Sustainable Organizations*

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Abstract

We develop a theory of stakeholder governance to examine how pro-social stakeholders influence organizations. We show that changes in pro-social preferences can generate unexpected outcomes by shifting control rights: more pro-social stakeholders may reduce sustainability, while less pro-social ones might enhance it. The key insight of our analysis is that a top-down approach to addressing sustainability concerns consistently improves organizational sustainability, while a bottom-up approach can harm it. We also uncover an asymmetry in how green and brown principals approach compensation and delegation since only green principals can exploit the public good nature of social payoffs. These findings have implications for manager-employee dynamics, investor-entrepreneur relationships, and board-CEO interactions.

Keywords: Sustainability, ESG, stakeholders, delegation of authority, control rights, corporate governance.

JEL Classifications: D23, G30, L20, Q56.

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Organizations today face mounting pressure to address environmental and social challenges, leading to increasing polarization between stakeholders and posing fundamental challenges for governance. While some stakeholders demand bold sustainability initiatives, others contend that such efforts compromise organizational performance and extend beyond the proper scope of business. This divide raises critical questions about organizational governance: How do stakeholders' conflicting pro-social preferences shape sustainability efforts? What role does organizational hierarchy play in resolving these conflicts? And how should organizations navigate the increasing polarization between those prioritizing social and environmental impact and those focused primarily on financial returns?

To address these questions, we develop a theory of stakeholder governance and analyze how diverging pro-social preferences of stakeholders affect organizations. In our model, the owner (principal) and the manager (agent) collaborate on implementing a project. The owner, who is the controlling stakeholder, can opt for either a green or brown project but incurs an implementation cost. To circumvent this cost, the owner can delegate control rights and allow the manager to select and implement the project. While delegating control rights allows the owner to avoid the implementation cost, it also enables the manager to pursue their preferred project, even if it conflicts with the owner's wishes. This creates a trade-off: while delegation allows the owner to avoid the implementation cost, it also means relinquishing control over project choice. To mitigate this potential conflict of interest with the manager, the owner can offer an equity stake to the manager, which comes at a cost as it dilutes their own ownership.

Our analysis yields two key insights about how the owner's and manager's pro-social preferences affect the organization's sustainability efforts. First, we demonstrate a fundamental asymmetry between top-down and bottom-up approaches to shaping an organization's sustainability. Specifically, changes in the owner's pro-social preferences have the intended effect: stronger pro-social preferences increase sustainability, while weaker ones reduce it. In contrast, changes in the manager's pro-social preferences can have unintended effects, as they may prompt the owner to reallocate control rights: a more pro-social manager may reduce sustainability, and a less pro-social one can enhance it. Second, we highlight a striking difference in how green and brown owners approach delegation and compensation decisions. Green owners (who prefer the green project) can ensure its implementation by delegating control rights while aligning incentives with the manager by offering no equity compensation. In contrast, brown owners (who favor the brown project) may need to provide equity compensation to align incentives if they choose to delegate control rights.

In our model, the asymmetry in contracts offered by green and brown owners stems from the public good nature of social payoffs. Green owners can exploit this feature to achieve perfect alignment of incentives at zero cost: by offering no equity stake, they ensure that a manager always weakly prefers to implement the green project. In contrast, brown owners face a fundamental limitation—since their preferred project primarily generates monetary payoffs, a private and rival good, they cannot achieve costless alignment. To shift the manager's preferences toward the brown project, they must share these monetary payoffs through equity compensation, creating a trade-off between the benefits of delegation and the costs of incentive alignment. Thus, our analysis reveals a striking asymmetry: while brown owners face the classic trade-off of balancing delegation benefits with incentive costs, green owners can achieve their highest possible utility by simply delegating control rights and leveraging the public good nature of social payoffs. This distinction between green and brown owners contrasts with standard principal-agent models, where resolving conflicts of interest always requires providing financial incentives such as equity compensation for managers (e.g., Shleifer and Vishny, 1997).

Our framework challenges the conventional wisdom that ESG-linked compensation is required to effectively incentivize improvements in an organization's sustainability. We demonstrate that such compensation—based on the organization's social outcome—is never optimal for owners. Green owners can align incentives without sharing ownership by leveraging the public good nature of social payoffs, while brown owners have no reason to encourage green projects through social compensation. These findings call into question common policy recommendations that ESG-linked compensation may be necessary to promote sustainability (e.g., Hong et al., 2016; Flammer et al., 2019), suggesting instead that such compensation may increase managerial rents without achieving owners' objectives (e.g., Bebchuk and Tallarita, 2022). Additionally, our analysis reveals that more pro-social managers may extract larger rents through higher equity compensation even without higher ability. This happens because brown owners must offer stronger monetary incentives to offset managers' stronger pro-social preferences. Our findings also challenge recent proposals advocating for expanded shareholder voting rights on environmental and social issues (e.g., Hart and Zingales, 2017), as our model demonstrates that pro-social owners can more efficiently achieve their desired outcomes through delegation rather than direct control.

A central insight of the paper is the asymmetry between top-down and bottom-up approaches to sustainability, arising from the distinct ways in which the owner's and manager's pro-social preferences interact with control rights. Specifically, a brown owner's delegation decision crucially depends on the conflict of interest between the two stakeholders. A manager with stronger pro-social preferences may lose control rights to a brown owner, ultimately reducing the organization's sustainability. Conversely, a less pro-social manager may gain control rights from an even less pro-social brown owner, increasing the organization's sustainability. As a result, more pro-social managers can reduce sustainability, while less pro-social managers can enhance it. In contrast, changes in the owner's pro-social preferences always yield the intended outcome: a more pro-social owner increases sustainability, while a less pro-social owner decreases it. This asymmetry between how top-down and bottom-up approaches impact an organization's sustainability suggests that initiatives targeting ownership structure might be more effective in shaping an organization's sustainability than efforts to influence managerial behavior. Crucially, our analysis demonstrates that even small shifts in stakeholder preferences can lead to significant changes in sustainability outcomes through changes in control rights, underscoring the pivotal role of governance structure in determining organizations' sustainability efforts.

Our framework also challenges traditional perspectives on corporate sustainability and governance. Contrary to the view that managerial engagement in sustainability generates private benefits at the expense of shareholders (e.g., Friedman, 1970), our model shows that owners may rationally delegate control rights to managers, even when this leads to greater sustainability than owners prefer. This delegation occurs because it spares the owner from bearing the implementation cost, making it the most efficient choice from their perspective, even though the resulting outcome is more sustainable than what the owner would have chosen directly.

While we primarily focus on owner-manager relationships, our findings have broader applicability to various organizations, including NGOs and universities, as well as other principal-agent settings, including manager-employee interactions, investor-entrepreneur relationships, and board-CEO dynamics. The model provides a theoretical foundation for understanding recent trends in sustainable investing and governance, yielding several testable predictions. Specifically, our framework suggests that principals who prioritize financial returns are more likely to restrict agents' control rights in response to sustainability conflicts, measurable through CEO turnover and changes in board composition, compared to principals who prioritize social and environmental outcomes. We also predict a non-monotonic relationship between equity-based compensation and both principals' and agents' pro-social preferences, with control rights playing a crucial role in mediating this relationship. Most importantly, our model helps reconcile mixed empirical evidence on the impact of pro-social stakeholders, such as investors, by showing how stakeholders' influence depends on their position in the organizational hierarchy. For example, the same stakeholder entity may have different effects when acting as a principal versus an agent. These implications explain several empirical patterns and provide a rich set of testable predictions for future empirical research on organizational sustainability and governance.

Our paper presents a novel theory of stakeholder society (e.g., Tirole, 2001; Allen et al., 2015; Magill et al., 2015; Chang and Hong, 2024) based on the allocation of control rights and contributes to several strands of the literature.

First, we contribute to the literature on pro-social stakeholders and corporate governance (e.g., Matsusaka and Shu, 2021; Gollier and Pouget, 2022; Jin and Noe, 2023; Malenko and Malenko, 2023; Döttling et al., 2024; Levit and Bond, 2024; Levit et al., 2024).[1] A related literature focuses on pro-social investors (e.g., Heinkel et al., 2001; Chowdhry et al., 2019; Hart and Zingales, 2022; Green and Roth, 2025; Landier and Lovo, 2025; Oehmke and Opp, 2024; Gupta et al., 2025). While corporate governance and financial contracting research has extensively studied control rights (e.g., Aghion and Bolton, 1992; Burkart et al., 1997), their role in the presence of pro-social stakeholders remains largely unexplored. By examining control rights, we demonstrate their fundamental role in shaping how pro-social stakeholders influence corporate sustainability. Our analysis reveals two key insights. First, we identify asymmetries between green and brown owners in their ability to align stakeholder incentives through delegation and compensation. Second, we distinguish between top-down and bottom-up approaches to sustainability, showing how they differ in their effects on governance structures and sustainability outcomes. Our findings yield novel insights into shareholder-manager conflicts, investor-entrepreneur relationships, and board-CEO interactions, generating several novel testable empirical predictions.

Second, we contribute to the emerging literature on corporate polarization (e.g., Fos et al.,

[1] See Malenko (2024) for a survey on corporate governance.

2022; Colonnelli et al., 2023; Ferreira and Nikolowa, 2023; Kempf and Tsoutsoura, 2024) by examining how diverging stakeholder preferences affect corporate governance. Specifically, we show that greater polarization can increase or decrease an organization's sustainability due to shifts in control rights.

Third, we add to the theoretical literature on managerial compensation and corporate public good provision (e.g., Bucourt and Inostroza, 2024; Chaigneau and Sahuguet, 2024). While prior research focuses primarily on compensation design, we examine how delegation and compensation jointly shape organizational outcomes. Our analysis uncovers novel interactions between these mechanisms—specifically, green owners can achieve their objectives through delegation alone, without sharing equity, by leveraging the public good nature of social payoffs. Additionally, we extend this literature by incorporating managers' pro-social preferences and demonstrating how these preferences influence optimal contracts, leading to new predictions about the relationship between pro-social preferences and managerial pay structures. Notably, our findings reveal that ESG-linked compensation is never optimal in our framework; instead, even pro-social principals rely exclusively on delegation and standard financial incentives.

Fourth, we contribute to the literature on the delegation of authority (e.g., Aghion and Tirole, 1997; Dessein, 2002).[2] Specifically, we introduce pro-social preferences, public good provision, and optimal compensation.[3] Our analysis yields novel insights into the differences between green and brown owners' delegation and compensation decisions. Moreover, we highlight a key distinction between bottom-up and top-down approaches to organizational sustainability.

I Model

We consider an organization composed of two risk-neutral stakeholders: an owner ($j = O$) and a manager ($j = M$).[4] The organization implements one of two projects, which differ in their social and monetary payoffs. The timeline consists of three periods, with no time

[2] See Bolton and Dewatripont (2013) for a survey.

[3] While some studies examine both delegation and compensation (e.g., Athey and Roberts, 2001; Prendergast, 2002; Bester and Krähmer, 2008; Dessein et al., 2010; Rantakari, 2013; Chen, 2024), they focus on traditional agency problems.

[4] As we discuss in Section V, our framework also applies to other stakeholder relationships, such as boards and CEOs, investors and entrepreneurs, or managers and employees.

discounting. At time zero, the owner decides whether to delegate control rights to the manager and whether to offer the manager an equity-based compensation package. At time one, the manager exerts effort, which affects the probability of identifying viable projects. At time two, one of the stakeholders chooses and implements a project.

The organization's output is a pair (π, s), where π and s represent the monetary and the social payoff, respectively. There are two viable projects: green ($k = G$) and brown ($k = B$). The green project generates a higher social payoff s_k but a lower monetary payoff π_k than the brown project, such that $\pi_B > \pi_G > 0$ and $s_G > s_B$. We denote the differences between the projects' payoffs as $\Delta\pi = \pi_G - \pi_B < 0$ and $\Delta s = s_G - s_B > 0$. In addition to these viable projects, there exists a third project that generates a large loss, and therefore, no stakeholder would implement this project. Importantly, we remain agnostic about whether the green or brown project maximizes social welfare. This allows our framework to accommodate both scenarios where a more sustainable organization enhances social welfare and where it may reduce it.

Stakeholder j's utility when project (π, s) is implemented is given by

$$u_j(\pi, s) = \beta_j \pi + \gamma_j s,$$

where $\gamma_j \geq 0$ captures the stakeholder's pro-social preferences and $\beta_j \geq 0$ represents the stakeholder's equity stake.[5] When indifferent between the two projects, a stakeholder chooses the project preferred by the other stakeholder.[6] This preference formulation captures the extensive empirical evidence that stakeholders often exhibit pro-social preferences and that these preferences can vary significantly across individuals (e.g., List, 2009; Riedl and Smeets, 2017; Bauer et al., 2021; Humphrey et al., 2021; Baker et al., 2022; Heeb et al., 2023; Guenzel et al., 2023; Bonnefon et al., 2025; Giglio et al., 2025).

The manager faces an informational friction in identifying viable projects as in Aghion and Tirole (1997). If uninformed, the manager cannot distinguish between the green, brown, and loss-making projects. Since the loss-making project results in a large loss, the manager would never implement a project without first acquiring information. In contrast, the owner

[5] Since we allow for a negative social payoff ($s_k < 0$) and include an implementation cost c (see below), a stakeholder's utility could be negative. In such cases, we implicitly assume that outside options are sufficiently low to ensure participation. However, this is merely a level effect that could be addressed through an appropriate rescaling of utility levels without affecting our results.

