Comput Math Organ Theory (2026) 32:10
https://doi.org/10.1007/s10588-026-09425-9

MANUSCRIPT

Responses of dual-purpose organizations to economic compensation: an agent-based model approach

Sang-Joon Kim[1]

Received: 13 November 2024 / Accepted: 28 May 2026 / Published online: 13 June 2026
© The Author(s) 2026

Abstract

This study investigates whether and how hybrid organizations continuously achieve their dual objectives. Given the paradoxical pursuit of these goals within such organizations, we argue that hybridity is not a fixed concept; rather, its level fluctuates over time. From this dynamic perspective, we examine how hybridity can be temporally reconstructed. Specifically, since hybridity is shaped by two conflicting institutional logics, we explore how hybrid organizations manage this institutional complexity. Furthermore, we suggest that external incentive mechanisms can support these organizations in reconciling their inherent complexities. To analyze organizational responses to these mechanisms, we develop an agent-based model. This approach effectively addresses the diversity in hybrid organizations' behaviors under dual-purpose settings. Through a qualitative investigation of social enterprises, we detail how these hybrid organizations handle their dual logics and respond to an externally influenced incentive system, illustrating how hybridity can be both enabled and limited by external incentives.

Keywords Dual-purpose organization · Hybridity · Institutional logic · Agent-based model · External incentive mechanism

1 Introduction

Hybridity, defined as "the mixing of core organizational elements that would not conventionally go together" (Battilana et al. 2017, p. 129), is central to understanding social entrepreneurship (Shepherd et al. 2019; Battilana and Lee 2014; Mongelli et al. 2019). Since social and economic objectives cannot simply be combined to resolve inherent tensions, scholars suggest that social enterprises often prioritize these goals

✉ Sang-Joon Kim
s.kim@ewha.ac.kr

[1] Ewha School of Business, Ewha Womans University, Seoul, Korea, Republic of

differently (Battilana et al. 2022; Pache and Santos 2013; Shepherd et al. 2019; Wang et al. 2025). Research on hybridity has typically explored how hybrid organizations, such as social enterprises, integrate nonprofit and for-profit elements (e.g., Palakshappa et al. 2024; Smith and Besharov 2019; Ramus et al., 2017; Wang et al. 2025), focusing on the diverse configurations of hybridity in identity, form, rationale, and institutional logic (Shepherd et al. 2019; Battilana et al. 2017; Wry and York 2017; Pache and Santos 2013).

However, hybridity within hybrid organizations is often inconsistent and continually evolving (Battilana et al. 2022; Wang et al. 2025; Smith and Besharov 2019; Bretos et al. 2024; Litrico and Besharov 2019). Social enterprises, in particular, experience ongoing transformation to shape their ultimate business model (Mersland and Strøm 2010; Mia and Lee 2017; Smith and Besharov 2019). While some social enterprises maintain alignment with their original mission, others deviate, experiencing "mission drift" where the business aspect begins to overshadow social objectives (Mia and Lee 2017; Grimes et al. 2019). Mission drift highlights a tendency for social enterprises to become more focused on business viability than solving social problems. As relatively new organizations, social enterprises face unique challenges: the "liability of newness" where dual objectives struggle for validation in the marketplace and the "institutional complexity" of managing dual goals, purposes, and identities (Smith et al. 2013; Battilana et al. 2022; Battilana and Dorado 2010). This duality, crystallized in organizational structure (Jay 2013; Wry and York 2017; Pache and Santos 2010, 2013; Thornton et al. 2012), complicates competitive positioning in target markets (Battilana et al., 2022), as well as their ability to advance social missions effectively.

Prior research has emphasized how hybrid organizations navigate institutional complexity and balance dual goals (Battilana et al. 2017; Besharov & Mitzinneck, 2021), viewing hybridity as the result of internal organizational choices (Pache et al. 2024). However, hybridity can also be shaped by external environmental factors, given the ongoing interaction between organizations and their environments (McMullen 2018; Litrico and Besharov 2019). Since hybridity is rooted in competing institutional logics (Pache and Santos 2010, 2013), interactions with external entities that embody these logics can shape how organizations construct and adapt their configurations (Litrico and Besharov 2019). Thus, how do dual-purpose organizations manage hybridity? If their dual objectives shift over time, what influences these trajectories? How, then, do organizations adjust their hybridity?

This study addresses these questions with two main objectives. First, it examines how hybridity is (re-)configured over time by endogenous processes. Although institutional logics themselves are relatively stable, their organizational embodiments can change based on strategic decisions (Pache et al. 2024; Litrico and Besharov 2019; Kurland and Schneper 2024). By exploring patterns in logic configuration, we aim to clarify how hybrid organizations continually (re-)construct their hybrid structures over time. Second, we investigate how external entities can impact the (re-)construction of hybridity. Focusing on external incentive mechanisms (Vladasel et al. 2024; Jung & Shin, 2022), we explore how such incentives shape hybrid organizations' approaches to managing multiple institutional logics and how they influence hybridity over time.

To achieve these goals, we employ an agent-based model. This approach effectively captures the emergent, collective behaviors of heterogeneous entities through computational methods (Wall 2016; Wu et al. 2024; Howick and Megiddo 2024). Given the complexity of hybrid organizations' interactions with multiple institutional logics, agent-based modeling allows us to observe the interaction effects between institutional logics and organizational practices over continuous time (e.g., Neckebrouck and Zellweger 2024; Yepes-Lugo 2019). By developing an agent-based model that illustrates social enterprises' behaviors in constructing hybridity through the (re-) combination of dual institutional logics, this study clarifies how dual-purpose organizations build their hybridity over time and how external incentive mechanisms can influence this temporally evolving hybridity.

2 Theoretical backgrounds

2.1 Hybridity construction

Prior literature has examined how social enterprises manage their dual objectives through the lens of hybridity (Besharov and Mitzinneck 2021; Shepherd et al. 2019; Bretos et al. 2024; Litrico and Besharov 2019). Hybridity has generally been interpreted through three theoretical perspectives. The first is an architectural view, which focuses on nonprofits that adopt commercial functions (Besharov & Smith, 2014). This approach examines the contingencies where organizational components, reflecting certain institutional logics, coexist incompatibly. The second perspective is strategic leadership, which considers how social entrepreneurs integrate the often incompatible goals of social missions and economic viability (Jay, 2013; Battilana et al. 2022). For example, Wry & York (2013) argued that social enterprises navigate complex institutional contexts by defining their identity. The third perspective understands hybridity as an organizational paradox, where the inherent tensions between social and commercial objectives create paradoxical characteristics (Smith and Besharov 2019; Palakshappa et al. 2024).

These approaches generally assume that hybridity is predetermined. Although actions taken to pursue hybridity may shift over time, the level of hybridity is often considered stable and reflective of the organization's identity as a dual-purpose entity (Shepherd et al. 2019). Additionally, prior empirical studies adopt a contingency perspective, suggesting that the environment shapes hybridity (McMullen 2018; Litrico and Besharov 2019). This view implies that organizations partially adopt dual-purpose characteristics to align with external demands (e.g., ESG-driven organizations). However, in reality, dual-purpose organizations actively orchestrate their own perspectives, identities, and resources to address multiple objectives, adapting their purpose composition over time in response to their environment (local communities, domains, or markets) (Battilana et al. 2022; Kurland and Schneper 2024). While studies on hybridization often portray this process as linear (i.e., construction mechanisms), other research highlights the role of destruction mechanisms (Mia and Lee 2017; Grimes et al. 2019) or pendulum-like shifts in organizational structure (Smith and Besharov 2019).

