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Are non-economic goals and financial performance friends or foes in hybrid ventures? A duality perspective on academic spin-offs

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Abstract

Research Summary: This study draws on the behavioral theory of the firm and a duality perspective to investigate the impact of founders' focus on academic goals on the financial performance of academic spin-offs (ASOs)—a specific type of hybrid venture. We theorize that such relationship follows an inverse U-shaped curve and is moderated by the degree of academic ownership. These hypotheses are tested using a sample of 179 Italian ASOs. Our findings indicate that when academic ownership is low, the relationship displays an inverted U-shape. Moreover, as academic ownership increases, the relationship flattens and eventually shifts to a U-shape. These results challenge the prevailing notion of inherent conflicts between economic and non-economic logics in hybrid ventures, demonstrating when

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focusing on non-economic (e.g., academic) goals enhances financial outcomes.

Managerial Summary: Academic spin-offs (ASOs) play a pivotal role in science commercialization and often pursue academic goals due to their academic origins. However, the extent to which founders' focus on academic goals benefits or hinders ASOs' financial performance has remained largely underexamined. In this study of 179 Italian ASOs, we investigate the relationship between a focus on academic goals and firm performance. Our findings reveal that at lower levels of academic ownership, a moderate focus on academic goals is optimal for ASOs' financial performance. Conversely, at higher levels of academic ownership, either a low or high focus on academic goals proves optimal for financial performance. These insights can help practitioners improve ASO performance by aligning goal and ownership structures.

KEYWORDS
academic spin-off, behavioral theory of the firm, duality, hybrid organization, ownership structure

1 | INTRODUCTION

Behavioral theories of organizations have long informed how firm decision-makers allocate their attention to multiple and often competing goals (Gaba & Greve, 2019; Kotlar et al., 2018; Mazzelli et al., 2019). In the realm of new ventures, these competing goals frequently stem from diverse institutional logics within which both founders and their firms are embedded (Almandoz, 2014; Ratinho & Bruneel, 2024; Shepherd et al., 2019). The challenges of balancing these competing goals have increasingly attracted entrepreneurship and management scholars, particularly those studying hybrid ventures, firms in which such challenges are most pronounced (McMullen & Bergman, 2017; Williams et al., 2023). Central to this line of inquiry is the assumption (Gaba & Greve, 2019; Ocasio, 1997) that founders' focus on non-economic goals—a defining characteristic of hybrid ventures—often conflicts with the achievement of financial outcomes (Ratinho & Bruneel, 2024; Shepherd et al., 2019; Vedula et al., 2022). This tension is evident across various contexts, including social enterprises (Austin et al., 2006), family firms (Randolph et al., 2019), and academic ventures (Clarysse et al., 2023).

However, recent studies on hybrid ventures have started to argue that economic and non-economic goals, despite their seemingly competing interests, may not necessarily be in conflict (Shepherd et al., 2019; Stephan et al., 2019). Indeed, some initial evidence has suggested that emphasizing non-economic goals can facilitate—rather than interfere with—the pursuit of economic goals, in terms of financial performance, rather than harm it (Abootorabi et al., 2024; Civera et al., 2024; Randolph et al., 2019; Vedula et al., 2022). However, much still needs to be clarified, particularly regarding the extent and circumstances under which non-economic goals and financial outcomes should be viewed as "friends" or "foes." First, recent research has highlighted the importance of considering not just the *presence* of non-economic goals, but also the *extent* to which hybrid ventures focus on them (Abootorabi

et al., 2024; Battilana et al., 2017; Shepherd et al., 2019). Second, the literature on hybrid organizations already has acknowledged that the presence of non-economic goals affects financial performance depending on the involvement of *different types of shareholders* who adhere to varying institutional logics (Abootorabi et al., 2024; Almandoz, 2014; Schou, 2023). Yet, ownership structure represents a critical and underexamined contingency that determines how the extent of the focus on non-economic goals interferes with the pursuit of economic objectives in hybrid ventures.