[6] If both stakeholders are indifferent, we assume that the organization implements the green project.

faces no such friction and can always identify and implement their preferred project. As a result, an uninformed manager must rely on the owner's superior information and will implement the owner's preferred project. At time one, the manager chooses an effort level $q_M \in [0,1]$, determining the probability of becoming informed about the projects' payoffs. However, effort is costly, imposing a quadratic cost of $\frac{\phi_M}{2} q_M^2$ on the manager, where $\phi_M > 0$.

The manager's incentives to generate information depend on the contract offered by the owner at time zero, denoted by (d, β_M). This contract consists of a delegation decision, $d \in \{O, M\}$, determining whether control rights remain with the owner ($d = O$) or are delegated to the manager ($d = M$), and the manager's equity stake in the organization, $\beta_M \in [0,1]$.[7] Consistent with our framework, Nagar (2002) documents that real-world employment contracts typically include both delegation of control rights and equity-based compensation.

The manager receives a fraction β_M of the organization's monetary payoff π. The equity stake can be implemented, for example, through non-voting shares, allowing cash flow and control rights to be separated. The remaining share, $\beta_O = 1 - \beta_M$, is retained by the owner. Increasing the manager's equity stake strengthens their incentives to choose the brown project over the green project by making their utility more sensitive to monetary performance. However, this comes at the cost of reducing the owner's equity stake. Following the incomplete contracting literature (e.g., Grossman and Hart, 1986), we assume that project choice is non-contractible. We focus on equity-based compensation as it is widely used in practice (e.g., Frydman and Jenter, 2010). However, allowing for contracts that compensate the manager directly based on project choice while ensuring limited liability would lead to similar economic trade-offs and results.[8]

The owner can either retain control rights ($d = O$) or delegate them to the manager ($d = M$), determining which stakeholder has formal authority to choose the project at time two.[9] However, formal control rights do not always translate into effective control.

[7] Our model assumes a fixed owner-manager match and does not consider personnel turnover. In practice, hiring and firing managers entails costs, including the loss of firm-specific expertise and organizational knowledge (e.g., Taylor, 2010).

[8] Under such contracts, the owner would optimally offer no compensation to incentivize the manager to implement the green project, similar to the zero equity compensation in our framework (Proposition 1). To incentivize the brown project, the owner would offer higher compensation for the brown project than for the green project, replicating the effect of an equity stake in our framework (Proposition 2).

[9] We assume that the owner cannot renege on the delegation decision at time two. This assumption clearly holds if control rights are contractually agreed on. If not, the assumption can be justified if reneging

In particular, when the manager holds control rights but is uninformed, they must rely on the owner's superior information, giving the owner effective control over project choice. We assume the owner delegates control rights when indifferent between delegation and retention.

The stakeholder with control rights not only chooses but also implements the project, incurring an implementation cost $c > 0$ that captures, for instance, the cost of time and effort spent on implementation. By delegating control rights, the owner can shift this cost to the manager.[10]

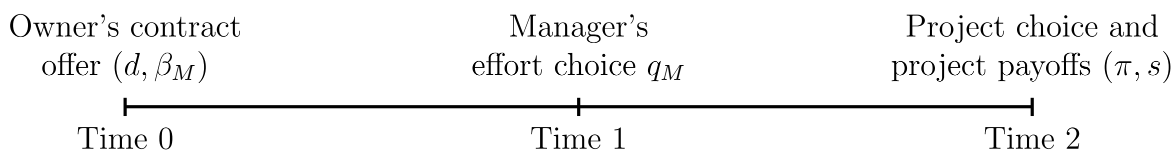

Figure 1: **Model timeline.**

Figure 1 summarizes the timeline of the model: at time 0, the owner offers a contract (d, β_M) to the manager, specifying both delegation and the equity stake; at time 1, the manager chooses their effort level q_M; at time 2, a project is chosen and implemented, and all payoffs are realized.

Our analysis proceeds as follows. First, we describe the owner's contracting problem (Section II) and investigate how the manager's and owner's pro-social preferences shape the optimal contract (Section III). Next, we study the implications for the organization's sustainability (Section IV). Finally, we discuss the empirical implications of our analysis (Section V) and conclude (Section VI).

II Owner's Contracting Problem

In this section, we characterize the owner's contracting problem. Using backward induction, we first determine each stakeholder's project choice at time two. We then determine the manager's effort choice at time one. Finally, we characterize the owner's contracting problem at time zero.

imposes a reputational cost greater than $u_O(\pi_O, s_O) - c - u_O(\pi_M, s_M)$. Baker et al. (1999) micro-found such a reputational cost in a repeated delegation of authority model.

[10]We assume that the implementation cost is the same for the owner and the manager. However, our results remain robust when this assumption is relaxed, as long as the manager's participation constraint is satisfied—an assumption we maintain throughout.

A Project Choice

At date two, an informed stakeholder $j \in \{O, M\}$ with control rights chooses the green project rather than the brown project if and only if

$$\underbrace{\beta_j \pi_G + \gamma_j s_G - c}_{\textit{Utility from green project}} > \underbrace{\beta_j \pi_B + \gamma_j s_B - c}_{\textit{Utility from brown project}} \quad \Leftrightarrow \quad \gamma_j > -\beta_j \frac{\Delta\pi}{\Delta s} \geq 0.$$

This inequality shows that a stakeholder will implement the green project if and only if their pro-social preferences exceed $-\beta_j \frac{\Delta\pi}{\Delta s}$. Stakeholders with stronger pro-social preferences are more willing to trade off lower monetary payoffs in favor of higher social payoffs, making them more likely to choose the green project. For example, a manager with stronger pro-social preferences may be more willing to accept a lower wage or bonus if the organization generates a higher social payoff, in line with the findings of Krueger et al. (2022). Similarly, an owner with stronger pro-social preferences is willing to accept a lower financial return in exchange for a higher social return, consistent with empirical evidence (e.g., Riedl and Smeets, 2017; Bauer et al., 2021; Humphrey et al., 2021; Baker et al., 2022; Heeb et al., 2023; Bonnefon et al., 2025; Giglio et al., 2025).

Project choice also depends on the stakeholder's endogenous equity stake β_j. Specifically, a higher equity stake β_j strengthens the stakeholder's incentives to choose the brown project. Since the monetary payoffs are divided between the owner and manager, such that $\beta_O + \beta_M = 1$, increasing one stakeholder's equity stake necessarily reduces the other's, leading to opposing effects on their incentives.

Our framework distinguishes between monetary payoffs, which are a rival good that must be divided between stakeholders through equity stakes, and social payoffs, which have a public good nature—both stakeholders fully benefit from the organization's social impact regardless of ownership. This distinction between rival and non-rival payoffs proves central to our analysis.

Let (π_j, s_j) represent stakeholder j's preferred project. When neither the owner nor the manager has pro-social preferences, $\gamma_O = \gamma_M = 0$, their preferred projects coincide, and no conflict of interest arises, regardless of their equity stakes.[11] Therefore, a necessary condition

[11] If $\beta_M = 0$, the manager is indifferent between the green and brown project and will choose the owner's preferred project. As we demonstrate below, in equilibrium, the owner would never give up all equity, such that $\beta_O > 0$.

for their preferred projects to differ and for a conflict of interest to arise, $(\pi_O, s_O) \neq (\pi_M, s_M)$, is the presence of pro-social preferences, $\gamma_O > 0$ or $\gamma_M > 0$.

B Managerial Effort

Given the owner's and manager's preferred projects, we can determine the manager's expected utility at time one, which determines their effort to become informed. Figure 2 illustrates how project choice at time two depends on the allocation of control rights and the manager's information acquisition. When the manager holds control rights ($d = M$) and is informed, they implement their preferred project (π_M, s_M). However, if the manager is uninformed, they follow the owner's recommendation and implement the owner's preferred project (π_O, s_O), giving the owner effective control. When the owner holds control rights ($d = O$), the owner implements their preferred project (π_O, s_O), regardless of whether the manager is informed.

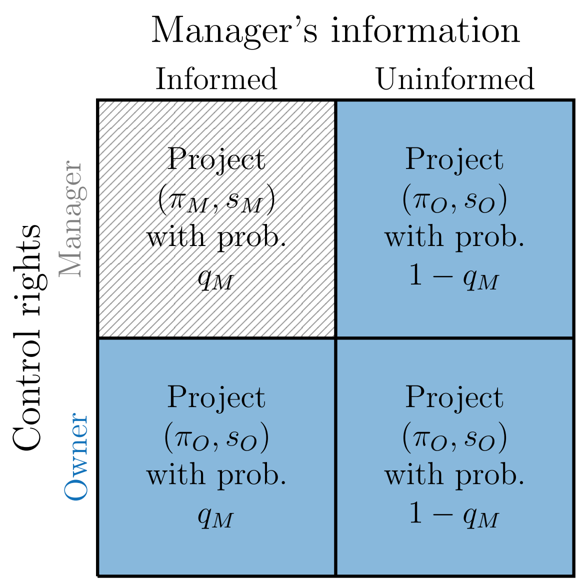

Figure 2: **Control rights and effective control.** This figure summarizes which project is implemented at time two and the probability of the different cases as a function of the allocation of control rights and the manager's information. The background color indicates who holds effective control, where blue-filled (gray-shaded) indicates that the owner (manager) has effective control.

The manager's expected utility at time one is given by

$$U_M(q_M, d, \beta_M) = \begin{cases} u_M(\pi_O, s_O) - \frac{\phi_M}{2} q_M^2, & \text{if } d = O, \\ q_M u_M(\pi_M, s_M) + (1 - q_M) u_M(\pi_O, s_O) - \frac{\phi_M}{2} q_M^2 - c, & \text{if } d = M. \end{cases} \quad (1)$$

This expression captures how the manager's utility depends on delegation d and effort q_M. When the owner holds control rights ($d = O$), the manager's effort does not affect project choice. In contrast, when the manager holds control rights ($d = M$), the probability of the owner having effective control decreases to $1 - q_M$, while the probability of the manager having effective control increases to q_M. Additionally, in this case, the manager incurs the implementation cost c. Regardless of the delegation decision, exerting effort imposes a cost on the manager.

The manager's equilibrium effort $q_M(d, \beta_M)$ maximizes their utility $U_M(q_M, d, \beta_M)$ and therefore depends on the contract (d, β_M). Equation (1) implies that the manager exerts no effort when the owner retains control rights, $q_M(O, \beta_M) = 0$, since effort cannot influence project choice. However, when the owner delegates control rights, the manager's optimal effort is:

$$q_M(M, \beta_M) = \min \left\{ \frac{u_M(\pi_M, s_M) - u_M(\pi_O, s_O)}{\phi_M}, 1 \right\}. \quad (2)$$

The manager exerts effort, $q_M(M, \beta_M) > 0$, if and only if there is a conflict of interest: $(\pi_O, s_O) \neq (\pi_M, s_M)$. That is, the manager will seek to become informed if their preferred project differs from the owner's preferred project. In the absence of such a conflict, the manager exerts no effort and relies on the owner's superior information, thereby implementing the owner's preferred project, which coincides with the manager's preferred project.

The manager's equity stake β_M affects their incentives to exert effort in two ways. First, when there is a conflict of interest, $(\pi_O, s_O) \neq (\pi_M, s_M)$, varying the manager's equity stake β_M influences their utility difference between the stakeholders' preferred projects, $u_M(\pi_M, s_M) - u_M(\pi_O, s_O) = \beta_M(\pi_M - \pi_O) + \gamma_M(s_M - s_O)$. In addition, varying β_M may alter the manager's and owner's preferred projects, potentially resolving the conflict of interest. For example, when a pro-social owner offers the manager a lower equity stake, it can shift the manager's preference toward the green project, aligning their interests with those of the owner.

C Contracting Problem

At time zero, the owner offers a contract (d, β_M) to the manager. The owner's expected utility under this contract is:

$$U_O(d, \beta_M) = \begin{cases} u_O(\pi_O, s_O) - c, & \text{if } d = O, \\ q_M(M, \beta_M) u_O(\pi_M, s_M) + (1 - q_M(M, \beta_M)) u_O(\pi_O, s_O), & \text{if } d = M. \end{cases}$$

When the owner does not delegate control ($d = O$), they retain effective control but must bear the implementation cost c. In contrast, under delegation ($d = M$), the owner risks losing effective control with probability $1 - q_M(M, \beta_M)$ but avoids the implementation cost. This creates the fundamental trade-off in our model: the owner can avoid incurring the implementation cost through delegation but risks losing control over project choice. However, the owner can mitigate this loss of control by adjusting the manager's equity stake β_M. The owner thus selects the optimal contract (d^*, β_M^*) to maximize their utility: $\max_{(d,\beta_M) \in \{O,M\} \times [0,1]} U_O(d, \beta_M)$.

III Optimal Contracting

In this section, we study how the two stakeholders' pro-social preferences shape the optimal contract (d^*, β_M^*). We first examine how the manager's pro-social preferences γ_M influence the owner's contract offer and then study how the owner's own pro-social preferences γ_O affect this decision. This analysis provides the foundation for examining the implications of stakeholders' pro-social preferences for the organization's sustainability in Section IV.