Thus, hybrid construction involves managing multiple institutional logics within organizations (Thornton et al. 2012; Litrico and Besharov 2019). The composition of these logics, specifically the extent to which organizations adopt and embody multiple institutional logics, contributes to dynamic hybridity. Dual-purpose organizations engage with two embedded logics and develop unique composition patterns (Battilana et al. 2022). As this logic composition shifts over time, hybrid characteristics in these organizations emerge dynamically (Litrico and Besharov 2019; Smith and Besharov 2019). For instance, mission drift can be seen as a state in which a social enterprise, initially aligned with both state and corporate logics, shifts its focus exclusively to the corporate logic, distancing itself from the state logic (Bretos et al. 2024).

There are two key mechanisms underlying the dynamic composition of logics in dual-purpose organizations. The first is performance feedback mechanisms (Cyert & March, 1963), through which organizations adjust based on discrepancies between their goals and achievements. Organizational searches are conducted to effectively address these feedback discrepancies. The second mechanism is institutional characterization (Selznick, 1957), where social evaluations and stakeholder demands shape strategic actions. Organizations evolve as they respond to social demands, thereby constructing their organizational character (Suddaby et al. 2023a, b; Ansell et al. 2015).

We propose that social enterprises, as dual-purpose organizations, undergo a process of dynamic logic composition. Their behaviors are not deterministic but situational, shaped by how they manage dual logics over time. Each social enterprise develops its own configuration of dual logics, resulting in diverse approaches to embodying dual purposes (Litrico and Besharov 2019). However, because institutional logics govern organizational behaviors, patterns emerge in the dynamic logic composition, reflecting broader trends across social enterprises (Fu 2024; De Cuyper et al. 2024).

The dynamically patterned logic composition of social enterprises is guided by performance feedback mechanisms (e.g. Smith and Besharov 2019; Bretos et al. 2024; Noh et al. 2023; Im and Sun 2025). Social enterprises pursue dual aspirations aligned with two institutional logics, state and corporate. By examining gaps between their dual aspirations and performances, they adjust their logic composition (Smith and Besharov 2019). Feedback indicating underperformance prompts social enterprises to adjust their logic composition through problem-driven search, while positive feedback enables reinforcement through slack-driven search (Noh et al. 2023; Im and Sun 2025). To implement these feedback mechanisms, it is essential to assess behaviors embodying the state logic (social behaviors) and the corporate logic (economic behaviors) equivalently. Social enterprises continuously assess their "social" performance relative to their "economic" performance.

2.2 Institutional incentives

Institutional incentives refer to mechanisms provided by institutions to encourage specific outcomes from targeted social actors (Han 2022; Nie 2024). These mechanisms are categorized based on two dimensions: the locus of incentive sources and the orientation of motivation (Jung & Shin, 2022; Au et al. 2024). The locus of incen-

tive sources specifies where the incentives originate, either internally or externally (Jung & Shin, 2022). An internal locus indicates that the organization itself designs and implements incentive schemes to motivate targeted social actors, leveraging its own processes to achieve its goals. In contrast, an external locus of incentive sources means incentives come from outside the organization, such as government subsidies, grants from external institutions, or other ecosystem-based interventions designed to encourage specific behaviors (Jung & Shin, 2022).

The second dimension, motivation orientation, addresses the source of motivation from the perspective of the targeted organizations, whether it is intrinsic or extrinsic (Au et al. 2024). An intrinsic motivation orientation implies that organizations are internally driven by their own growth, mission, or core goals (Morrison and Mota 2023; George et al. 2023). In contrast, an extrinsic motivation orientation means that external factors, such as social evaluations, reputation, or capital market reactions, influence the organization's goal-oriented actions (Jung & Shin, 2022).

As illustrated in Fig. 1, institutional incentives can thus be understood through these four distinct patterns of incentive mechanisms.

Cell I represents organizations motivated by social goals through internal incentives. In this cell, organizations focus on achieving their purposes by self-monitoring and assessing internal processes (Yamini et al. 2022; Au et al. 2024). Since hybrid organizations aim to balance a social mission with economic viability (Besharov and Mitzinneck 2021), an intrinsic drive to fulfill their social mission predominates in Cell I. These organizations prioritize their social mission over economic gains, often establishing internal tracking systems to monitor their actions (McMullen and Bergman Jr 2017). When actions diverge from the mission, they are adjusted based on mission-oriented feedback. This focus on social missions aligns with the state-based institutional logic embedded in these hybrid organizations (Litrico and Besharov 2019).

Cell II describes organizations motivated by economic goals through internal incentives (Au et al. 2024). Unlike Cell I, organizations in Cell II are primarily driven by economic outcomes, with actions rooted in internal self-interests (Greve 2002). Profitability and financial growth become the main motivators, allowing hybrid organizations to sustain their social missions by first ensuring financial stability.

		Motivation Orientation	
		Social	Economic
Locus of Incentive sources	Internal	Cell I - Purpose-pursuing - Mission feedback	Cell II - Profit-pursuing - Performance feedback
	External	Cell III - Purpose-driving - Social Evaluation	Cell IV - Profit-driving - Market Evaluation

Fig. 1 Institutional Incentive Mechanisms

Cell III encompasses organizations motivated by social goals through external incentives (Jung & Shin, 2022). Here, organizations develop strategies to achieve their social mission while being influenced by external evaluations (George et al. 2016; Suddaby et al. 2023a, b). The drive to pursue a social mission is supported by external resources, such as government subsidies. Consequently, these organizations are more responsive to how external stakeholders assess their social impact than to internal assessments.

Cell IV captures organizations motivated by economic goals through external incentives (Vladasel et al. 2024). Organizations in this cell rely on external entities for direction, with economic returns serving as a primary driver. Hybrid organizations in this cell align their actions with market-driven logic, where financial performance is essential.

This study focuses on Cells III and IV to explore how external incentives can direct hybrid organizations toward either social or economic objectives. External incentive mechanisms vary widely in social entrepreneurship contexts, where support ecosystems assist nascent social enterprises, often emphasizing economic sustainability. Given that many social enterprises struggle with financial viability, one form of external incentive intervention is social-value-based economic compensation, which helps integrate economic objectives with social missions.

3 Methods

3.1 Methodological approach

In recognizing that social enterprises' social performance is assessed alongside their economic performance, this study focuses on two main areas: (1) how social enterprises sustain motivation to reinforce their State logic in pursuit of social goals over time, and (2) how economic interventions might impact this social focus. We employ a formal theory to examine whether institutional incentives, specifically economic interventions from ecosystem support systems, can help social enterprises maintain their dual objectives, with a particular emphasis on reinforcing social missions. Given our focus on the evolution of hybridity, understood as a combination of multiple institutional logics (Litrico and Besharov 2019; Pache and Santos 2010, 2013), we acknowledge limitations in positivistic approaches to studying dynamic hybridity (or dynamic logic composition) for several reasons (Howick and Megiddo 2024; Litrico and Besharov 2019; Dosi et al. 2020).

