお答えください。
>
> **Q07_2**
> プロジェクトが成功した原因として、リーダーとしての自らの努力と、メンバーの努力のどちらが重要だったと想像しますか。



For negative outcome (*negOut*) condition:

> **Q07**
> このプロジェクトの成否についてのあなたの考えをお答えください。
>
> **Q07_3**
> プロジェクトが失敗した原因として、リーダーとしての自らの努力不足と、メンバーの努力不足のどちらが重要だったと想像しますか。



E Survey Questionnaire (Follow-Up Experiment)

E1 English-Translated Version

For all conditions:

Please indicate your gender.

1 ◯ Male
2 ◯ Female

Please indicate your age.

[ ] years old

Please indicate your occupation.

1 ◯ Regular employee (non-managerial)
2 ◯ Regular employee (managerial)
3 ◯ Company executive (president/officer)
4 ◯ Public servant/teacher/non-profit organization employee
5 ◯ Temporary/contract worker
6 ◯ Self-employed (freelancer/service provider)
7 ◯ SOHO
8 ◯ Agriculture/fishery
9 ◯ Professional (lawyer/accountant/medical)
10 ◯ Part-time/casual worker
11 ◯ Housewife/househusband
12 ◯ Student
13 ◯ Unemployed
14 ◯ Other occupation

For all conditions:

Q2

Please indicate how well each of the following statements describes you.

		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I do good deeds without expecting anything in return.	1	2	3	4	5	6	7
2	If someone puts me in a difficult position, I will do the same to them.	1	2	3	4	5	6	7
3	I am willing to make personal sacrifices for those who have helped me in the past.	1	2	3	4	5	6	7
4	Competition brings the best out of me.	1	2	3	4	5	6	7
5	I am not afraid to take risks.	1	2	3	4	5	6	7
6	I generally assume that people have good intentions.	1	2	3	4	5	6	7
7	Those with less power should depend on those with more power.	1	2	3	4	5	6	7
8	Please select `Neutral' as your answer to this question.	1	2	3	4	5	6	7

Next

For Low Reward×By Leader condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

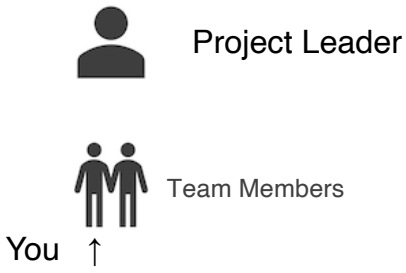
You have been assigned as a member of a three-person team working on a project.

The team is led by a capable leader who bears the primary responsibility for overall coordination, managing team members' motivation, and determining reward allocation.

This project is expected to generate revenue, and the more effort the team exerts, the higher the expected earnings.

Before the project begins, **the leader has decided to allocate the project's expected earnings as follows: 70% to the leader and 15% to each member.** This promise will never be broken.

Once the project is completed, the team will be disbanded, and you will not have any future opportunities to work with the same members.



For High Reward×By Leader condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

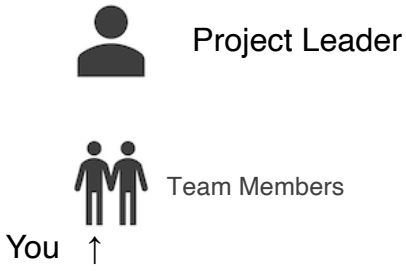
You have been assigned as a member of a three-person team working on a project.

The team is led by a capable leader who bears the primary responsibility for overall coordination, managing team members' motivation, and determining reward allocation.

This project is expected to generate revenue, and the more effort the team exerts, the higher the expected earnings.

Before the project begins, **the leader has decided to allocate the project's expected earnings as follows: 40% to the leader and 30% to each member.** This promise will never be broken.

Once the project is completed, the team will be disbanded, and you will not have any future opportunities to work with the same members.



For Low Reward×By Management condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

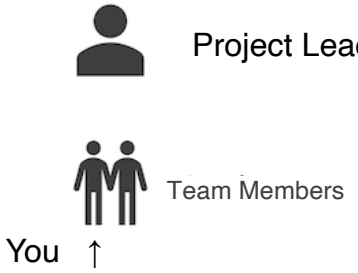
You have been assigned as a member of a three-person team working on a project.