A Manager's Pro-Social Preferences

To understand how the manager's pro-social preferences γ_M affect contracting, we distinguish between two types of owners based on their pro-social preferences. A green owner with strong pro-social preferences ($\gamma_O \geq -\frac{\Delta\pi}{\Delta s}$) chooses the green project even when retaining full ownership ($\beta_O = 1$), while a brown owner with weak pro-social preferences ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$) selects the brown project under the same ownership conditions. This distinction is crucial for understanding the design of the optimal contract.

We first study the contract offered by a green owner ($\gamma_O \geq -\frac{\Delta\pi}{\Delta s}$).

Proposition 1 (Optimal Contract with Green Owner)**.** *A green owner delegates control rights to the manager, $d^* = M$, and offers no equity stake, $\beta_M^* = 0$.*

In our model, a green owner achieves their highest possible utility when the organization implements the green project, and they do not incur the implementation cost. The owner can achieve this outcome by delegating control rights while retaining full equity ownership. Specifically, the green owner leverages the public good nature of social payoffs to achieve alignment of incentives. This contract induces the manager to implement the green project by costlessly aligning incentives: without an equity stake, the manager weakly prefers the green project.[12] As a result, the green owner optimally delegates control rights. As we demonstrate below, this outcome is distinct from what occurs with brown owners, who face a fundamental trade-off as they cannot costlessly align incentives.

This mechanism highlights how the interaction between stakeholders' pro-social preferences and the trade-off between monetary and social payoffs generates new insights for the governance of organizations. Unlike traditional delegation models, where conflicts of interest arise due to private benefits, our framework shows that when stakeholders face trade-offs between monetary and social payoffs, green owners can achieve their objectives through delegation while retaining full equity ownership. This finding contrasts sharply with classic principal-agent models, where resolving conflicts of interest always requires providing financial incentives such as equity compensation for managers (e.g., Shleifer and Vishny, 1997). The distinction arises because pro-social owners can leverage the public good nature of social payoffs to align incentives without sacrificing ownership—a feature unique to our setting, where organizations pursue both monetary and social objectives.

Importantly, our framework, while stylized and necessarily abstracting from the complexities of organizational dynamics, challenges the notion that ESG-linked compensation is an effective solution for incentivizing sustainability. Proposition 11 in Appendix D formalizes this intuition, showing that offering compensation based on the organization's social payoff s in addition to the equity stake is never optimal for the owner. Our analysis thus reveals two key points. First, a green owner can leverage the public good nature of social payoffs to

[12]Since the manager's and owner's preferred project coincide, $(\pi_M, s_M) = (\pi_O, s_O)$, the manager has no incentives to exert costly effort: $q_M(M, 0) = 0$.

align incentives without having to share ownership and, therefore, does not require compensation tied to the organization's social performance. Second, a brown owner does not want to incentivize the manager to undertake the green project and, therefore, optimally avoids ESG-linked compensation. These findings challenge common policy recommendations from prior research (e.g., Hong et al., 2016; Flammer et al., 2019) that ESG-linked compensation may be inherently necessary for promoting sustainability. In contrast, we show that introducing ESG-linked compensation may actually increase total compensation for managers without achieving owners' objectives, echoing concerns raised by Bebchuk and Tallarita (2022) about the potential drawbacks of such compensation structures.

Unlike a green owner, a brown owner ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$) faces a fundamental trade-off when using equity to align incentives. When delegating control rights without offering the manager an equity stake ($\beta_M = 0$), the manager weakly prefers the green project, while the owner prefers the brown project. To reduce this conflict of interest, the owner can increase the manager's equity stake. However, this alignment of incentives comes at a cost: the owner's own equity stake decreases as the manager's equity stake increases. Proposition 2 characterizes how a brown owner optimally balances these competing forces.

Proposition 2 (Optimal Contract with Brown Owner)**.** *There exist three thresholds $\underline{\gamma}_M$, $\bar{\gamma}_M$, and $\hat{\gamma}_M$, where $\underline{\gamma}_M \leq \bar{\gamma}_M \leq \hat{\gamma}_M$,*[13] *such that a brown owner:*

(*i*) *Delegates control rights to the manager, $d^* = M$, if and only if the manager is not too pro-social, that is, $\gamma_M \leq \hat{\gamma}_M$.*

(*ii*) *Offers a positive equity stake to the manager, $\beta_M^* > 0$, if and only if delegating control rights and the manager is pro-social but not too pro-social, that is, $\gamma_M \in (\underline{\gamma}_M, \bar{\gamma}_M]$.*

The delegation result in part (*i*) of Proposition 2 highlights a crucial distinction: in contrast to green owners, brown owners cannot, in general, achieve their highest possible utility. While delegating control rights saves them from bearing the implementation cost, it also leads to a loss of control over project choice, which may require sharing costly equity ownership to incentivize the manager. Thus, our analysis uncovers a striking asymmetry in how green and brown owners face these trade-offs. While brown owners must balance the competing pressures of monetary incentives and pro-social preferences, green owners can

[13] Note that we can have $\hat{\gamma}_M = \infty$ when the delegation cost c is sufficiently high, in which case the owner always delegates control rights.

achieve their highest possible utility simply by delegating control rights. This asymmetry stems from the monetary-social payoff tension central to our model: green owners align incentives costlessly through a zero equity stake because they can leverage the public good nature of social payoffs, while brown owners must use costly equity compensation.

Furthermore, we demonstrate in Proposition 10 in Appendix C that delegation and equity compensation serve as complements in our framework. The owner's ability to offer equity compensation increases the likelihood of delegation, while the option to delegate control enhances the effectiveness of equity compensation. This complementarity provides an important insight into the behavior of green owners: their ability to achieve costless alignment through a zero equity stake enables them to always delegate control rights. This result fundamentally distinguishes our framework from traditional delegation models.

Part (*ii*) of Proposition 2 reveals a non-monotonic relationship between managerial pro-social preferences and equity compensation. When the manager has weak pro-social preferences ($\gamma_M < \underline{\gamma}_M$), they exert minimal effort even without equity incentives, so offering compensation is unnecessary under delegation. When the manager has intermediate pro-social preferences ($\gamma_M \in (\underline{\gamma}_M, \bar{\gamma}_M]$), a brown owner who delegates offers a positive equity stake to partially align incentives. Finally, when the manager is highly pro-social ($\gamma_M > \bar{\gamma}_M$), the owner offers no equity stake either because the cost of providing sufficient equity to influence the manager's effort and project choices becomes prohibitively high under delegation or because the owner chooses not to delegate control rights in the first place.

Proposition 3 (Manager's Equity Stake with Brown Owner under Delegation)**.** *The manager's equity stake is continuous and strictly increasing in the manager's pro-social preferences γ_M whenever it is positive, $\beta_M^* > 0$.*

Proposition 3 shows that the manager's equity stake increases monotonically with their pro-social preferences when compensation is positive. This reflects the owner's need to counteract the manager's increasing pro-social preferences by offering stronger monetary incentives. Figure 3 visually captures this relationship, showing both the monotonic increase in the equity stake when compensation is positive and the potential for discontinuous drops to zero compensation. These results emphasize that while a more pro-social manager receives a higher equity stake when compensation is positive, the overall relationship between pro-social preferences and compensation is non-monotonic.

Proposition 3 demonstrates that pro-social preferences can lead to managerial rent extraction through equity compensation. More pro-social managers may receive larger equity pay packages, which increases their compensation without necessarily reflecting higher managerial ability. Crucially, this rent extraction emerges because the owner optimally chooses the contract to manage the conflict of interest with the manager. Our findings, therefore, contribute to the emerging debate on managerial rent extraction in the presence of social and environmental concerns (e.g., Bebchuk and Tallarita, 2022) by linking them to managerial pro-social preferences.

Proposition 4 (Equilibrium Effort Level under Brown Owner)**.** *When a brown owner offers a positive equity stake, $\beta_M^* > 0$, the manager's equilibrium effort level $q_M(M, \beta_M^*)$ weakly increases in the manager's pro-social preferences γ_M, strictly in some cases.*

Proposition 4 reveals how the manager's effort evolves in response to their pro-social preferences when holding control rights. Without equity compensation, the manager's effort increases with their pro-social preferences, potentially reaching the maximum level. However, when a brown owner offers positive equity compensation, the manager's effort continues to increase with pro-social preferences, even though a larger equity stake is intended to align the manager's interests with the brown owner. This means that a more pro-social manager exerts greater influence on the organization by exerting more effort even though they receive larger equity compensation.

This result also implies that the relationship between the manager's pro-social preferences and their effort is non-monotonic. Specifically, when the owner delegates control rights, the manager's effort increases with their pro-social preferences (for values of $\gamma_M \leq \hat{\gamma}_M$). However, once the manager's pro-social preferences surpass the delegation threshold ($\gamma_M > \hat{\gamma}_M$), the owner withdraws control rights, leading the manager's effort to drop to zero. This highlights a key turning point where the manager's preferences no longer align with the owner's interests under delegation, resulting in a dramatic shift in the manager's level of effort.

B Owner's Pro-Social Preferences

In this section, we examine how the owner's pro-social preferences, γ_O, shape the optimal contract (d^*, β_M^*). In Proposition 5, we describe the optimal contract, which we then illustrate in Figure 4.

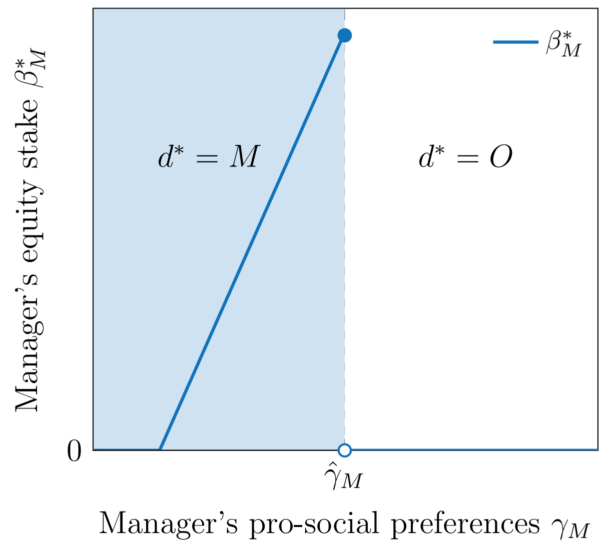

Figure 3: **Manager's pro-social preferences and optimal contract.** The figure plots the equity stake β_M^* and delegation decision d^* from Proposition 2, as a function of the manager's pro-social preferences γ_M in the case where $0 < \underline{\gamma}_M < \bar{\gamma}_M = \hat{\gamma}_M$.

Proposition 5 (Optimal Contract and Owner's Pro-Social Preferences)**.** *There exist two thresholds $\hat{\gamma}_O$ and $\bar{\gamma}_O$, where $\hat{\gamma}_O \leq \bar{\gamma}_O \leq -\frac{\Delta\pi}{\Delta s}$, such that the owner:*

(i) Delegates control rights to the manager, $d^* = M$, if and only if the owner is sufficiently pro-social, $\gamma_O \geq \hat{\gamma}_O$.

(ii) Offers a positive equity stake to the manager, $\beta_M^* > 0$, if and only if the owner is pro-social but not too pro-social, $\gamma_O \in [\hat{\gamma}_O, \bar{\gamma}_O)$.

The results in Proposition 5 mirror our earlier analysis of the role of managerial pro-social preferences. As discussed in Subsection III.A, a green owner always delegates control rights because they can perfectly align incentives at no cost by offering no equity stake and retaining full ownership. In contrast, while a brown owner may still find it optimal to delegate control rights when conflicts of interest are moderate, they may need to share ownership to better align incentives. Proposition 5 formalizes this reasoning: when the owner is sufficiently pro-social or green ($\gamma_O \geq \bar{\gamma}_O$), the owner delegates control rights and offers no equity compensation. If the owner is brown but relatively pro-social ($\gamma_O \in [\hat{\gamma}_O, \bar{\gamma}_O)$), they opt for delegation while offering a moderate equity stake to mitigate conflicts of interest. However, when the brown owner's pro-social preferences are sufficiently weak ($\gamma_O < \hat{\gamma}_O$), aligning incentives would require such a large equity stake that the owner prefers to retain

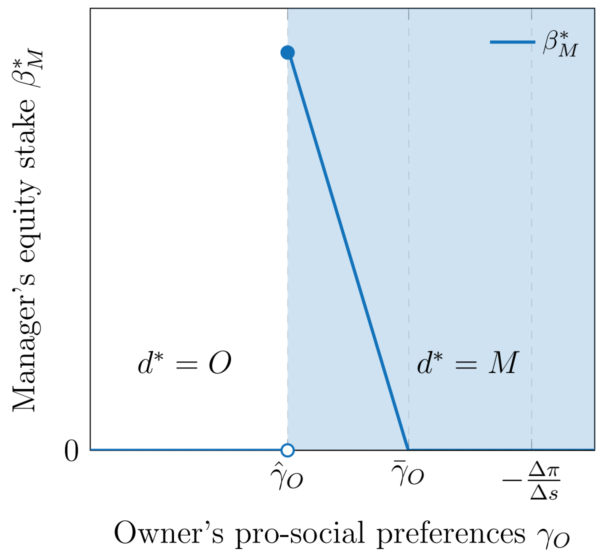

Figure 4: **Owner's pro-social preferences and optimal contract.** The figure plots the equity stake β_M^* and delegation decision d^* from Proposition 5, as a function of the owner's pro-social preferences γ_O in the case where $\hat{\gamma}_O < \bar{\gamma}_O$.

control rights despite bearing the implementation cost.