We address these gaps in the literature by focusing on academic spin-offs (ASOs), that is, firms established to commercialize university-generated knowledge (Agarwal & Shah, 2014; Nikiforou et al., 2018). Rooted in academic environments, yet driven by commercial imperatives, ASOs epitomize hybrid ventures (Abootorabi et al., 2024; Powell & Sandholtz, 2012). Their dual nature not only fosters potential conflicts and tensions, but also underpins their capacity to innovate in technologically complex and uncertain environments (De Keyser & Vandenbempt, 2023; Roche et al., 2020). Although ASOs have commercialization purposes by nature, their founders may also be motivated by scientific advancement and status (Ambos et al., 2008; Clarysse et al., 2023; Hsu & Kuhn, 2023; Perkmann et al., 2019). These academic-oriented pursuits—supporting research, achieving prestige as researchers, and contributing to the reputation of their institutions—are defined in this paper as academic goals, a specific type of non-economic goal emphasized by ASOs' founders (cf. Galati et al., 2020; Hayter, 2015; Iorio et al., 2017; Lam, 2011). Moreover, ASOs' ownership structure, characterized by the degree of academic ownership (e.g., that held by faculty and universities; cf. Lauto et al., 2022), shapes the *view of science* in ASOs (Bolzani et al., 2021; Perkmann et al., 2019) and, thus, can affect how founders' focus on academic goals impacts their financial performance. Therefore, we ask the following research questions: *To what extent does founders' focus on academic goals influence ASOs' financial performance? How does the degree of academic ownership affect this relationship?*

To address our research questions, we draw on insights from the behavioral theory of the firm (Cyert & March, 1963), particularly the concept of attention (Gaba & Greve, 2019), and combine it with a duality perspective. Duality posits that, within hybrid organizations, seemingly opposed logics—economic and non-economic—can both conflict and foster each other (Ashforth & Reingen, 2014; Dahan & Leca, 2025). This extends the traditional view of the behavioral theory of the firm, which often emphasizes tensions and trade-offs in attention allocation within organizations pursuing different organizational goals (Gaba & Greve, 2019). Instead, a duality perspective suggests that focusing on one type of goal can create both *oppositions* and *complementarities* in the pursuit of another, presumably competing goal (Farjoun, 2010). Based on this framework, we propose that founders' focus on academic goals shapes attention allocation in such a way that a low-to-moderate focus on academic goals fosters complementarities that positively impact financial performance, while a moderate-to-high focus leads to oppositions, ultimately resulting in an inverted U-shaped relationship. Furthermore, we hypothesize that ownership structure influences the extent to which complementarities and oppositions between academic goals and financial performance manifest, whereby the curve flattens at higher levels of academic ownership.

We tested these hypotheses on a representative sample of 179 Italian ASOs. Our research makes three contributions to the literature. First, we extend recent research on hybrid ventures, by substantiating the claim that the relationship between economic and non-economic goals in hybrid ventures is "more nuanced than previously understood" (Shepherd et al., 2019, p. 493). Our findings not only support the idea that non-economic goals do not inherently conflict with firms' economic objectives (Stephan et al., 2019), but also reveal the specific circumstances under which they can contribute to financial performance. By shifting the debate from whether economic and non-economic goals are compatible (e.g., Abootorabi et al., 2024; Almandoz, 2014; Civera et al., 2024) to understanding how this can happen, our study highlights when non-economic goals can benefit hybrid ventures' economic success—particularly when an optimal alignment exists between the founding team's goals and the firm's ownership structure. Second, our findings contribute to the literature on competing goals and behavioral theories (Gaba & Greve, 2019; Kotlar et al., 2018; Mazzelli et al., 2019) through a duality perspective. By showcasing the non-linear relationship between the focus on academic goals and financial performance, our study illustrates how the duality of seemingly competing logics, rather than necessarily generating tensions and trade-offs, manifests both in complementarities and oppositions that influence firm financial performance. Moreover, we emphasize that this

manifestation is contingent on the representation of these logics in firm ownership, underscoring the moderating role of academic ownership. Third, we contribute to the growing literature on ASOs' non-economic goals (Abootorabi et al., 2024; Civera et al., 2024; Clarysse et al., 2023). While extant studies have discussed potential advantages and disadvantages linked to the pursuit of non-economic goals, we clarify how the degree of focus on academic goals can represent an asset, rather than liability, depending on the role played by academic ownership in shaping this relationship.