First, capturing the combination of logics is challenging. Proxy measures might approximate this combination, yet they often fail to accurately represent the fluid, performative aspects of dynamic logic interactions between institutions and organizations (Litrico and Besharov 2019; Dosi et al. 2020). Second, identifying behavioral patterns in dynamic logic composition is difficult on a collective level (Goldstone and Janssen 2005). Since hybridity is a continuum, hybrid organizations exhibit diverse behaviors aligned with their unique hybridity levels. Furthermore, the presence of multiple institutional logics creates distinctive, individualized behaviors, complicating empirical studies that require strong internal and external validity to generalize

findings. Third, dynamic logic composition is not a sequence of discrete events but a continuous process (Silverman et al. 2021); thus, understanding hybridity construction requires focusing on the processes of logic composition rather than on correlations between behaviors. Lastly, sample selection must be considered. Empirical studies on hybridity are often limited to surviving social enterprises, excluding cases where enterprises failed due to challenges with logic composition or changes therein (Litrico and Besharov 2019).

To address these challenges in positivistic approaches, we developed an agent-based model (ABM). Computational models like ABMs are valuable in difficult-to-measure empirical settings and offer alternatives to anecdotal case studies (Bryson et al. 2007). Our ABM draws on participant observations of social enterprises to specify hybrid organizational behaviors (Ghorbani et al. 2015; Yang and Gilbert 2008; Antosz et al. 2022). Through qualitative data analyses, we identified evidence of logic compositions, examining how social enterprises operate while striving to meet their social missions. Specifically, we interviewed 23 social entrepreneurs in South Korea to understand how they navigate multiple institutional logics over time. We analyzed these interviews to develop a conceptual model of logic composition within hybrid organizations, which was then refined into a computational model.

To further investigate the role of institutional incentives in dynamic logic composition, we studied the Social Progress Credit (SPC) program, a pay-for-performance initiative for early-stage social enterprises in South Korea. The SPC program was launched by a prominent Korean company to foster social innovation and support social enterprises (Jung & Shin, 2022). Acknowledging that social enterprises often struggle to balance social and economic objectives, the company designed economic incentives to encourage a focus on social missions. We used the SPC program as a research setting, collecting data from various sources, including interviews, documents, and participant observations, to examine how economic incentives influence the pursuit of social goals in hybrid organizations.

3.2 Model settings

Based on our qualitative analysis of social enterprises in the SPC program, we developed an agent-based model (ABM). For simplicity, we assumed only two entities in the model: social enterprises (SEs) and the SPC provider (PF).

First, social enterprises (SEs) are defined as entrepreneurial organizations that pursue both social and economic value. Each SE operates a business model that generates measurable social and economic outcomes. Under the SPC program, SEs' social outcomes, like their economic outcomes, are assigned a monetary value in KRW, referred to as social value. Meanwhile, we define the private funder (PF) as an external entity that supports social enterprises by providing financial resources, based on its own assessment procedures.

With these roles defined, we specify the interactions between SEs and the PF in the model. First, SEs and the PF enter into a contract in which SEs agree to share both social and economic performance metrics with the PF. In return, the PF commits to providing financial resources based on the social value generated by the SE, as measured by a third-party assessment. Second, when an SE meets or exceeds per-

formance expectations, the PF offers financial compensation, which the SE can then reinvest to enhance either social or economic outcomes. Third, the financial resources obtained by the SE are used for operational purposes in the following time period.

Figure 2 provides an overview of these inter-agent interactions. Along with defining inter-agent roles, we also establish behavioral rules for SEs and PF: (1) SEs disclose performance shaped by dual logics; (2) PF assesses social value on its own terms; (3) compensation partly rewards levels and partly rewards improvements; (4) SEs respond by adjusting motivation and resources; and (5) they then react by reallocating emphasis between economic and social aims for the next period, which feeds back into subsequent performance.

3.3 A formal model

Setup We consider a population of SEs (indexed by $i=1,2,\ldots, N$ evolving over discrete periods $t=0,1,\ldots, K$) with a PF that evaluates social value and allocates compensation. SEs disclose their performance metrics (both social and economic) to the PF. This performance results from each SE's business model, shaped by a blend of e-logic and s-logic. E-logic reflects an SE's alignment with the Corporate model (focused on profit maximization), whereas S-logic reflects an SE's alignment with the State model (focused on welfare maximization). For each SE at the beginning of period t the state is

$$x_{i,t} = (R_{i,t}, M_{i,t}, s_{i,t}, e_{i,t}, EV_{i,t-1}, SV_{i,t-1}) \quad (1)$$

where $R_{i,t}$ denotes resources (cash-like operating funds), $M_{i,t}$ motivation to purse organizational goals (especially social goals) $s_{i,t} \in (0,1)$ the S-logic weight, $e_{i,t} \in (0,1)$ the E-logic weight, $EV_{i,t-1}$ the previously recorded economic value, and $SV_{i,t-1}$ the previously recorded social value. Market benchmarks market price (p_t^m) and market cost (c_t^m) are treated as exogenous parameters; however, their values are determined by calculating the average price and average cost across all agents in the system. Each period features an idiosyncratic sales volumes, $q_{i,t} \sim U(0,1)$, independent across i and t.

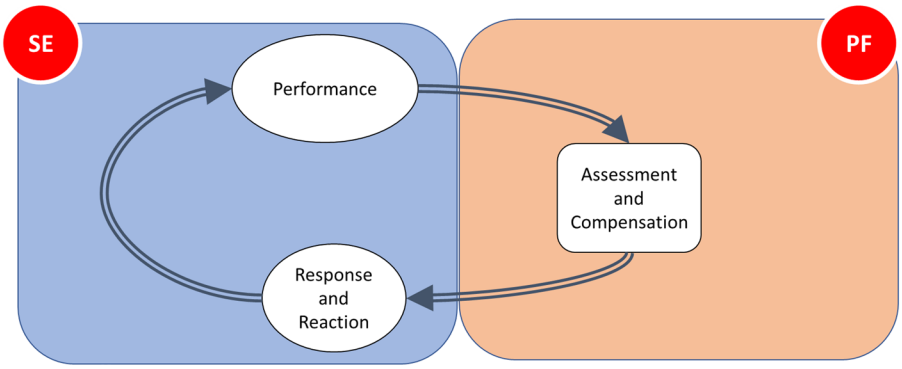


Fig. 2 Specification of Agent Interactions

Economic and social value We define the realized (stochastic) margin:

$$\mu_{i,t} = (p_{i,t} - c_{i,t})\, q_{i,t} \tag{2}$$

where $p_{i,t}$ denotes the price level of SE *i*'s product at time *t*; $c_{i,t}$ indicates the cost level for the product; $q_{i,t}$ is the sales volume at time *t*. Considering the institutional incentives, SE *i*'s economic value at time t is defined as:

$$EV_{i,t} = \mu_{i,t} + R_{i,t} \tag{3}$$

Meanwhile, PF evaluates the SEs' social value based on its own assessment criteria. This creates a potential discrepancy between the SEs' disclosed social performance and the social value determined by the PF. As the SPC program defined (Jung & Shin, 2022), the evaluation of social values has two components:

$$SV_{i,t} = sv^a_{i,t} + sv^b_{i,t} \tag{4}$$

$$s.t.\ sv^a_{i,t} = \begin{cases} q_{i,t}\,|p_{i,t} = p^m_t|\,,\ if\ p_{i,t} < p^m_t \\ 0,\ otherwise \end{cases}$$

$$and\ sv^b_{i,t} = \begin{cases} q_{i,t}(p_{i,t} - (c_{i,t} - c^m_t),\ if\ c_{i,t} < c^m_t \\ 0,\ otherwise \end{cases}$$

In case that $sv^b_\bullet$ generates a negative social value, the SPC program truncates the negative $sv^b_\bullet$ at zero. Such SV evaluation schemes of the SPC program indicate that pricing below the market price contributes $sv^a_\bullet$ (affordability); bearing above-market cost can contribute $sv^b_\bullet$ (e.g., fair wages or ethical sourcing) provided it does not push the implied "price minus adjusted cost" negative.