Proposition 6 (Manager's Equity Stake and Owner's Pro-Social Preferences)**.** *The manager's equity stake is continuous and weakly decreasing in the owner's pro-social preferences γ_O whenever it is positive $\beta_M^* > 0$.*

While our previous analysis demonstrated that a brown owner increases equity compensation to offset stronger managerial pro-social preferences, the relationship between the owner's pro-social preferences and equity compensation works in the opposite direction. Propositions 5 and 6 show that an owner with stronger pro-social preferences offers a lower equity stake when compensation is positive, eventually reaching zero equity compensation as their pro-social preferences become sufficiently strong. This shift toward zero equity compensation reflects the same mechanism observed with green owners: as the owner places greater value on the organization's social payoff, they can implement their preferred project through delegation while retaining a larger share of ownership.

IV Organization's Sustainability

We next study how the owner's and manager's pro-social preferences affect the organization's sustainability, which we define as the expected social payoff of the organization:

$$\mathbb{E}[\tilde{s}] = q_M s_M + (1 - q_M) s_O.$$

Here, both the manager's effort, q_M, and the social payoffs associated with the owner's and manager's preferred projects, s_O and s_M, are affected by the optimal contract (d^*, β_M^*). Higher expected social payoffs indicate a more sustainable organization, which could be measured through standard ESG metrics or reductions in carbon emissions. However, as highlighted in Section I, more sustainable organizations may not necessarily be optimal from a welfare perspective, as increased social payoffs come at the expense of reduced monetary payoffs.

A Manager's Pro-Social Preferences

In this section, we explore how the manager's pro-social preferences affect the organization's sustainability, distinguishing between green and brown owners, in line with our earlier analysis of optimal contracts.

As shown previously, a green owner ($\gamma_O \geq -\frac{\Delta \pi}{\Delta s}$) always delegates control rights and offers no equity stake (Proposition 1). This optimal contract ensures perfect alignment of incentives between the owner and manager: without equity-based incentives tied to monetary payoffs, the manager weakly prefers the green project regardless of their pro-social preferences. As a result, the green project is always implemented, leading to a constant level of the organization's sustainability, $\mathbb{E}[\tilde{s}] = s_G$, formalized in Proposition 7.

Proposition 7 (Organization's Sustainability with Green Owner)**.** *With a green owner, the organization's sustainability is independent of the manager's pro-social preferences γ_M and given by $\mathbb{E}[\tilde{s}] = s_G$.*

Our finding that green owners optimally delegate control rights while maintaining consistently high sustainability levels offers valuable insights into the ongoing debate over shareholder control in corporate sustainability policies. Recent proposals have suggested expanding shareholder voting rights on environmental and social issues, arguing that pro-social shareholders are better positioned than managers to make decisions regarding such matters (e.g., Hart and Zingales, 2017). However, our model demonstrates that when owners have strong pro-social preferences, they can achieve their desired sustainability outcomes more efficiently through delegation rather than direct control. Moreover, in contrast to the growing prevalence of ESG-related shareholder proposals (e.g., Kim et al., 2019; Chen et al., 2020; Huang et al., 2021), our model predicts that pro-social shareholders can more efficiently implement environmental and social policies by delegating control rights to managers, provided appropriate incentive schemes are in place that de-emphasize equity-based compensation. Expanding shareholder control, as in the case of increased voting rights, may not enhance sustainability and may instead create unnecessary costs for owners. These costs can be interpreted as reflecting inefficiencies arising when decisions are made by owners rather than managers—such as time costs, coordination challenges, and the loss of managerial expertise. Thus, proposals to expand shareholder control rights over sustainability could introduce inefficiencies without improving sustainability outcomes in organizations with pro-social ownership.

Under a brown owner ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$), the relationship between managerial pro-social preferences and the organization's sustainability becomes more nuanced. Brown owners face a fundamental trade-off when considering delegation: they can save on their implementation cost by transferring control rights to the manager, but this may necessitate sharing equity ownership to better align the manager's incentives with the owner's preferences. This trade-off influences both the design of the optimal contract and the organization's sustainability outcomes.

Proposition 8 (Organization's Sustainability with Brown Owner)**.** *For all $\gamma_M \neq \hat{\gamma}_M$, the organization's sustainability is weakly increasing in the manager's pro-social preferences γ_M, and strictly in some cases. The organization's sustainability weakly decreases at $\hat{\gamma}_M$, and strictly in some cases.*

As shown in Figure 5, the organization's sustainability generally improves with stronger managerial pro-social preferences γ_M, but with a critical discontinuity when the owner withdraws control rights at $\gamma_M = \hat{\gamma}_M$. This pattern arises from the interaction of several channels identified in our contracting analysis.

First, as the manager's pro-social preferences strengthen, the manager exerts more effort to gain greater effective control over project choice. In response, the owner increases the manager's equity compensation (Proposition 3), which partially reduces the manager's incentives to exert effort. However, this increase in equity compensation does not fully offset the manager's stronger pro-social preferences (Proposition 4). This results in an overall increase in the organization's sustainability through stronger managerial effort and effective control.

The positive relationship between the manager's pro-social preferences and the organization's sustainability breaks down at $\gamma_M = \hat{\gamma}_M$, where the brown owner withdraws control rights. This shift in control rights leads to a discontinuous drop in sustainability as control rights shift to the brown owner, who always implements the brown project. Figure 5 illustrates this sharp decline, showing how changes in control rights can dominate the direct effects of stakeholder preferences on sustainability.

This result also implies that a decrease in the manager's pro-social preferences at $\gamma_M = \hat{\gamma}_M$ can lead to an increase in the organization's sustainability. This happens because the change in preferences causes control rights to shift from the brown owner to the manager. Thus, a "backlash" against sustainability, captured in our model by a reduction in the manager's pro-social preferences, could actually make the organization more sustainable. Overall, our results suggest that changes in the manager's pro-social preferences can have the opposite effect on the organization's sustainability: a more pro-social manager may reduce sustainability, and a less pro-social one can enhance it.

Our analysis emphasizes the critical role of control rights in determining how pro-social preferences impact an organization's sustainability. While a growing body of literature examines sustainable investing and pro-social stakeholders, the governance dimension of control rights has been largely overlooked in this context. This is particularly surprising given the central role of control rights in corporate governance and financial contracting (e.g., Aghion and Bolton, 1992; Burkart et al., 1997). As some stakeholders increasingly demand that organizations address sustainability concerns, understanding how control rights shape the translation of these demands into organizational outcomes becomes crucial for both theory and practice.

These insights challenge traditional perspectives on corporate sustainability and governance. Contrary to the view that managerial engagement in sustainability generates private benefits at the expense of shareholders (e.g., Friedman, 1970), our model shows that owners

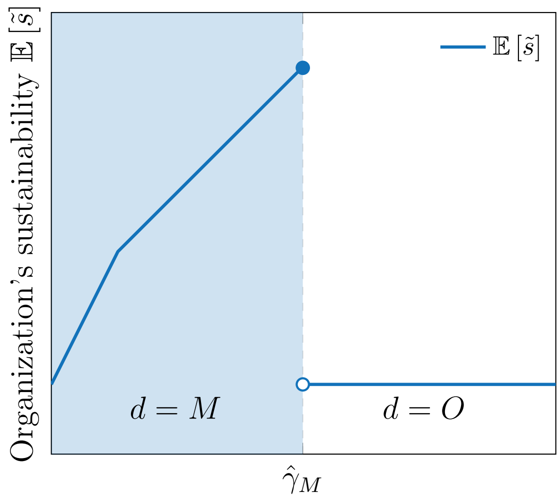

Figure 5: **Manager's pro-social preferences and organization's sustainability with Brown Owner.** The figure plots the organization's sustainability, $\mathbb{E}[\tilde{s}]$ under a brown owner, as a function of the manager's pro-social preferences γ_M.

may rationally delegate control rights to managers, even when this leads to greater sustainability than owners prefer. This delegation occurs because it saves the owner from incurring the implementation cost, making it the efficient choice from the owner's perspective, despite the outcome being more sustainable than the owner would choose directly. Our analysis of diverging stakeholder preferences also adds a novel governance perspective to the emerging literature on corporate polarization (e.g., Fos et al., 2022; Colonnelli et al., 2023; Ferreira and Nikolowa, 2023; Kempf and Tsoutsoura, 2024). In particular, our results imply that greater polarization between stakeholders within an organization can increase or decrease an organization's sustainability depending on the shifts in control rights.

B Owner's Pro-Social Preferences

We next analyze how changes in the owner's pro-social preferences influence the organization's sustainability. Our earlier analysis shows that as owners become more pro-social, they are more likely to delegate control rights and, when doing so, may offer an equity stake that they progressively reduce as they become more pro-social (Propositions 5 and 6). These changes in optimal contracts have significant implications for sustainability outcomes.

Proposition 9 (Organization's Sustainability and Owner's Pro-Social Preferences). *The* *organization's sustainability is weakly increasing in the owner's pro-social preferences* γ_O*.*

The relationship between the owner's pro-social preferences and the organization's sustainability, as shown in Figure 6, differs significantly from that of managerial preferences. Specifically, at the threshold $\hat{\gamma}_O$, the owner begins delegating control rights, resulting in an upward jump in sustainability as control shifts from the brown owner to the manager. At $\gamma_O - \frac{\Delta\pi}{\Delta s}$, the owner becomes green, further increasing sustainability as the owner's preferences align with the green project. Notably, the results indicate that a more pro-social owner always enhances the organization's sustainability, while a less pro-social owner leads to a decrease in sustainability.

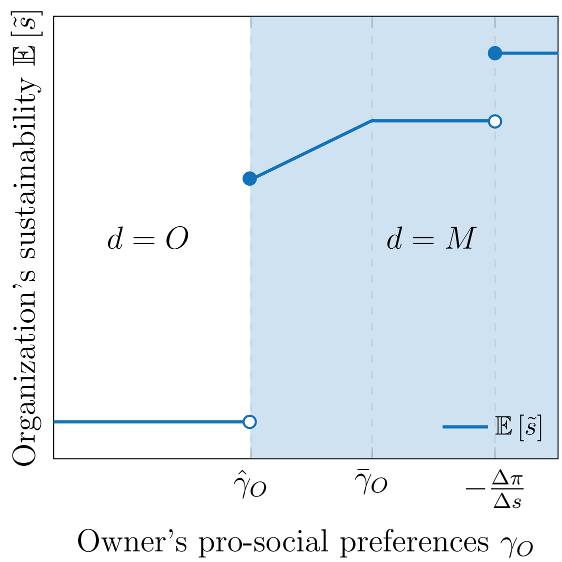

Figure 6: **Owner's pro-social preferences and organization's sustainability.** The figure plots the organization's sustainability, $\mathbb{E}[\tilde{s}]$, as a function of the owner's pro-social preferences γ_O.

These results highlight a fundamental asymmetry between *top-down* and *bottom-up* approaches to influencing an organization's sustainability. A bottom-up approach, driven by changes in the manager's pro-social preferences, can lead to changes in control rights that have unintended effects on the organization's sustainability. Specifically, a more pro-social manager may inadvertently reduce the organization's sustainability, while a less pro-social manager might increase it. In contrast, a top-down approach has the intended effect on sustainability: a more pro-social owner always enhances sustainability, while a less pro-social owner inevitably reduces it. This asymmetry suggests that an organization's sustainability may be more effectively shaped by initiatives targeting the ownership structure rather than focusing on managerial behavior. Our analysis also underscores that even small changes in stakeholder preferences can lead to significant shifts in sustainability outcomes through changes in control rights, emphasizing the important role of governance structure in determining an organization's sustainability.

V Empirical Implications

In this section, we discuss the implications of our model for empirical research and relate them to existing evidence. While we adopt the terms owners and managers for the principal and agent, our results have broader applicability and can be extended to various principal-agent relationships, such as managers and employees and boards and CEOs.

First, our model generates predictions regarding stakeholders' pro-social preferences and control rights.

Prediction 1 (Control Rights)**.** *Principals who focus on financial returns are more inclined to restrict agents' control rights when faced with conflicts over sustainability policies, compared to principals who prioritize social outcomes.*

Control rights can be measured through CEO turnover, which represents the most extreme form of the withdrawal of control rights. While Huang et al. (2020) show that disagreement between investors and management over traditional financial objectives drives CEO turnover, our model extends this insight to conflicts over sustainability policies. A notable example of such a turnover is the recent removal of Danone's CEO.[14] Our model predicts a novel asymmetry: changes in control rights are more likely when owners prioritize financial returns but less likely when owners have pro-social preferences. While existing literature measures shareholders' and other investors' non-financial preferences through surveys (e.g., Bauer et al., 2021), experiments (e.g., Bonnefon et al., 2025), and public commitments (e.g., Kacperczyk and Peydró, 2022; Bolton and Kacperczyk, 2023), it has not explored their relationship with stakeholder disagreements or turnover patterns.