The team is led by a capable leader who bears the primary responsibility for overall coordination and managing team members' motivation.

This project is expected to generate revenue, and the more effort the team exerts, the higher the expected earnings.

Before the project begins, **the upper management of your organization has decided to allocate the project's expected earnings as follows: 70% to the leader and 15% to each member.** This promise will never be broken.

Once the project is completed, the team will be disbanded, and you will not have any future opportunities to work with the same members.



For High Reward×By Management condition:

The following describes a hypothetical scenario. Please read it carefully as you will be asked questions about it afterwards.

You have been assigned as a member of a three-person team working on a project.

The team is led by a capable leader who bears the primary responsibility for overall coordination and managing team members' motivation.

This project is expected to generate revenue, and the more effort the team exerts, the higher the expected earnings.

Before the project begins, **the upper management of your organization has decided to allocate the project's expected earnings as follows: 40% to the leader and 30% to each member.** This promise will never be broken.

Once the project is completed, the team will be disbanded, and you will not have any future opportunities to work with the same members.

For all condition:

Q3

Under this leader, how much effort do you imagine yourself putting into this project?
The left end (0) represents "minimal effort," while the right end (100) represents "maximum effort."
Please move the slider to indicate how much effort you would exert in this project.
※ Click the slider to display the handle.

Minimal Effort — Maximum Effort
0 — 100

Next

Q4

In the scenario you just read, what percentage of the total revenue were you allocated as your reward?

1 ○ 10%
2 ○ 15%
3 ○ 30%
4 ○ 50%

Next

Q5

In the scenario you just read, who was responsible for determining the reward allocation for you and the leader?

1 ○ The upper management
2 ○ The leader

Next

For all conditions:

Q6

Please indicate how you imagine the leader in the scenario you just read.

		Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
1	I imagine the leader as a selfish person.	1	2	3	4	5	6	7
2	I imagine the leader as highly skilled in managing the project.	1	2	3	4	5	6	7
3	I imagine the leader as highly dedicated to the project.	1	2	3	4	5	6	7
4	I imagine the leader as charismatic.	1	2	3	4	5	6	7
5	I imagine the leader as likely to lead the project in an autocratic manner.	1	2	3	4	5	6	7
6	I imagine the leader as having a clear vision for the project.	1	2	3	4	5	6	7
7	I imagine the leader as male.	1	2	3	4	5	6	7

E2 Original Japanese Version

For all conditions:

あなたの性別をお知らせください。

1 ○ 男性
2 ○ 女性

あなたの年齢をお知らせください。

[ ] 歳

あなたの職業をお知らせください。

1 ○ 会社勤務(一般社員)
2 ○ 会社勤務(管理職)
3 ○ 会社経営(経営者・役員)
4 ○ 公務員・教職員・非営利団体職員
5 ○ 派遣社員・契約社員
6 ○ 自営業(商工サービス)
7 ○ SOHO
8 ○ 農林漁業
9 ○ 専門職(弁護士・税理士等・医療関連)
10 ○ パート・アルバイト
11 ○ 専業主婦・主夫
12 ○ 学生
13 ○ 無職
14 ○ その他の職業

For all conditions:

Q2

以下の項目があなた自身にどのぐらい当てはまるかについて、もっとも適切なものを選んでください。（それぞれひとつずつ）

		まったくそう思わない	そう思わない	ややそう思わない	どちらともいえない	ややそう思う	そう思う	とてもそう思う
1	私は見返りを期待することなく、善い行いをする。	1	2	3	4	5	6	7
2	誰かが私を困難な立場に追い込んだら、私はその人にも同じことをする。	1	2	3	4	5	6	7
3	以前助けてくれた人のためなら、自分に不利益があっても構わない。	1	2	3	4	5	6	7
4	競争が私の能力を最大限に引き出すと思う。	1	2	3	4	5	6	7
5	私は普段、リスクを取ることを恐れない。	1	2	3	4	5	6	7
6	周りの人間は善意をもって生きていると思う。	1	2	3	4	5	6	7
7	力の弱い者は力の強い者に依存すべきであると思う。	1	2	3	4	5	6	7
8	この質問には、どちらともいえない、と回答してください。	1	2	3	4	5	6	7

次へ

For Low Reward×By Leader condition:

以下のシナリオ(仮想的な状況)をよく読んで、後の質問にお答えください。
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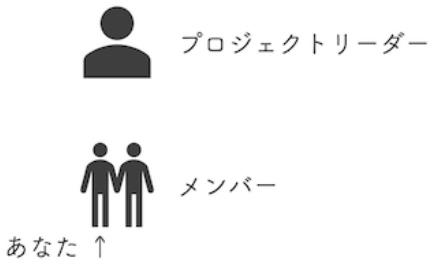
■ このプロジェクトの開始前、**あなたのチームのリーダーは、このプロジェクトが得るであろう収益を『リーダー自身に 70%、あなたともう一人のメンバーにそれぞれ 15%ずつ配分する』と決めました。**この約束は絶対に破られることはありません。

■ このプロジェクトが終わり次第このチームは解散し、今後同じメンバーと共に働く機会はありません。



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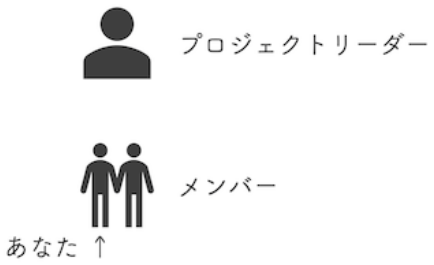

For Low Reward×By Management condition:

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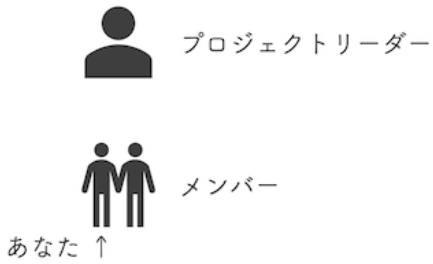

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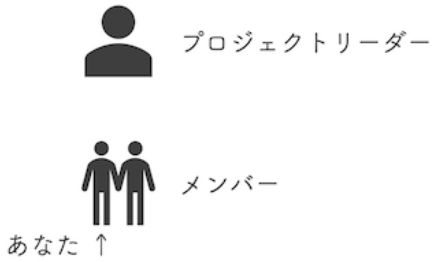

For all condition:

Q3
あなたはこのリーダーのもとで、このプロジェクトに対して、どの程度努力すると想像しますか。
左端(0点)は「最低限の努力」を意味し、右端(100点)は「最大限の努力」を意味します。
あなたがこのプロジェクトに対してどれだけ努力すると想像するか、ゲージを動かして示してください。
※ゲージをクリックするとつまみが表示されます。

最低限の努力　　最大限の努力
0　　100

次へ

Q4
先ほどのシナリオにおいて、あなたがこのプロジェクトから受け取る報酬は、収益の何%でしたか。

1 ○ 10%
2 ○ 15%
3 ○ 30%
4 ○ 50%

次へ

Q5
先ほどのシナリオにおいて、リーダーおよびあなたへの報酬配分は、誰によって決められましたか。

1 ○ 組織のトップが決めた
2 ○ リーダー自身が決めた

次へ

For all conditions:

Q6

先ほどのシナリオの中に登場したリーダーについて、あなたはどのような人物だと想像しますか?(それぞれひとつずつ)

		まったくそう思わない	そう思わない	ややそう思わない	どちらともいえない	ややそう思う	そう思う	とてもそう思う
1	先ほどのシナリオに登場したリーダーは、利己的な人物であると想像した。	1○	2○	3○	4○	5○	6○	7○
2	先ほどのシナリオに登場したリーダーは、プロジェクトを進める上での能力が高い人物だと想像した。	1○	2○	3○	4○	5○	6○	7○
3	先ほどのシナリオに登場したリーダーは、プロジェクトに対して多大な努力を払う人物だと想像した。	1○	2○	3○	4○	5○	6○	7○
4	先ほどのシナリオに登場したリーダーは、カリスマ性のある人物だと想像した。	1○	2○	3○	4○	5○	6○	7○
5	先ほどのシナリオに登場したリーダーは、独裁的にプロジェクトを進めるだろうと想像した。	1○	2○	3○	4○	5○	6○	7○
6	先ほどのシナリオに登場したリーダーは、プロジェクトの見通しがわかっている人物だと想像した。	1○	2○	3○	4○	5○	6○	7○
7	先ほどのシナリオに登場したリーダーは、男性であると想像した。	1○	2○	3○	4○	5○	6○	7○