Compensation The level of compensation for each SE is based on the PF's assessment of social value. Compensation Rules are two-fold: (1) 20% of the social value assessed at the initial time period; (2) 15% of the previous period's social value plus 25% of any increase in social value in the current period. Let $\gamma_{i,t}$ denote compensation. In the initial period, the compensation of SE *i* is defined as:

$$\gamma_{i,t} = 0.2 \times\ SV_{i,t},\ t = 0 \tag{5}$$

Then, in the subsequent periods, the compensation level $\gamma_{i,t}\,(t > 0)$ is determined

$$\gamma_{i,t} = 0.15 \times\ SV_{i,t-1} + 0.25 \times\ max\,(0, SV_{i,t} - SV_{i,t-1})\,, t \geq\ 1, \tag{6}$$

Response SEs adjust their motivation levels for dual goals and their available resources based on the compensation received. First, the compensation ($\gamma_{i,t}$) augments resources one-for-one:

$$\mathrm{R}_{i,t} = R_{i,t-1} + \gamma_{\,i,t-1} \tag{7}$$

A success ratio ($\theta_{\,i,t}$) is then computed using the post-compensation resource base:

$$\theta_{\,i,t} = \begin{cases} 0, \text{ if} \gamma_{\,i,t}=0 \\ \frac{\gamma_{\,i,t-1}}{R_{i,t-1}}, \text{ if} \gamma_{\,i,t}>0 \end{cases} \tag{8}$$

Given this success ratio, motivation $M_{i,t}$ is computed as a conditional probability influenced by S-logic and E-logic:

$$\mathrm{M}_{i,t} = \frac{\theta_{\,i,t-1} \cdot \, s_{i,t-1}}{\theta_{\,i,t-1} \cdot \, s_{i,t-1} + (1 - \theta_{\,i,t-1}) \cdot \, \mathrm{e}_{i,t-1}} \tag{9}$$

The S-logic is fueled by the motivation level ($M_{i,t}$), whereas the E-logic can be diluted through the increase in $M_{i,t}$, as these two logics are incompatible and paradoxical (Smith and Besharov 2019). In this model, the logics (either S or E) are updated via logistic squashing maps that keep them in (0,1) without imposing a simplex constraint:

$$\begin{gathered} s_{i,t} = \sigma \, \left(s_{i,t-1} \cdot \, M_{i,t-1}\right), \; e_{i,t} \\ = \sigma \, \left(e_{i,t-1} \cdot \, (1 - M_{i,t-1})\right), with \, \sigma \, (z) = \frac{e^z}{1+e^z} \end{gathered} \tag{10}$$

Reaction SEs utilize the resources provided by PF strategically in the next operating period, guided by their motivation toward social values. Internal decision-making processes play a role, with SEs adapting their approach based on both internal and external conditions. E-logic directs SEs to focus proportionally on economic outcomes (e.g., revenue generation), addressing market needs, and achieving financial gains. In contrast, S-logic directs SEs to focus proportionally on enhancing social impact (e.g., social value generation), addressing social needs, and attaining social legitimacy. These reactions govern the allocation of resources toward SV generation, with resource distribution influenced by prevailing costs and prices. Thus, the costs are re-adjusted with the updated S and E logics:

$$\mathrm{c}_{i,t} = \mathrm{c}_{i,t-1} + \rho \, (\mathrm{s}_{i,t} - \mathrm{e}_{i,t})\mathrm{R}_{i,t}, \tag{11}$$

An increase in S-logic raises costs proportionally to the available resource base, while a shift toward E-logic mitigates this cost pressure. Operationally, the adjustment budget is fixed at one-half of resources in period *t*, i.e., $\rho = 0.5$, and is applied to cost updates.

3.4 Analytics strategies

Using the agent-based model, we explore how the defined agents behave over time. To do this, we first classify the types of agents by examining the combination of two institutional logics: S-logic and E-logic. S-logic represents actions rooted in the insti-

tutional logic of the state. Under this logic, social enterprises are primarily focused on fulfilling their social mission. They strategically plan actions to achieve social impact and adapt their business models to effectively address the social issues they aim to resolve. E-logic, on the other hand, directs organizational actions toward economic outcomes, including growth, profit, and responsiveness to the business environment. Through this logic, social enterprises prioritize economic viability, strategize to meet financial targets, and adjust organizational components associated with their social mission to align better with business demands.

Because social enterprises operate within both S-logic and E-logic, the ways in which these two logics are combined within an organization define distinct types of social enterprises (e.g., Pache and Santos 2010, 2013; Jay 2013). For simplicity, we categorize four types of agents based on the combination of these logics, as illustrated in Fig. 3.

Type I is characterized by low S-logic and low E-logic, representing nascent social enterprises where both logics are weakly embedded. With this limited integration of institutional logics, Type I organizations exhibit a variable composition of logics, or hybridity. Type II has low E-logic and high S-logic, describing mission-oriented social enterprises. With a strong emphasis on S-logic over E-logic, these organizations primarily focus on actions that advance social goals. Type III is defined by high E-logic and low S-logic, representing profit-oriented social enterprises with a focus on economic performance. Type IV exhibits high S-logic and high E-logic, indicating social enterprises that integrate both logics into their business models and organizational structure.

Following this typology, we defined 1,000 agents per type, each with unique initial levels of S-logic and E-logic, randomly generated. We then ran simulations with this computational model over a period of seven years. The agent-based model tracked each agent's values across key variables (i.e., motivation, resources, economic value, and social value), resulting in distributions of agent behaviors. To streamline our findings, we averaged these values to observe how each agent type moved within the Resource-Motivation and Economic Value-Social Value coordinates. Figure 4 illustrates the behavioral trajectories of social enterprises in this coordinate space. By analyzing the paths of each agent type, we aim to understand how institutional incentives influence the motivation of social enterprises over time.

		S-Logic: Low	S-Logic: High
E-Logic: Low		Type I - Nascent social enterprises - Weakly embedded logics	Type II - Mission-oriented social enterprises - S-logic dominantly embedded
E-Logic: High		Type III - Profit-oriented social enterprises - E-logic dominantly embedded	Type IV - Integrated social enterprises - Strongly embedded logics

Fig. 3 Types of Agents

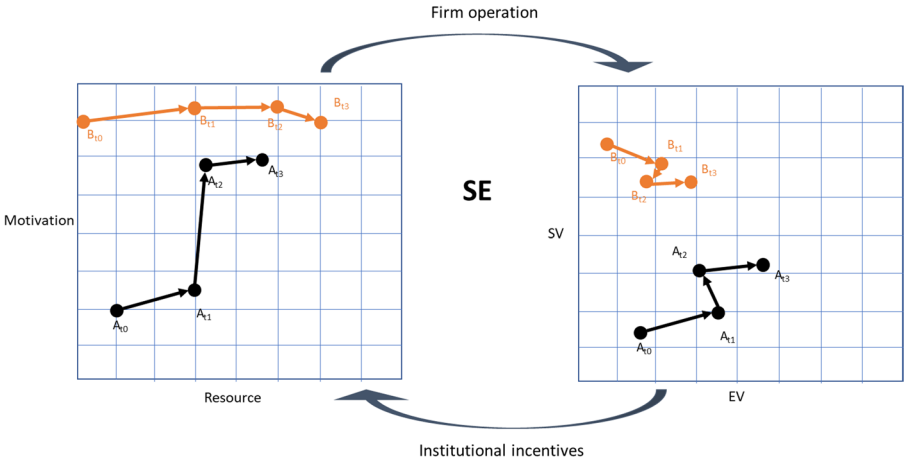


Fig. 4 Illustration of Agents' Behavioral Trajectories

4 Simulation results

4.1 Motivation trajectories of social enterprises with respect to institutional incentives

Figure 5 illustrates how motivation evolves over time with the involvement of the SPC program in social enterprises' operations. The solid lines represent the average motivation levels for each type of social enterprise, while the dotted lines indicate the upper and lower bounds of the confidence intervals.