Board composition provides another measure of control rights, with board seats held by directors more closely aligned with shareholders reflecting stronger shareholder control (e.g.,

[14] See "A top CEO was ousted after making his company more environmentally conscious. Now he's speaking out," Time Magazine, 21 November 2021.

Cotter et al., 1997; Nguyen and Nielsen, 2010). When conflicts of interest over sustainability policies arise, shareholders may attempt to increase their control over the board. While previous studies have examined the role of pro-social shareholders in corporate governance (e.g., Di Giuli and Kostovetsky, 2014; Dimson et al., 2015; McCahery et al., 2016; Dyck et al., 2019; Krueger et al., 2020; Dasgupta et al., 2021), the relationship between stakeholders' pro-social preferences and board composition provides a new avenue for testing our predictions about the asymmetric effects on control rights.

Second, our model generates novel predictions regarding stakeholders' pro-social preferences and equity-based compensation.

Prediction 2 (Compensation)**.** *Organizations with more pro-social principals tend to offer less equity-based compensation to agents, given control rights. On the other hand, equity-based compensation rises with agents' pro-social preferences when they are moderate but may decline when these preferences become strong, conditional on control rights.*

The first part of the prediction aligns with evidence suggesting that environmentally friendly firms tend to pay lower equity-based compensation to CEOs (Francoeur et al., 2017). The second part introduces a novel prediction linking managers' pro-social preferences to their compensation levels. While recent research has measured managerial pro-social preferences (e.g., Guenzel et al., 2023; Feng et al., 2024), it has not yet explored how these preferences relate to compensation practices. Our prediction emphasizes that agents' equity compensation initially increases with their pro-social preferences but may decrease once those preferences become stronger.

Third, our model predicts how agents' pro-social preferences influence sustainability policies.

Prediction 3 (Effort)**.** *More pro-social agents enhance an organization's sustainability by exerting greater effort and gaining effective control, conditional on control rights.*

This prediction aligns with evidence of higher effort levels among pro-social employees (e.g., Hedblom et al., 2019; Krueger et al., 2022) and CEOs' influence through personal values (e.g., Guenzel et al., 2023; Feng et al., 2024). Our model shows this relationship emerges endogenously even under optimal contracting.

Fourth, our model generates predictions about stakeholders' pro-social preferences and organizational sustainability.

Prediction 4 (Organizational Sustainability)**.** *A top-down approach through changes in principals' pro-social preferences always produces the intended effect on an organization's sustainability, strengthening as the principal's pro-social preferences increase and weakening as they decrease. In contrast, a bottom-up approach through changes in agents' pro-social preferences can have the opposite effect on sustainability.*

This prediction helps reconcile mixed empirical evidence on the impact of pro-social investors on firms' social and environmental performance. While some studies find positive effects (e.g., Di Giuli and Kostovetsky, 2014; Chen et al., 2020), others document negative (e.g., Kim et al., 2022) or no effects (e.g., Heath et al., 2023). Our framework suggests these conflicting results may stem from differences in how pro-social preferences affect control rights across various contexts. Investors may act as principals, such as banks investing directly in companies, or as agents, like asset managers investing on behalf of clients. For instance, BlackRock's increasingly pro-social stance as an agent—asset manager—initially enhanced its influence on the sustainability of portfolio companies, but the subsequent withdrawal of funds or voting rights by its principals reduced this impact. Our model suggests that asset managers' recent moderation of ESG commitments may, paradoxically, benefit sustainability by helping them retain control rights over portfolio companies through larger asset holdings or retention of voting rights.

VI Conclusion

This paper develops a theory of stakeholder governance that examines how pro-social preferences influence an organization's sustainability through control rights. Our analysis reveals that while stronger pro-social preferences enhance sustainability when implemented top-down, they may lead to unintended negative consequences when operating bottom-up. This asymmetry suggests several promising directions for future research. Studies could explore whether sustainability performance exhibits discontinuous changes around shifts in control rights, particularly following CEO turnover or changes in board composition. Researchers could also investigate how different ownership structures affect the relationship between stakeholder preferences and sustainability outcomes, examining whether more pro-social owners are indeed more inclined to delegate control rights. Additionally, our framework suggests that organizations may achieve better sustainability outcomes by focusing on ownership structure and delegation rather than relying on complex incentive schemes, opening new directions for research on organizational design and sustainability. Finally, our model provides a theoretical foundation for studying how recent shifts in financial institutions' sustainability stances influence their power over portfolio companies' environmental and social practices. Understanding these dynamics is crucial for designing effective corporate governance mechanisms that can balance diverse stakeholder preferences.

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Appendix

We first establish the results related to the optimal contract and the organization's sustainability, after which we provide additional results on the complementarity between delegation and compensation, as well as social compensation.

A Optimal Contract

Proof of Proposition 1. Since the owner's utility is strictly decreasing in β_M when retaining control rights, the owner does not offer the manager any equity stake in this case. Note that

$$U_O(O,0) = \pi_G + \gamma_O s_G - c < \pi_G + \gamma_O s_G = U_O(M,0).$$

Therefore, the owner delegates control rights to the manager: $d^* = M$.

To show that $\beta_M^* = 0$, let $\tilde{\beta}_M > 0$. Then

$$U_O(M,0) = \pi_G + \gamma_O s_G = \max_{\theta\in\{G,B\}} \pi_\theta + \gamma_O s_\theta > \max_{\theta\in\{G,B\}} (1-\tilde{\beta}_M)\pi_\theta + \gamma_O s_\theta \geq U_O(M,\tilde{\beta}_M).$$

Therefore, $\beta_M^* = 0$ in equilibrium. $\square$

Proof of Proposition 2. Before proceeding with the proof, we define $\bar{\beta}_M^M := -\gamma_M \frac{\Delta s}{\Delta \pi}$ and $\bar{\beta}_M^O := 1 + \gamma_O \frac{\Delta s}{\Delta \pi}$, which are the values of β_M for which the manager and the owner are indifferent between the green and the brown project, respectively. Further, define $\underline{\beta}_M := \min\{\bar{\beta}_M^M, \bar{\beta}_M^O\}$ and $\bar{\beta}_M := \max\{\bar{\beta}_M^M, \bar{\beta}_M^O\}$. Note that since we consider a brown owner, $\gamma_O < -\frac{\Delta\pi}{\Delta s}$, we have $\bar{\beta}_M^O \in (0,1]$.

The owner's utility when the manager holds control rights, $U_O(M,\beta_M)$, is given by

$$\begin{cases} (1-\beta_M)\pi_B + \gamma_O s_B + q_M(M,\beta_M)((1-\beta_M)\Delta\pi + \gamma_O\Delta s), & \text{if } \beta_M \leq \underline{\beta}_M, \\ \max\{(1-\beta_M)\pi_G + \gamma_O s_G, (1-\beta_M)\pi_B + \gamma_O s_B\}, & \text{if } \underline{\beta}_M < \beta_M < \bar{\beta}_M, \\ (1-\beta_M)\pi_G + \gamma_O s_G - q_M(M,\beta_M)((1-\beta_M)\Delta\pi + \gamma_O\Delta s), & \text{if } \beta_M \geq \bar{\beta}_M, \end{cases} \tag{3}$$

where

$$q_M(M, \beta_M) = \begin{cases} \min\left\{\frac{\beta_M \Delta\pi + \gamma_M \Delta s}{\phi_M}, 1\right\}, & \text{if } \beta_M < \underline{\beta}_M, \\ 0, & \text{if } \underline{\beta}_M \leq \beta_M \leq \bar{\beta}_M, \\ \min\left\{\frac{\beta_M(-\Delta\pi) + \gamma_M(-\Delta s)}{\phi_M}, 1\right\}, & \text{if } \beta_M > \bar{\beta}_M. \end{cases} \tag{4}$$

The proof proceeds in several steps. We first establish optimal compensation conditional on control rights, after which we establish the optimal delegation of control rights.

Step 1. We first establish that an optimal equity stake given the delegation of control rights $\beta_M^*(M)$ satisfies $\beta_M^*(M) \leq \bar{\beta}_M^M$ and $\beta_M^*(M) \leq \bar{\beta}_M^O$. It is straightforward to show that $U_O(M, \beta_M) < U_O(M, \underline{\beta}_M)$ for all $\beta_M > \underline{\beta}_M$. In particular, this results implies that $\beta_M^*(M) \leq \underline{\beta}_M$ such that we can restrict attention to the first case of the owner's utility function in equation (3) when determining the optimal equity stake.

The result also implies that when $\gamma_M = 0$, we have $\beta_M^*(M) = 0$ since $\bar{\beta}_M^M = 0$ in this case. For the remainder of the proof, we therefore consider the case $\gamma_M > 0$.

Step 2. In this second step, we establish several properties of the owner's utility function $U_O(M, \beta_M)$. To do so, it is helpful to define the following auxiliary function for $\beta_M \in [0, \underline{\beta}_M]$:

$$F(\beta_M) := (1 - \beta_M)\pi_G + \gamma_O s_G - (1 - \tilde{q}_M(M, \beta_M)) \underbrace{((1 - \beta_M)\Delta\pi + \gamma_O \Delta s)}_{\leq 0}, \tag{5}$$

where

$$\tilde{q}_M(M, \beta_M) = \frac{\beta_M \Delta\pi + \gamma_M \Delta s}{\phi_M}.$$

That is, F is derived from the owner's utility function by not imposing the maximum effort of one.

We have $U_O(M, \beta_M) = F(\beta_M)$ when $q_M(M, \beta_M) < 1$. Note that when $q_M(M, \beta_M) = 1$, then $U_O(M, \beta_M) = (1 - \beta_M)\pi_G + \gamma_O s_G$. From equation (5) it follows that for $\beta < \bar{\beta}_M^O$

$$(1 - \beta_M)\pi_G + \gamma_O s_G \geq F(\beta_M) \quad \Leftrightarrow \quad \tilde{q}_M(M, \beta_M) \geq 1 \quad \Leftrightarrow \quad q_M(M, \beta_M) = 1.$$

In particular, we have

$$U_O(M, \beta_M) = \max\left\{F(\beta_M), (1 - \beta_M)\pi_G + \gamma_O s_G\right\}.$$

Note further that the function F has the form

$$F(\beta_M) = A\beta_M^2 + B\beta_M + C,$$

where $A < 0$. Thus, F is strictly concave.

In addition, $\tilde{q}_M(M, \beta_M)$ is strictly decreasing in β_M. As a result, there are three cases:

1. If $\tilde{q}_M(M, 0) < 1$, then $q_M(M, \beta_M) < 1$ for all $\beta_M \in [0, \underline{\beta}_M]$.

2. If $\tilde{q}_M(M, 0) = 1$, then $q_M(M, 0) = 1$ and $q_M(M, \beta_M) < 1$ for all $\beta_M \in (0, \underline{\beta}_M]$.

3. If $\tilde{q}_M(M, 0) > 1$, then there exists an interval $[0, \eta] \subseteq [0, \underline{\beta}_M]$ such that $q_M(M, \beta_M) = 1$ for all $\beta_M \in [0, \eta]$ and $q_M(M, \beta_M) < 1$ for all $\beta_M \in (\eta, \underline{\beta}_M]$.

Note that we have $\tilde{q}_M(M, 0) > 1 \Leftrightarrow \gamma_M > \frac{\phi_M}{\Delta s}$. In particular, if $\gamma_M \leq \frac{\phi_M}{\Delta s}$, then

$$U_O(M, \beta_M) = F(\beta_M). \tag{6}$$

If $\gamma_M > \frac{\phi_M}{\Delta s}$, then

$$U_O(M, \beta_M) = \begin{cases} (1 - \beta_M)\pi_G + \gamma_O s_G, & \text{if } \beta_M \leq \eta, \\ F(\beta_M), & \text{if } \eta < \beta_M \leq \underline{\beta}_M. \end{cases} \tag{7}$$

Step 3. A necessary condition for $\beta_M > 0$ to be optimal is that

$$F'(0) = \frac{\Delta\pi(\Delta\pi + \Delta s(\gamma_O - \gamma_M))}{\phi_M} - \pi_B > 0.$$

The reason is that, since F is concave, if $F'(0) \leq 0$, then it is strictly decreasing for $\beta_M \in (0, \underline{\beta}_M]$ and $U_O(M, \beta_M) = \max\{F(\beta_M), (1 - \beta_M)\pi_G + \gamma_O s_G\}$ is also strictly decreasing for $\beta_M \in (0, \underline{\beta}_M]$. The condition $F'(0) > 0$ can be rewritten as

$$\gamma_M > \underline{\gamma}_M = \frac{\Delta\pi\,(\Delta\pi + \Delta s\gamma_O) - \pi_B\phi_M}{\Delta\pi\Delta s}.$$

Note that the derivative $F'(0)$ is strictly increasing in γ_M.

There are several cases:

1. Consider the case $\underline{\gamma}_M \leq 0$. When $\gamma_M \in (0, \frac{\phi_M}{\Delta s}]$, then $U_O(M, \beta_M)$ has the form in equation (6) and therefore $\beta_M^*(M) > 0$ since $F'(0) > 0$. When $\gamma_M > \frac{\phi_M}{\Delta s}$, then $U_O(M, \beta_M)$ has the form in equation (7). Since the function is strictly decreasing for $\beta_M \leq \eta$, and quadratic and concave for $\eta < \beta_M \leq \underline{\beta}_M$, the optimum of $U_O(M, \beta_M)$ is either $\beta_M^*(M) = 0$ or $\beta_M^*(M) \in (\eta, \underline{\beta}_M]$.

   The objective is to show that $\max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M)$ is weakly decreasing in γ_M when $\gamma_M > \frac{\phi_M}{\Delta s}$. Note that while the optimal equity compensation will be in the interval $[0, \underline{\beta}_M]$, it is convenient to consider $U_O(M, \beta_M)$ up to $\bar{\beta}_M^O$, which is extending the interval of consideration if $\bar{\beta}_M^M < \bar{\beta}_M^O$. Specifically, note that

$$\max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M) = \max_{\beta_M \in [0, \bar{\beta}_M^O]} U_O(M, \beta_M),$$

   since $U_O(M, \beta_M)$ is strictly deceasing for $\beta_M \in [\bar{\beta}_M^M, \bar{\beta}_M^O]$ so that we can consider the latter maximum.

   For every $\eta < \beta_M < \underline{\beta}_M$, $\tilde{q}_M(M, \beta_M)$ is strictly increasing in γ_M. As a result, $F(\beta_M)$ is strictly decreasing in γ_M. Further, note that for $\beta_M < \eta$ and for $\beta_M \in (\bar{\beta}_M^M, \bar{\beta}_M^O)$, $U_O(M, \beta_M)$ is independent of γ_M. At η, we have $\tilde{q}_M(M, \beta_M) = 1$. If γ_M increases marginally, then $U_O(M, \beta_M)$ is constant, and $U_O(M, \beta_M)$ increases when γ_M decreases marginally since $\tilde{q}_M(M, \beta_M)$ is strictly increasing in γ_M. Finally, if $\bar{\beta}_M^M < \bar{\beta}_M^O$, then at $\bar{\beta}_M^M$, we have $\tilde{q}_M(M, \beta_M) = 0$. If γ_M increases marginally, then $U_O(M, \beta_M)$ is decreasing since $\tilde{q}_M(M, \beta_M)$ is strictly increasing in γ_M. It is constant when γ_M decreases marginally. Thus, the maximum value of $U_O(M, \beta_M)$ on $[0, \bar{\beta}_M^O]$ (and therefore on $[0, \underline{\beta}_M]$) is continuous and weakly decreasing in γ_M.

   We next show that the maximum value of $U_O(M, \beta_M)$ on $[0, \underline{\beta}_M]$ is strictly decreasing in γ_M when $\beta_M^*(M) > 0$ and $\gamma_M > \frac{\phi_M}{\Delta s}$. First, note that we can never have $\beta_M^*(M) = \bar{\beta}_M^O$. Assume that $\beta_M^*(M) = \bar{\beta}_M^O$, then $\bar{\beta}_M^O = \beta_M^*(M) \leq \bar{\beta}_M^M$ and $(1 - \bar{\beta}_M^O)\Delta\pi + \gamma_O \Delta s = 0$.

Therefore,

$$\begin{aligned}U_O(M,\bar{\beta}_M^O) &= (1-\bar{\beta}_M^O)\pi_G + \gamma_O s_G \\ &= (1-\bar{\beta}_M^O)\pi_B + \gamma_O s_B + q_M(M,0)\left((1-\bar{\beta}_M^O)\Delta\pi + \gamma_O \Delta s\right) \\ &< \pi_B + \gamma_O s_B + q_M(M,0)\left(\Delta\pi + \gamma_O\Delta s\right) \\ &= U_O(M,0).\end{aligned}$$

As a consequence, $\beta_M^*(M) < \bar{\beta}_M^0$. Therefore, if $\beta_M^*(M) > 0$ it is either $\{\beta_M^F | F'(\beta_M^F) = 0\}$ or $\bar{\beta}_M^M$. We showed above that $F(\beta_M)$ is strictly decreasing in γ_M. Furthermore, when $\bar{\beta}_M^M < \bar{\beta}_M^O$, then $U_O(M,\bar{\beta}_M^M) = (1-\bar{\beta}_M^M)\pi_B + \gamma_O s_B$, which is also strictly decreasing in γ_M. As result, when the optimizer of $\max_{\beta_M \in [0,\underline{\beta}_M]} U_O(M,\beta_M)$ is positive then the maximum is strictly decreasing in γ_M.

The results above combined with the fact that $U_O(M,0)$ is independent of γ_M when $\gamma_M > \frac{\phi_M}{\Delta s}$ and $\beta_M^*(M) > 0$ when $\gamma_M = \frac{\phi_M}{\Delta s}$ implies that there exists a threshold $\bar{\gamma}_M > \frac{\phi_M}{\Delta s}$ such $\beta_M^*(M) > 0$ for all $\gamma_M \in (\frac{\phi_M}{\Delta s}, \bar{\gamma}_M)$ and $\beta_M^*(M) = 0$ for all $\gamma_M > \bar{\gamma}_M$. Note that at $\gamma_M = \bar{\gamma}_M$, the owner is indifferent between $\beta_M = 0$ and some $\beta_M > 0$ that is the unique maximum of F on $[\eta, \underline{\beta}_M]$.

2. Consider the case $0 < \underline{\gamma}_M < \frac{\phi_M}{\Delta s}$. Then we have $\beta_M^*(M) = 0$ for all $\gamma_M \in [0, \underline{\gamma}_M]$, and $\beta_M^*(M) > 0$ for all $\gamma_M \in (\underline{\gamma}_M, \frac{\phi_M}{\Delta s}]$. For $\gamma_M > \frac{\phi_M}{\Delta s}$, the same arguments as in Case 1 apply. In particular, there exists a $\bar{\gamma}_M > \frac{\phi_M}{\Delta s}$ such that $\beta_M^*(M) > 0$ for all $\gamma_M \in (\frac{\phi_M}{\Delta s}, \bar{\gamma}_M)$ and $\beta_M^*(M) = 0$ for all $\gamma_M > \bar{\gamma}_M$. At $\gamma_M = \bar{\gamma}_M$, the owner is indifferent between $\beta_M = 0$ and some $\beta_M > 0$ that is the unique maximum of F on $[\eta, \underline{\beta}_M]$.

3. Consider the case $\underline{\gamma}_M \geq \frac{\phi_M}{\Delta s}$. Then we have $\beta_M^*(M) = 0$ for all $\gamma_M \in [0, \underline{\gamma}_M]$. Observe that at $\gamma_M = \underline{\gamma}_M$, the owner cannot be indifferent between a zero and positive equity stake as $F'(0) = 0$. Therefore, at $\underline{\gamma}_M$, the organization must strictly prefer a zero equity stake. When $\gamma_M > \underline{\gamma}_M \geq \frac{\phi_M}{\Delta s}$, then $U_O(M,\beta_M)$ has the form in equation (7). We further know from Case 1 that the maximum value of $U_O(M,\beta_M)$ on $[0, \underline{\beta}_M]$ is continuous and strictly decreasing in γ_M when the optimizer is positive $\beta_M^*(M) > 0$ and that $U_O(M,0)$ is independent of γ_M. Thus, it must be that $\beta_M^*(M) = 0$ for $\gamma_M > \underline{\gamma}_M$. Therefore, if $\underline{\gamma}_M \geq \frac{\phi_M}{\Delta s}$, then we have $\beta_M^*(M) = 0$ for all $\gamma_M \geq 0$.

Step 4. When retaining control rights, the owner offers no equity compensation, $\beta_M^*(O) = 0$, as its utility is strictly decreasing in β_M.

Step 5. Finally, we determine the owner's delegation decision. The owner's utility when retaining control rights is $U_O(O, 0) = \pi_B + \gamma_O s_B - c$, since the owner does not offer any equity compensation when retaining control rights. In particular, the owner's utility is independent of γ_M in this case.

From the arguments in Step 3, we know that $\max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M)$ is weakly decreasing in γ_M. Furthermore, for $\gamma_M = 0$ the owner delegates control rights. Therefore, there exists a $\hat{\gamma}_M > 0$ such that the owner delegates control rights if and only if $\gamma \leq \hat{\gamma}_M$.[15] Note that we can have $\hat{\gamma}_M = \infty$ if c is sufficiently high.

We redefine $\bar{\gamma}_M$ as $\min\{\bar{\gamma}_M, \hat{\gamma}_M\}$ to control for the fact that without delegation there is no compensation. This completes the proof. □

Proof of Proposition 3. Observe that if $\beta_M^* > 0$, then β_M^* is either $\{\beta_M^F | F'(\beta_M^F) = 0\}$ or $\bar{\beta}_M^M$, where the threshold is defined in the proof of Proposition 2. From the proof of Proposition 2 it also follows that $\beta_M^* < \bar{\beta}_M^O$. Furthermore, since F is concave and $\beta_M \leq \bar{\beta}_M^M$ (see the proof of Proposition 2), it must be that

$$\beta_M^* = \min\{\beta_M^F, \bar{\beta}_M^M\} = \min\left\{\frac{\Delta\pi(\Delta\pi - \Delta s(\gamma_M - \gamma_O)) - \pi_B\phi_M}{2(\Delta\pi)^2}, -\gamma_M\frac{\Delta s}{\Delta\pi}\right\} \tag{8}$$

when $\beta_M^* > 0$. The results in the proposition then follow directly from this equation as $-\Delta\pi\Delta s > 0$ and $\frac{\Delta s}{\Delta\pi} < 0$. □

Proof of Proposition 4. As shown in the proof of Proposition 3, when $\beta_M^* > 0$, the owner either offers $\beta_M^* = \beta_M^F$ or $\beta_M^* = \bar{\beta}_M^M$.

If the owner offers $\beta_M^* = \bar{\beta}_M^M$, then

$$q_M(M, \bar{\beta}_M^M) = 0. \tag{9}$$

If the owner offers

$$\beta_M^* = \beta_M^F = \frac{\Delta\pi(\Delta\pi - \Delta s(\gamma_M - \gamma_O)) - \pi_B\phi_M}{2\Delta\pi^2},$$

[15] We assumed that if the owner is indifferent, they delegate control rights.

then from equation (2) (as $\beta_M^* \leq \underline{\beta}_M$ and $\beta_M^* < \bar{\beta}_M^O$), it follows that

$$q_M(M, \beta_M^F) = \frac{1}{2}\left(\frac{\Delta\pi + \Delta s(\gamma_M + \gamma_O)}{\phi_M} - \frac{\pi_B}{\Delta\pi}\right), \tag{10}$$

which is increasing in γ_M.

We know from equation (8) that $\beta_M^* > 0$ is continuous in γ_M. Furthermore, effort is described by the case $\beta_M \leq \underline{\beta}_M$ in equation (4).[16] These two results combined imply that $q_M(M, \beta_M^*)$ is continuous in β_M^* when $\beta_M^* > 0$. A direct calculation using equations (9) and (10) then shows that $q_M(M, \beta_M^*)$ is weakly increasing in γ_M when $\beta_M^* > 0$. □

Proof of Proposition 5. A green owner ($\gamma_O \geq -\frac{\Delta\pi}{\Delta s}$) always delegates control rights to the manager and offers no equity compensation (Proposition 1).

For a brown owner ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$), we first show that, conditional on delegation, the owner only offers equity compensation when $\gamma_O < \bar{\gamma}_O$. After that, we show that the owner only delegates control rights when $\gamma_O \geq \hat{\gamma}_O$.

Compensation: From the proof of Proposition 2 it follows that $\beta_M \leq \underline{\beta}_M$. There are two cases:

1. Consider the case $\gamma_M \leq \frac{\phi_M}{\Delta s}$, which does not depend on γ_O. In this case, $U_O(M, \beta_M)$ has the form in equation (6). Following the arguments in the proof Proposition 2, $\beta_M^* > 0$ if and only if $F'(0) > 0$, which can be rewritten as

$$\gamma_O < \frac{\Delta\pi(\gamma_M \Delta s - \Delta\pi) + \pi_B \phi_M}{\Delta\pi \Delta s} = \bar{\gamma}_O.$$

2. Consider the case $\gamma_M > \frac{\phi_M}{\Delta s}$. In this case, $U_O(M, \beta_M)$ has the form in equation (7), where $\eta > 0$ is independent of γ_O as it solves $\tilde{q}_M(M, \eta) = 1$. Observe that for $\beta_M \in [\eta, \underline{\beta}_M]$

$$\begin{aligned} U_O(M, \beta_M) - U_O(M, 0) &= U_O(M, \beta_M) - U_O(M, \eta) + U_O(M, \eta) - U_O(M, 0) \\ &= F(\beta_M) - F(\eta) - \eta\pi_G \\ &= \int_\eta^{\beta_M} F'(\beta) d\beta - \eta\pi_G. \end{aligned}$$

[16] The reason that we can include $\underline{\beta}_M$ in our case is because either $\beta_M^* < \bar{\beta}_M^O \leq \bar{\beta}_M^M$ or $\beta_M^* \leq \bar{\beta}_M^M < \bar{\beta}_M^O$. In the latter case, effort is continuous in β_M at $\underline{\beta}_M$.