Starting from a common origin at time 1, the graph demonstrates how the PF's institutional incentives influence each SE's motivation over time. Overall, PF's economic compensation stimulates SEs, resulting in a general upward trend in motivation. However, the rate of motivational growth slows over time, suggesting that external incentives have a limited impact on motivation levels, fostering growth within certain bounds. Additionally, the variation in motivation levels across agent types increases over time, revealing that the expected impact of institutional incentives becomes increasingly uncertain and variable. Despite this, institutional incentives still contribute positively to motivation.

Figure 6 illustrates the behavior of social enterprises within the Resource-Motivation coordinate space. Motivation levels show an upward trend in line with resource levels across agent types, though the rate of motivational growth diminishes over time. Among agents with contrasting logic compositions (Type II: High S, Low E and Type III: Low S, High E), Type II experiences a greater motivational increase, indicating that SEs focused on social missions (Type II) are more responsive to institutional incentives than those oriented toward economic outcomes (Type III).

When comparing Types III (Low S, Low E) and IV (High S, High E), SEs with integrated logics (Type IV) exhibit a smaller motivational increase than nascent social enterprises (Type III). This suggests that SEs with less-established logics have greater potential to leverage institutional incentives in developing hybridity.

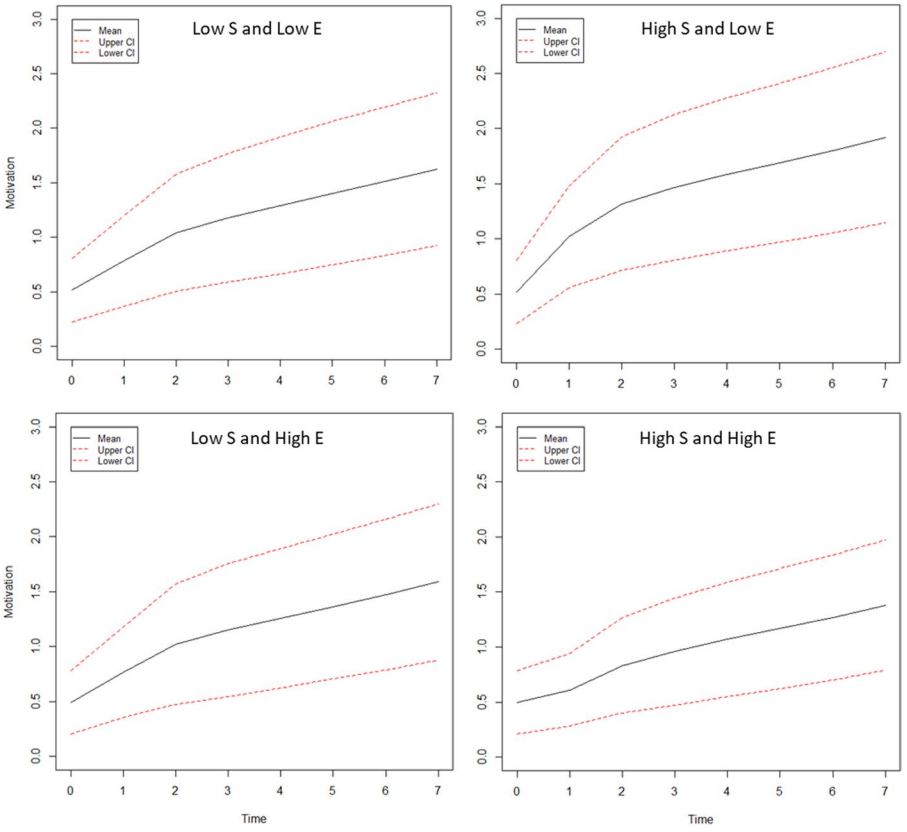


Fig. 5 Motivation Trajectories by Agent Type

4.2 Dual-purpose-pursuit trajectories of social enterprises with respect to institutional incentives

Figures 7 and 8 display the trajectories of economic values (EV) and social values (SV) for each type of social enterprise, respectively. With institutional incentives, both values steadily increase over time, although their volatility also grows. These findings suggest that institutional incentives can support social enterprises in enhancing their overall performance.

However, the positive effects of institutional incentives on both values are not constant. In Fig. 9, we observe inflection points in the EV-SV trajectories at certain time intervals. The slopes in Fig. 9 illustrate the rate at which SV increases relative to EV. When the slope is steeper than the 45-degree reference line (dotted in Fig. 9), social values grow faster than economic values. Comparing the tipping points, where economic value growth begins to slow, across agent types reveals that Type IV reaches this point later than other types. This suggests that Type IV sustains growth longer under institutional incentives.

When institutional incentives are removed from the model, inflection points occur at earlier time steps. This indicates that, although institutional incentives may not

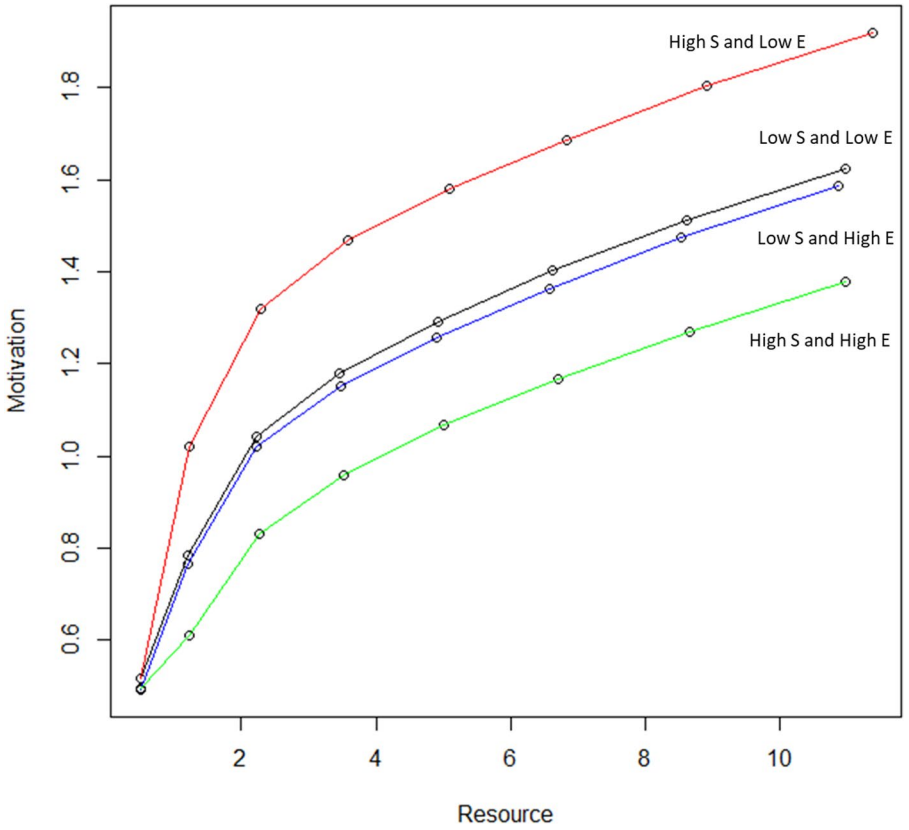


Fig. 6 Agentic Trajectories in the Resource-Motivation Coordinate

fully enable social enterprises to sustain both social and economic values indefinitely, they play a protective role in helping social enterprises remain resilient to external business conditions. While the incentives have limited effectiveness in consistently motivating dual-purpose pursuit, they serve a preventive function, supporting the pursuit of both goals.