Note that

$$\frac{\partial F'(\beta_M)}{\partial \gamma_O} = \frac{\Delta\pi\Delta s}{\phi_M} < 0.$$

Therefore, for $\beta_M > \eta$, we have that $U_O(M, \beta_M) - U_O(M, 0)$ is strictly decreasing in γ_O. Furthermore, $\underline{\beta}_M$ is weakly decreasing in γ_O. Assume that for some $\bar{\gamma}_O$, we have $\max_{\beta_M \in [\eta, \underline{\beta}_M]} U_O(M, \beta_M) - U_O(M, 0) = 0$, then the optimizer must be strictly larger than $\eta > 0$. However, this implies that $\max_{\beta_M \in [\eta, \underline{\beta}_M]} U_O(M, \beta_M) - U_O(M, 0)$ is strictly decreasing in γ_O at $\bar{\gamma}_O$. Therefore, $\max_{\beta_M \in [\eta, \underline{\beta}_M]} U_O(M, \beta_M) - U_O(M, 0) = 0$ has at most one solution, and if it does, then this function crosses zero from above. We then have that $\beta_M^* > 0 \Leftrightarrow \gamma_O < \bar{\gamma}_O$. Note that at $\gamma_O = \bar{\gamma}_O$, the owner is indifferent between $\beta_M = 0$ and some $\beta_M > 0$ that is the unique maximum of F on $[\eta, \underline{\beta}_M]$.

Delegation: From the proof of Proposition 2, it follows that for $\beta_M \in [0, \underline{\beta}_M]$, we have[17]

$$\frac{\partial U_O(M, \beta_M)}{\partial \gamma_O} = s_B + q_M(M, \beta_M)\Delta s \geq s_B,$$

When the manager retains control rights, $\frac{\partial U_O(O,0)}{\partial \gamma_O} = s_B$. From the envelope theorem it then follows that

$$\frac{\partial \max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M)}{\partial \gamma_O} = \frac{\partial U_O(M, \beta_M^*)}{\partial \gamma_O} \geq \frac{\partial U_O(O, 0)}{\partial \gamma_O}.$$

Note that we can ignore changes in $\underline{\beta}_M$ because it either does not bind when $\bar{\beta}_M^O \leq \bar{\beta}_M^M$ or it is independent of γ_O when $\bar{\beta}_M^O > \bar{\beta}_M^M$.

As a consequence there exists a threshold $\hat{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$ such that

$$d = O \quad \Leftrightarrow \quad U_O(O, 0) > \max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M) \quad \Leftrightarrow \quad \gamma_O < \hat{\gamma}_O.$$

Remark: Observe that there could be a region for γ_O where

$$\max_{\beta_M \in [0, \underline{\beta}_M]} U_O(M, \beta_M) = U_O(O, 0).$$

Recall that we assume that the owner delegates control rights in this case.

We redefine $\bar{\gamma}_O$ as $\max\{\bar{\gamma}_O, \hat{\gamma}_O\}$ to account for the fact that without delegation, there

[17] Note that when $\underline{\beta}_M = \bar{\beta}_M^O$, then the intervals below become open to the right since $\beta_M^* < \bar{\beta}_M^O$: $[0, \underline{\beta}_M)$.

is no compensation. From these results, it follows that for $\gamma_O \geq \hat{\gamma}_O$, the owner delegates control rights, and for $\gamma_O \in [\hat{\gamma}_O, \bar{\gamma}_O)$ it offers a positive equity stake. □

Proof of Proposition 6. From the proof of Proposition 3, it follows that if $\beta_M^* > 0$, then it is given by equation (8). The results then follow directly from equation (8) and the fact that $\Delta\pi\Delta s < 0$. □

B Organization's Sustainability

Proof of Proposition 7. As shown in Proposition 1, a green owner ($\gamma_O \geq -\frac{\Delta\pi}{\Delta s}$) always delegates control rights, $d^* = M$, and sets $\beta_M^* = 0$. In this case, both the owner and the manager prefer the green project, and the organization's sustainability is constant and given by $\mathbb{E}[\tilde{s}] = s_G$. □

Proof of Proposition 8. If the owner is brown ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$), then the optimal contract from Proposition 2 is summarized in Figure 7.

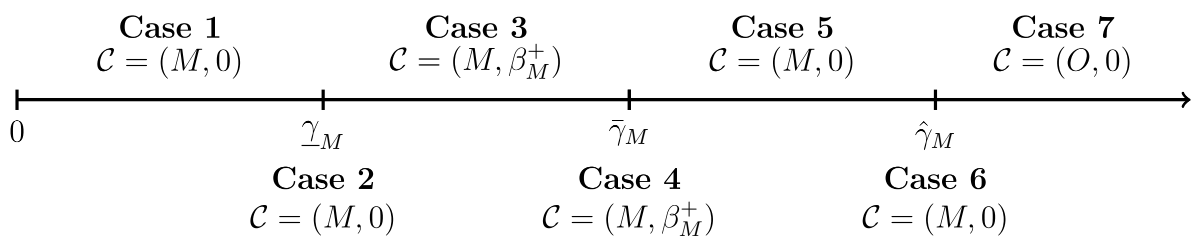

Figure 7: **Optimal contract as a function of γ_M.** In this figure, $\mathcal{C} = (d^*, \beta_M^*)$ is the optimal contract offered to the manager, where β_M^+ denotes a strictly positive equity stake.

A preliminary result is that when a brown owner delegates control rights, the organization's sustainability can be written as

$$\mathbb{E}[\tilde{s}] = s_B + q_M(M, \beta_M^*)\Delta s = s_B + \min\left\{\frac{\beta_M^*\Delta\pi + \gamma_M\Delta s}{\phi_M}, 1\right\}\Delta s$$

since the owner always chooses the brown project (as $\beta_M^* < \bar{\beta}_M^O$; see the proof of Proposition 2) and the manager chooses the green project when exerting effort and becoming informed ($\beta_M^* < \bar{\beta}_M^M$) or exerts no effort ($\beta_M^* = \bar{\beta}_M^M$).

Three parameter constellations can arise: (1) $\underline{\gamma}_M = \bar{\gamma}_M = \hat{\gamma}_M$, (2) $\underline{\gamma}_M < \bar{\gamma}_M = \hat{\gamma}_M$, and (3) $\underline{\gamma}_M < \bar{\gamma}_M < \hat{\gamma}_M$, which we discuss separately below.[18]

[18]Note that $\underline{\gamma}_M = \bar{\gamma}_M < \hat{\gamma}_M$ is equivalent to $\underline{\gamma}_M = \bar{\gamma}_M = \hat{\gamma}_M$.

Parameter Values 1 ($\underline{\gamma}_M = \bar{\gamma}_M = \hat{\gamma}_M$): In this situation, Cases 2-6 collapse.

Case 1. In this case, $\beta_M^* = 0$ and the organization's sustainability is

$$\mathbb{E}[\tilde{s}] = s_B + q_M(M, 0)\Delta s = s_B + \min\left\{\frac{\gamma_M \Delta s}{\phi_M}, 1\right\}\Delta s,$$

which is weakly increasing in γ_M.

Cases 2-6. Observe that $\hat{\gamma}_M > 0$ since at $\gamma_M = 0$, the owner strictly prefers to delegate control rights as $c > 0$. At $\gamma_M = \hat{\gamma}_M$, we have

$$\lim_{\gamma_M \uparrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}] = s_B + q_M(M, 0|\hat{\gamma}_M)\Delta s > s_B = \lim_{\gamma_M \downarrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}],$$

since $\lim_{\gamma_M \uparrow \hat{\gamma}_M} q_M(M, 0) = \min\left\{\frac{\hat{\gamma}_M \Delta s}{\phi_M}, 1\right\} > 0$. The last equality follows from Case 7, in which the owner retains control rights and always chooses the brown project.

Case 7. In this case, the owner does not delegate control rights and always chooses the brown project, such that the organization's sustainability is $\mathbb{E}[\tilde{s}] = s_B$.

Parameter Values 2 ($\underline{\gamma}_M < \bar{\gamma}_M = \hat{\gamma}_M$): In this situation, Cases 4-6 collapse.

Case 1. Follows from Case 1 in Parameter Values 1.

Case 2. We show that the organization's sustainability is continuous in γ_M at $\underline{\gamma}_M$. We first show that $\lim_{\gamma_M \downarrow \underline{\gamma}_M} \beta_M^* = 0$. For $\underline{\gamma}_M = 0$, this is true since $\beta_M^* \leq \underline{\beta}_M = 0$. To show this for $\underline{\gamma}_M > 0$, assume to the contrary that $\lim_{\gamma_M \downarrow \underline{\gamma}_M} \beta_M^* > 0$. Building on the proof of Proposition 2, for this to be true it must be that $F'(0|\underline{\gamma}_M) > 0$ but $F'(0|\underline{\gamma}_M) = 0$ by construction. Therefore, $\lim_{\gamma_M \downarrow \underline{\gamma}_M} \beta_M^* = 0$. Since the equity stake is continuous in γ_M at $\underline{\gamma}_M$, so is the manager's effort (as $\beta_M^* \leq \bar{\beta}_M^M$ and $\beta_M^* < \bar{\beta}_M^O$), and therefore, the organization's sustainability is as well.

Case 3. From Proposition 4 it follows that, $q_M(M, \beta_M^*)$ is weakly increasing in γ_M. As a consequence, the organization's sustainability is weakly increasing in γ_M.

Cases 4-6. At $\gamma_M = \hat{\gamma}_M$,

$$\lim_{\gamma_M \uparrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}] = \lim_{\gamma_M \uparrow \hat{\gamma}_M} s_B + q_M(M, \beta_M^*)\Delta s \geq s_B = \lim_{\gamma_M \downarrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}],$$

with a strict inequality whenever $\beta_M^* < \bar{\beta}_M^M$.

Case 7. Follows from Case 7 in Parameter Values 1.

Parameter Values 3 ($\underline{\gamma}_M < \bar{\gamma}_M < \hat{\gamma}_M$):

Case 1. Follows from Case 1 in Parameter Values 1.

Case 2. Follows from Case 2 in Parameter Values 2.

Case 3. Follows from Case 3 in Parameter Values 2.

Case 4. Observe that the manager's compensation decreases at $\gamma_M = \bar{\gamma}_M$ and therefore

$$\lim_{\gamma_M \uparrow \bar{\gamma}_M} q_M(M, \beta_M^*) < \lim_{\gamma_M \downarrow \bar{\gamma}_M} q_M(M, 0)$$

and as a consequence

$$\lim_{\gamma_M \uparrow \bar{\gamma}_M} \mathbb{E}[\tilde{s}] = \lim_{\gamma_M \uparrow \bar{\gamma}_M} s_B + q_M(M, \beta_M^*)\Delta s < \lim_{\gamma_M \downarrow \bar{\gamma}_M} s_B + q_M(M, 0)\Delta s = \lim_{\gamma_M \downarrow \bar{\gamma}_M} \mathbb{E}[\tilde{s}].$$

Case 5. Follows from Case 1 in Parameter Values 1.

Case 6. Observe that

$$\lim_{\gamma_M \uparrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}] = \lim_{\gamma_M \uparrow \hat{\gamma}_M} s_B + q_M(M, 0)\Delta s > s_B = \lim_{\gamma_M \downarrow \hat{\gamma}_M} \mathbb{E}[\tilde{s}].$$

Case 7. Follows from Case 7 in Parameter Values 1.

As a result, the organization's sustainability weakly increases in the manager's pro-social preferences except in some cases when the owner withdraws control rights at $\hat{\gamma}_M$. □

Proof of Proposition 9. The optimal contract from Proposition 5 is summarized in Figure 8.

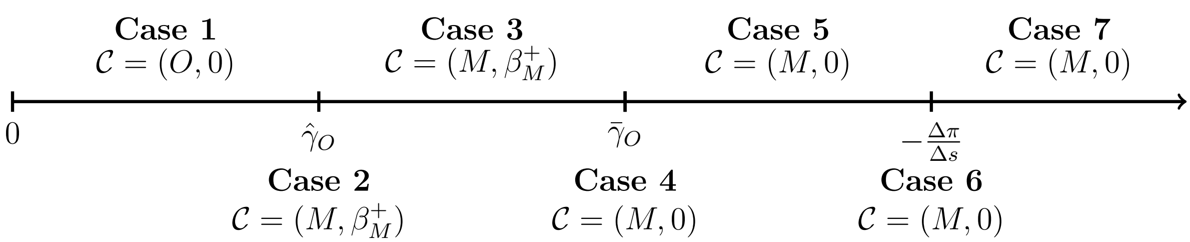

Figure 8: **Optimal contract as a function of γ_O.** In this figure, $\mathcal{C} = (d^*, \beta_M^*)$ is the optimal contract offered to the manager, where β_M^+ denotes a strictly positive equity stake.

A preliminary results is that when a brown owner delegates control rights, the organization's sustainability can be written as

$$\mathbb{E}\left[\tilde{s}\right] = s_B + q_M(M, \beta_M^*)\Delta s = s_B + \min\left\{\frac{\beta_M^* \Delta\pi + \gamma_M \Delta s}{\phi_M}, 1\right\}\Delta s$$

since the owner always chooses the brown project (as $\beta_M^* < \bar{\beta}_M^O$, see the proof of Proposition 2) and the manager chooses the green project when exerting effort and becoming informed ($\beta_M^* < \bar{\beta}_M^M$) or exerts no effort ($\beta_M^* = \bar{\beta}_M^M$).

Since $\hat{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$, three parameter constellations can arise: (1) $\hat{\gamma}_O = \bar{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$, (2) $\hat{\gamma}_O < \bar{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$, and (3) $\hat{\gamma}_O < \bar{\gamma}_O = -\frac{\Delta\pi}{\Delta s}$, which we discuss separately below.

Parameter Values 1 ($\hat{\gamma}_O = \bar{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$): In this situation, Cases 2-4 collapse.

Case 1. In this case, the owner always chooses the brown project and therefore $\mathbb{E}\left[\tilde{s}\right] = s_B$.

Cases 2-4. The brown owner starts delegating control rights at $\hat{\gamma}_O$ and therefore

$$\lim_{\gamma_O \uparrow \hat{\gamma}_O} \mathbb{E}\left[\tilde{s}\right] = s_B \leq \lim_{\gamma_O \downarrow \hat{\gamma}_O} s_B + q_M(M, 0)\Delta s = \lim_{\gamma_O \downarrow \hat{\gamma}_O} \mathbb{E}\left[\tilde{s}\right].$$

Case 5. In this case, $q_M(M, 0)$ is independent of γ_O and therefore the organization's sustainability remains constant.

Case 6. In this case, the brown owner switches from the brown to the green project as their preferred project, which increases the organization's sustainability.

Case 7. In this case, the owner and manager prefer the green project and therefore $\mathbb{E}\left[\tilde{s}\right] = s_G$.

Parameter Values 2 ($\hat{\gamma}_O < \bar{\gamma}_O < -\frac{\Delta\pi}{\Delta s}$):

Case 1. Follows from Case 1 in Parameter Values 1.

Case 2. The brown owner starts delegating control rights at $\hat{\gamma}_O$ and therefore

$$\lim_{\gamma_O \uparrow \hat{\gamma}_O} \mathbb{E}\left[\tilde{s}\right] = s_B \leq \lim_{\gamma_O \downarrow \hat{\gamma}_O} s_B + q_M(M, \beta_M^*)\Delta s = \lim_{\gamma_O \downarrow \hat{\gamma}_O} \mathbb{E}\left[\tilde{s}\right].$$

Case 3. From Proposition 6 it follows that β_M^* is weakly decreasing in γ_O and therefore $q_M(M, \beta_M^*)$ is weakly increasing, as is the organization's sustainability.

Case 4. At $\bar{\gamma}_O$, the manager's compensation weakly drops, which causes the manager to exert weakly more effort, which weakly increases the organization's sustainability.

Case 5. Follows from Case 5 in Parameter Values 1.

Case 6. Follows from Case 6 in Parameter Values 1.

Case 7. Follows from Case 7 in Parameter Values 1.

Parameter Values 3 ($\hat{\gamma}_O < \bar{\gamma}_O = -\frac{\Delta\pi}{\Delta s}$): In this situation, Cases 4-6 collapse.

Case 1. Follows from Case 1 in Parameter Values 1.

Case 2. Follows from Case 2 in Parameter Values 2.

Case 3. Follows from Case 3 in Parameter Values 2.

Cases 4-6. In this case, the brown owner switches from the brown to the green project, which weakly increases the organization's sustainability.

Case 7. Follows from Case 7 in Parameter Values 1.

As a result, the organization's sustainability weakly increases in the owner's pro-social preferences. □

C Delegation and Compensation

In this section, we demonstrate that the ability to offer the manager an equity stake makes delegation more likely. Let ψ be a vector of model parameters:

$$\psi = (\gamma_O, \gamma_M, \pi_G, s_G, \pi_B, s_B, \phi_M, c) \in \Psi,$$

where Ψ is the set of all admissible model parameters. Let Ψ_M be the set of all model parameters such that the owner delegates control rights: $d^* = M$. Furthermore, let Ψ_M^{NC} be the set of model parameters where the owner delegates control rights when the owner cannot offer the manager equity stake, that is, restricting $\beta_M = 0$.

Proposition 10 (Delegation and Compensation are Complements)**.** *If the owner can offer the manager equity compensation $\beta_M \in [0, 1]$, then the owner is more likely to delegate control rights: $\Psi_M^{NC} \subset \Psi_M$.*

Proof of Proposition 10. Consider any $\psi \in \Psi_M^{NC}$. Then $U_O(M, 0) \geq U_O(O, 0)$. It follows that

$$\max_{\beta_M \in [0,1]} U_O(M, \beta_M) \geq U_O(M, 0) \geq U_O(O, 0) = \max_{\beta_M \in [0,1]} U_O(O, \beta_M)$$

since an owner who retains control rights never offers equity compensation. Therefore, $\psi \in \Psi_M$. As a consequence, $\Psi_M^{NC} \subseteq \Psi_M$.

Consider the parameter values

$$\hat{\psi} = (\gamma_O, \gamma_M, \pi_G, s_G, \pi_B, s_B, \phi_M, c) = (0.25, 0.245, 0.1, 3, 0.8, 1, 0.5, 0.195).$$

Then $\hat{\psi} \in \Psi_M$ but $\hat{\psi} \notin \Psi_M^{NC}$. Therefore, $\Psi_M^{NC} \subset \Psi_M$. □

The reason why the owner is less inclined to delegate control rights when they cannot offer an equity stake is that compensation and the delegation of control rights are *complements*. The ability to alleviate conflicts of interest between stakeholders using an equity stake (or other forms of compensation) makes the owner more willing to delegate control rights. In turn, the ability to delegate control rights gives the owner incentives to compensate the manager.

D Social Compensation

In our setup, the owner can offer the manager compensation that is related to the organization's monetary payoff π. In this section, we demonstrate that offering compensation related to the social payoff s, in addition to that related to the monetary payoff, is never optimal.

We extend the contract the owner can offer to the manager by including social compensation $\lambda_M \geq 0$. To ensure the compensation is positive, we assume that $s_G > s_B > 0$. This formulation implies that the manager receives an additional monetary payoff $\lambda_M s$ when the organization generates social payoff s. The owner thus offers the manager a contract (d, β_M, λ_M) containing the delegation decision d, the equity stake β_M, and the social compensation λ_M. Given this contract, the owner's and manager's utility from undertaking a project (π, s) are given by $u_O(\pi, s) = \beta_O \pi + (\gamma_O - \lambda_M)\, s$ and $u_M(\pi, s) = \beta_M \pi + (\gamma_M + \lambda_M)\, s$, respectively.

The owner may want to offer social compensation for two reasons: to induce the manager to change their project or to induce the manager to change their effort. As we show in Proposition 11, this is never optimal.

Proposition 11 (No Social Compensation)**.** *In equilibrium, the owner never offers the manager social compensation, $\lambda_M^* = 0$.*

Proof of Proposition 11. Assume the owner offers the manager compensation $(\tilde{\beta}_M, \tilde{\lambda}_M)$ with $\tilde{\lambda}_M > 0$. Given that $\tilde{\lambda}_M > 0$, it must be that the owner delegates control rights, $d = M$.

Otherwise, the owner would not offer any compensation.

There are two cases:

Green Owner ($\gamma_O \geq -\frac{\Delta\pi}{\Delta s}$): For a green owner,

$$U_O(M, \tilde{\beta}_M, \tilde{\lambda}_M) < \pi_G + \gamma_O s_G = U_O(M, 0, 0).$$

Therefore, a green owner would never offer a contract with positive social compensation.

Brown Owner ($\gamma_O < -\frac{\Delta\pi}{\Delta s}$): If $(\tilde{\beta}_M, \tilde{\lambda}_M)$ causes the brown owner to prefer the green project, then

$$U_O(M, \tilde{\beta}_M, \tilde{\lambda}_M) < \pi_G + \gamma_O s_G \leq U_O(M, 0, 0).$$

Therefore, if $(\tilde{\beta}_M, \tilde{\lambda}_M)$ is optimal, then the brown owner must prefer the brown project.

There are two cases:

1. Consider the case in which the manager prefers the brown project. We must have that the equity stake is larger than the manager's indifference equity stake, $\tilde{\beta}_M > \bar{\beta}_M^M$, otherwise the manager would not prefer the brown project given $(\tilde{\beta}_M, \tilde{\lambda}_M)$. It then follows that

$$\begin{aligned} U_O(M, \tilde{\beta}_M, \tilde{\lambda}_M) &= (1 - \tilde{\beta}_M)\pi_B + (\gamma_O - \tilde{\lambda}_M)s_B \\ &< (1 - \tilde{\beta}_M)\pi_B + \gamma_O s_B \\ &< (1 - \bar{\beta}_M^M)\pi_B + \gamma_O s_B \\ &= U_O(M, \bar{\beta}_M^M, 0). \end{aligned}$$

   Therefore, $(\tilde{\beta}_M, \tilde{\lambda}_M)$ cannot be optimal.

2. Consider the case in which the manager prefers the green project. Take the following alternative contract:

$$(\hat{\beta}_M, \hat{\lambda}_M) = \left(\frac{\gamma_M}{\gamma_M + \tilde{\lambda}_M} \tilde{\beta}_M, 0 \right),$$

   which induces the manager to make the same project choice and has $(\hat{\beta}_M, \hat{\lambda}_M) < (\tilde{\beta}_M, \tilde{\lambda}_M)$. For $(\tilde{\beta}_M, \tilde{\lambda}_M)$, the manager's effort is given by equation (2). Given the results derived above, the following inequalities are satisfied (in this case, we must have $\gamma_M > 0$):[19]

$$
\begin{aligned}
&\frac{u_M\left(\pi_G, s_G|\tilde{\beta}_M, \tilde{\lambda}_M\right) - u_M\left(\pi_B, s_B|\tilde{\beta}_M, \tilde{\lambda}_M\right)}{\phi_M} \\
&= \frac{\tilde{\beta}_M \Delta\pi + (\gamma_M + \tilde{\lambda}_M)\Delta s}{\phi_M} \\
&= \frac{\frac{\gamma_M + \tilde{\lambda}_M}{\gamma_M}\left(\tilde{\beta}_M \frac{\gamma_M}{\gamma_M + \tilde{\lambda}_M}\Delta\pi + \gamma_M \Delta s\right)}{\phi_M} \\
&= \frac{\frac{\gamma_M + \tilde{\lambda}_M}{\gamma_M}\left(\hat{\beta}_M \Delta\pi + \gamma_M \Delta s\right)}{\phi_M} \\
&> \frac{\hat{\beta}_M \Delta\pi + \gamma_M \Delta s}{\phi_M} \\
&= \frac{u_M\left(\pi_G, s_G|\hat{\beta}_M, 0\right) - u_M\left(\pi_B, s_B|\hat{\beta}_M, 0\right)}{\phi_M},
\end{aligned}
$$

where the inequality follows from the fact that given $(\hat{\beta}_M, 0)$, the manager prefers the green project. As a consequence, while the project choice is the same under $(\tilde{\beta}_M, \tilde{\lambda}_M)$ and $(\hat{\beta}_M, 0)$, the manager exerts weakly less effort under $(\hat{\beta}_M, 0)$.

From these results, it then follows that

$$
\begin{aligned}
&U_O\left(M, \tilde{\beta}_M, \tilde{\lambda}_M\right) \\
&= q_M\left(M, \tilde{\beta}_M, \tilde{\lambda}_M\right) u_O\left(\pi_G, s_G|\tilde{\beta}_M, \tilde{\lambda}_M\right) + \left(1 - q_M\left(M, \tilde{\beta}_M, \tilde{\lambda}_M\right)\right) u_O\left(\pi_B, s_B|\tilde{\beta}_M, \tilde{\lambda}_M\right) \\
&\leq q_M\left(M, \hat{\beta}_M, 0\right) u_O\left(\pi_G, s_G|\tilde{\beta}_M, \tilde{\lambda}_M\right) + \left(1 - q_M\left(M, \hat{\beta}_M, 0\right)\right) u_O\left(\pi_B, s_B|\tilde{\beta}_M, \tilde{\lambda}_M\right) \\
&< q_M\left(M, \hat{\beta}_M, 0\right) u_O\left(\pi_G, s_G|\hat{\beta}_M, 0\right) + \left(1 - q_M\left(M, \hat{\beta}_M, 0\right)\right) u_O\left(\pi_B, s_B|\hat{\beta}_M, 0\right) \\
&= U_O\left(M, \hat{\beta}_M, 0\right).
\end{aligned}
$$

Therefore, the manager prefers to offer the owner $(\hat{\beta}_M, 0)$ over $(\tilde{\beta}_M, \tilde{\lambda}_M)$ and as result $(\tilde{\beta}_M, \tilde{\lambda}_M)$ cannot be optimal.

Therefore, it cannot be optimal for the owner to offer the manager social compensation. □

[19] When $\gamma_M = 0$, the owner can offer no compensation and the organization will always implement the brown project.

Absent any compensation, the manager prefers to implement the green project. Therefore, the only reason the owner would want to offer any compensation is to induce the manager to select the brown project or to reduce the manager's effort. Social compensation achieves exactly the opposite, and therefore, the owner has no incentives to offer this type of compensation to the manager. This result highlights that the presence of variable pay dependent on both monetary and social dimensions in executive contracts may be inefficient.