5 Discussion and conclusion

Sustaining hybridity is challenging, as social enterprises must both legitimize their social missions within their business models and ensure these models remain viable within a hybrid organizational structure. This study examines whether and how external incentive mechanisms affect the behaviors of social enterprises. To capture the diversity in social enterprise behaviors, we used an agent-based model to simulate responses to a specific institutional incentive program. This program, implemented in South Korea, provides pay-for-performance compensation to social enterprises, and our model was built upon qualitative analyses of social enterprises that have participated in the program.

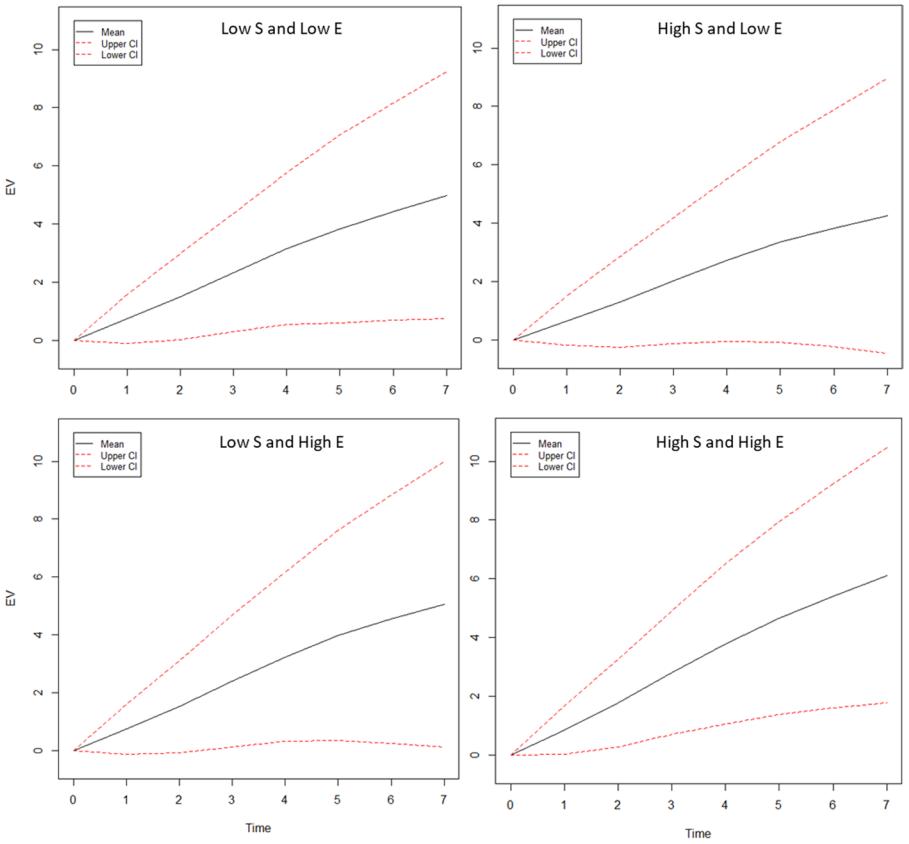


Fig. 7 Trajectories of Economic Values by Agent Type

From our simulation experiments, we found that institutional incentives can encourage social enterprises to pursue both social missions and economic profits, but these effects are time-limited. While incentive mechanisms can temporarily increase motivation for dual-purpose pursuit, they do not sustain it long-term. We argue that this temporal limitation arises from the inherent nature of social enterprise business models, where components aimed at social impact often conflict with those focused on economic performance. This structural paradox influences decision-making within social enterprises. As prior studies have noted (e.g., Grimes et al. 2019; Mia and Lee 2017), hybrid organizations tend to prioritize economic goals and adjust their operations for survival. External incentives can redirect focus toward social goals and rearrange priorities to align with their mission. However, this paradoxical structure of hybrid organizations limits the lasting impact of such incentives. Similar to how extrinsic motivation has limited effects on behavioral change (Herzberg 1966), we must recognize the temporally bounded impact of institutional incentives on sustaining hybridity.

On the other hand, this limited duration of impact can benefit nascent hybrid organizations, which struggle with the "liability of newness." These organizations can

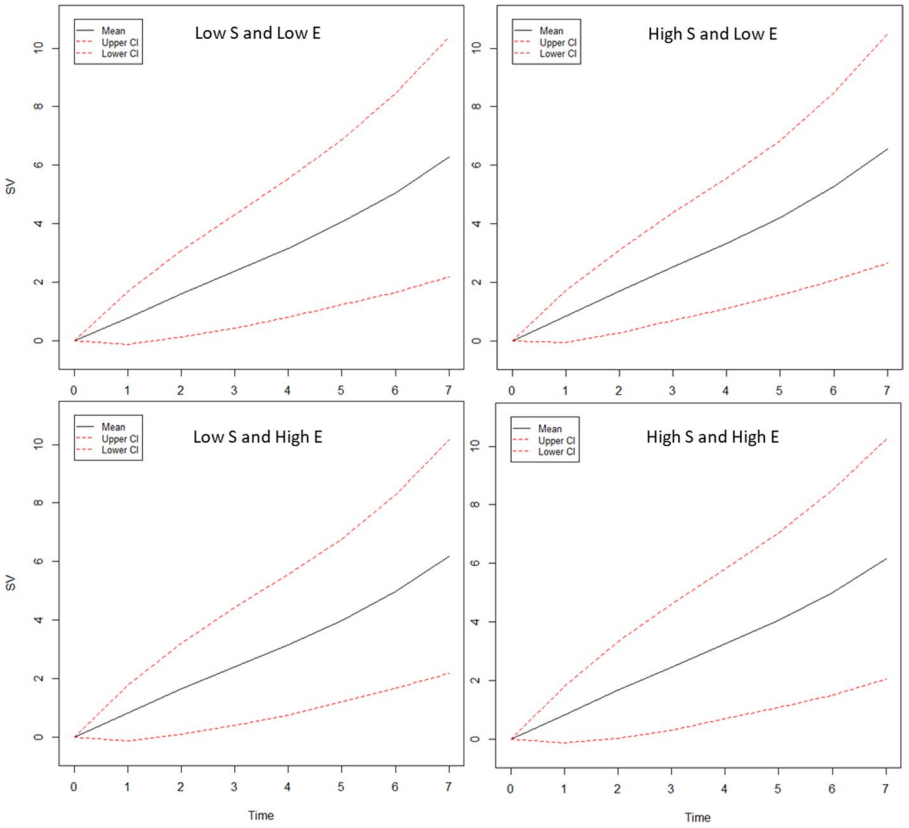


Fig. 8 Trajectories of Social Values by Agent Type

leverage temporary incentives to build legitimacy within their business environment and strengthen their dual-purpose mission. Increased resources boost their motivation for pursuing both social and economic goals, supporting their economic viability and survival.

The dual role of institutional incentives highlights the need for further research on sustaining hybridity through both external and internal means. First, while agent-based models provide valuable insights, they do not fully capture the empirical realities of hybrid organizations. Positivistic approaches could enhance our computational findings. At the micro level, studies could investigate how social entrepreneurs navigate complex landscapes shaped by competing institutional logics. By focusing on how entrepreneurs interpret and reconcile these institutional conflicts, researchers could empirically explore the process of logic composition. At the macro level, research could examine how external actors, such as ecosystems, can sustain hybridity by institutionalizing incentive mechanisms. Considering the limited impact of direct incentives, studies could explore how ecosystem actors collaboratively build governance systems to more effectively support hybrid organizations. Second, this study centers on social performance as the evaluation target, while economic performance emerges endogenously through the price–cost–resource dynamics. Although

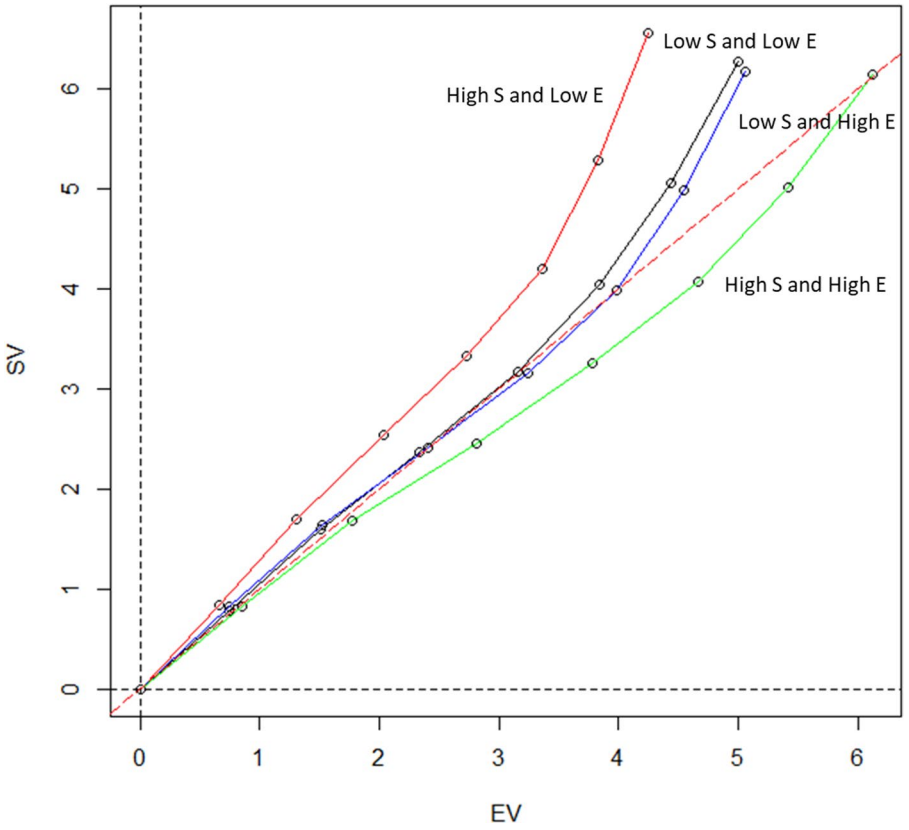


Fig. 9 Agentic Trajectories in the EV-SV Coordinate

our simulations reveal co-development of social and economic outcomes under certain parameterizations, we do not identify the causal channels that link social-value–based institutional incentives to subsequent economic gains. Future research should examine whether, and through which mechanisms, incentives aimed at fostering social value spill over to economic value, for example, via legitimacy-driven demand shifts, preferential access to capital or procurement, learning effects that reduce unit costs, or price premia for credence attributes. The compensation rule itself likely moderates this interplay; distinguishing level-based from improvement-based payments and estimating their elasticities with respect to both performance dimensions would enable counterfactual policy analysis. Therefore, a formal treatment of the social–economic performance linkage, including potential nonlinearities and boundary conditions such as market maturity, mission orientation (E- vs. S-logic), and assessment criteria can be considered as a primary avenue for future work.

Acknowledgments This research was supported by Center for Social value Enhancement Studies (CSES).

Author contributions The is a single-authored paper.

Funding Open Access funding enabled and organized by Ewha Womans University

Data availability No datasets were generated or analysed during the current study.

Declarations

Competing interests The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/4.0/.

References

Ansell C, Boin A, Farjoun M (2015) dynamic conservatism: How institutions change to remain the same. In: Kraatz MS (ed) Institutions and ideals: Philip Selznick's legacy for organizational studies. Emerald Group Publishing limited, pp 89–119

Antosz P, Bharwani S, Borit M, Edmonds B (2022) An introduction to the themed section on 'Using agent-based simulation for integrating qualitative and quantitative evidence'. Int J Soc Res Methodol 25(4):511–515

Au K, Jeong SS, Hsu AJ, Xiao Y (2024) When does prosocial motivation deliver? A dual-motivations approach to social enterprise outcomes. J Bus Ethics 193(1):159–178

Battilana J, Dorado S (2010) Building sustainable hybrid organizations: The case of commercial microfinance organizations. Acad Manag J 53:1419–1440

Battilana J, Lee M (2014) Advancing research on hybrid organizing–insights from the study of social enterprises. Acad Manag Ann 8(1):397–441

Battilana J, Besharov M, Mitzinneck B (2017) On hybrids and hybrid organizing: A review and roadmap for future research. SAGE Handb Organizational Institutionalism 2:133–169

Battilana J, Obloj T, Pache AC, Sengul M (2022) Beyond shareholder value maximization: Accounting for financial/social trade-offs in dual-purpose companies. Acad Manage Rev 47(2):237–258

Besharov ML, Mitzinneck BC (2021) Organizational Hybridity: Perspectives, Processes, Promises. Research in the Sociology of organizations, Vol 69. Emerald Publishing Limited, Bingley, UK

Bretos I, Errasti A, Marcuello C (2024) Power in the process of reversing mission drift in hybrid organizations: the case of a French multinational worker co-operative. Bus Soc 63(7):1602–1638

Bryson JJ, Ando Y, Lehmann H (2007) Agent-based modelling as scientific method: a case study analysing primate social behaviour. Philosophical Trans Royal Soc B: Biol Sci 362(1485):1685–1699

Cyert RM, March JG (1963) A behavioral theory of the firm. Englewood Cliffs, NJ: Prentice-Hall

De Cuyper L, Clarysse B, Wright M (2024) Doing good while making profits: a typology of business models for social ventures. Strateg Entrep J 18(2):258–285

Dosi G, Napoletano M, Roventini A, Stiglitz JE, Treibich T (2020) Rational heuristics? Expectations and behaviors in evolving economies with heterogeneous interacting agents. Econ Inq 58(3):1487–1516

Fu JS (2024) Social-market hybridity in social ventures: Scale development and validation. Bus Soc 63(2):452–486

George G, Dahlander L, Graffin SD, Sim S (2016) Reputation and status: Expanding the role of social evaluations in management research. Acad Manag J 59(1):1–13

George G, Haas MR, McGahan AM, Schillebeeckx SJ, Tracey P (2023) Purpose in the for-profit firm: A review and framework for management research. J Manag 49(6):1841–1869

Ghorbani A, Dijkema GP, Schrauwen N (2015) Structuring qualitative data for agent-based modelling. J Artif Soc Soc Simul 18(1):2
Goldstone RL, Janssen MA (2005) Computational models of collective behavior. Trends Cogn Sci 9(9):424–430
Greve HR (2002) Sticky aspirations: Organizational time perspective and competitiveness. Organ Sci 13(1):1–17
Grimes MG, Williams TA, Zhao EY (2019) Anchors aweigh: The sources, variety, and challenges of mission drift. Acad Manage Rev 44(4):819–845
Han TA (2022) Institutional incentives for the evolution of committed cooperation: ensuring participation is as important as enhancing compliance. J R Soc Interface 19(188):20220036
Herzberg F (1966) Work and the Nature of Man. World Publishing, Cleveland
Howick S, Megiddo I (2024) A framework for conceptualising hybrid system dynamics and agent-based simulation models. Eur J Oper Res 315(3):1153–1166
Im J, Sun SL (2025) Problemistic search for a better world: risk-taking of social ventures in alleviating poverty. J Small Bus Manage (1):30. https://doi.org/10.1080/00472778.2025.2467393
Jay J (2013) Navigating paradox as a mechanism of change and innovation in hybrid organizations. Acad Manag J 56(1):137–159
Jung SM, Shin JY (2022) Social performance incentives in mission-driven firms. Manag Sci 68(10):7631–7657
Kurland NB, Schneper WD (2024) A social enterprise's hybridising journey to reconcile goals and structure with identity. J Social Entrepreneurship 15(2):686–711
Litrico JB, Besharov ML (2019) Unpacking variation in hybrid organizational forms: Changing models of social enterprise among nonprofits, 2000–2013. J Bus Ethics 159(2):343–360
McMullen JS (2018) Organizational hybrids as biological hybrids: Insights for research on the relationship between social enterprise and the entrepreneurial ecosystem. J Bus Ventur 33(5):575–590
McMullen JS, Bergman BJ Jr (2017) Social entrepreneurship and the development paradox of prosocial motivation: a cautionary tale. Strateg Entrep J 11(3):243–270
Mersland R, Strøm RØ (2010) Microfinance mission drift? World Dev 38(1):28–36
Mia MA, Lee HA (2017) Mission drift and ethical crisis in microfinance institutions: What matters? J Clean Prod 164:102–114
Mongelli L, Rullani F, Ramus T, Rimac T (2019) The bright side of hybridity: Exploring how social enterprises manage and leverage their hybrid nature. J Bus Ethics 159:301–305
Morrison AD, Mota R (2023) A theory of organizational purpose. Acad Manage Rev 48(2):203–219
Neckebrouck J, Zellweger T (2024) Decision-making in entrepreneurial teams with competing economic and noneconomic goals. *Strategic Entrepreneurship Journal*. *Forthcoming*. Retrieved from https://doi.org/10.1002/sej.1524
Nie S (2024) Does intellectual property rights protection matter for low-carbon transition? The role of institutional incentives. Econ Model 140:106842
Noh S, Shin D, Kim S (2023) Problemistic search and hybrid organizations: multiple sources of performance feedback in diversifications by corporate foundations in Korea. Asian Bus Manage 22(1):188–216
Pache AC, Santos F (2010) When worlds collide: The internal dynamics of organizational responses to conflicting institutional demands. Acad Manage Rev 35(3):455–476
Pache AC, Santos F (2013) Inside the hybrid organization: Selective coupling as a response to competing institutional logics. Acad Manag J 56(4):972–1001
Pache AC, Battilana J, Spencer C (2024) An integrative model of hybrid governance: The role of boards in helping sustain organizational hybridity. Acad Manag J 67(2):437–467
Palakshappa N, Dodds S, Grant S (2024) Tension and paradox in women-oriented sustainable hybrid organizations: a duality of ethics. J Bus Ethics 190(2):327–346
Ramus T, Vaccaro A, Brusoni S (2017) Institutional complexity in turbulent times: Formalization, collaboration, and the emergence ofblended logics. Academy of Management Journal, 60(4):1253–1284
Selznick P (1957) Leadership in administration: A sociological interpretation. New York: Harper & Row
Shepherd DA, Williams TA, Zhao EY (2019) A Framework for Exploring the Degree of Hybridity in Entrepreneurship. Acad Manage Perspect 33(4):491–512
Silverman E, Gostoli U, Picascia S, Almagor J, McCann M, Shaw R, Angione C (2021) Situating agent-based modelling in population health research. Emerg Themes Epidemiol 18(1):10
Smith WK, Besharov ML (2019) Bowing before dual gods: How structured flexibility sustains organizational hybridity. Adm Sci Q 64(1):1–44

Smith WK, Gonin M, Besharov ML (2013) Managing social-business tensions: A review and research agenda for social enterprise. Bus Ethics Q 23(3):407–442
Suddaby R, Manelli L, Fan Z (2023b) Corporate purpose: a social judgement perspective. Strateg Sci 8(2):202–211
Suddaby R, Israelsen T, Bastien F, Saylors R, Coraiola D (2023a) Rhetorical history as institutional work. J Manag Stud 60(1):242–278
Thornton PH, Ocasio W, Lounsbury M (2012) The institutional logics perspective: A new approach to culture, structure, and process. Oxford University Press, Oxford, U.K.
Vladasel T, Parker SC, Sloof R, Van Praag M (2024) Revenue drift, incentives, and effort allocation in social enterprises. J Econ Manag Strateg 33(3):630–651
Wall F (2016) Agent-based modeling in managerial science: an illustrative survey and study. RMS 10(1):135–193
Wang F, Guo C, Chen J, Sun SL (2025) Financial/Social Trade-Offs in Dual-Purpose Companies. *Journal of Management Studies*. *Forthcoming*. Retrieved from https://doi.org/10.1111/joms.13257
Wry T, York JG (2017) An identity-based approach to social enterprise. Acad Manage Rev 42(3):437–460
Wu J, Ohya T, Sekiguchi T (2024) Applications of agent-based modeling and simulation in organization management: a quarter-century review through bibliometric mapping (1998–2022). Comput Math Organ Theory 30(1):1–31
Yamini R, Soloveva D, Peng X (2022) What inspires social entrepreneurship? The role of prosocial motivation, intrinsic motivation, and gender in forming social entrepreneurial intention. Entrepreneurship Res J 12(2):71–105
Yang L, Gilbert N (2008) Getting away from numbers: Using qualitative observation for agent-based modeling. Adv complex Syst 11(02):175–185
Yepes-Lugo CA (2019) Effects of Institutional Work on the Emergence and Importance of Organizations in the Huila Sub-region Area in Colombia: An Agent-based Modeling Approach. Change Management: Int J 19(2):1–21

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Sang-Joon Kim is an associate professor of management and organization at Ewha School of Business, Ewha Womans University, Seoul, Korea. He received his PhD from the University of California, Irvine. His research interests center on understanding social construction aspects of social phenomena, especially knowledge creation, technology commercialization, entrepreneurship, and technological and social innovation. His research appears at Academy of Management Journal, Strategic Management Journal, Journal of Business Ethics, and other management-related journals.