2 | LITERATURE BACKGROUND

ASOs are key actors amid rapid technological disruptions, playing a crucial role in universities' efforts to foster innovation processes and ecosystems (Agarwal & Shah, 2014; Fuller & Rothaermel, 2012; Hahn et al., 2024; Mathisen & Rasmussen, 2019). These organizations operate under conditions of extreme uncertainty, in which decision-making combines academic insights with market imperatives, typifying their status as hybrid organizations (Abootorabi et al., 2024; Criaco et al., 2025; Hahn et al., 2019). ASOs' hybrid nature is reflected in their dual commitment to both academic and market-driven endeavors, often merging the distinct institutional logics of their originating academic institutions with those of the commercial sector (Colombo et al., 2019; Hmieleski & Powell, 2018; Nikiforou et al., 2018; Pilegaard et al., 2010). While this intersection can lead to conflicts and challenges, it also uniquely positions ASOs to capitalize on technological innovation opportunities. By leveraging their academic foundations, ASOs can enhance their competitive edge in the marketplace, turning potential conflicts between academic and economic logics into strategic advantages (De Keyser & Vandenbempt, 2023; Roche et al., 2020).

Consequently, ASO founders' focus on academic goals becomes particularly significant, as these goals represent a distinct type of non-economic organizational objective (Hmieleski & Powell, 2018; Mathisen & Rasmussen, 2019). Academic goals reflect ASO founders' academic motives for venture creation, encompassing the pursuit of further scientific advancement, as well as enhancement of their own and their institutions' reputations through commercial activities (Civera et al., 2024; Criaco et al., 2025; Powell & Sandholtz, 2012; Visintin & Pittino, 2014). Founders' academic goals are a manifestation of the academic logics in which they are embedded, emphasizing peer recognition and scientific reputation through knowledge creation and academic rigor (Clarysse et al., 2023; Engzell et al., 2024; Llopis et al., 2022; Perkmann et al., 2019).

Academic goals' idiosyncratic nature in ASOs often competes with commercial organizations' economic priorities, so the implications of pursuing academic goals on financial performance remain to be understood, in two main respects. First, the academic entrepreneurship literature, which has examined this topic extensively, presents contrasting views (Barbosa & Faria, 2020; Colombo & Piva, 2012; Roche et al., 2020; Woolley, 2017). On one hand, a focus on scientific advancement may enhance firm value by leading to novel inventions with broad market applications (Minola et al., 2021; Simeth & Cincera, 2016). On the other hand, such a focus might impede commercialization by prioritizing scientific and technological aspects over commercial ones (Hahn et al., 2019; Knockaert et al., 2011). Thus, academic goals simultaneously can serve as both an asset and liability for an ASO's financial performance. Firms in general, and ASOs in particular, can focus on non-economic goals—such as academic ones—to varying degrees (Powell & Sandholtz, 2012; Stephan et al., 2019), so just asking whether academic goals enhance or hinder financial performance might be limiting and fails to capture nuances advocated through a behavioral perspective on organizational goals (Kotlar et al., 2018). To reconcile these conflicting perspectives, a deeper understanding of the optimal level of focus on academic goals is essential in determining their impact on firms' financial outcomes.

Second, the literature on ASOs underscores the importance of ownership structure—specifically the presence of academic and non-academic shareholders—in affecting the relationship between academic goals and financial performance. This ownership structure reflects the relative dominance of either the academic or commercial view of science (Bolzani et al., 2021; Schou, 2023). Such differing views can create pressures that shareholders exert on how scientific pursuits, guided by founders' emphasis on academic goals, are conducted in ASOs. According to the

behavioral theory of the firm, such pressures exerted by shareholders can influence the extent to which organizational goals are translated into outcomes, often shaped by conflicts and political bargaining (Gavetti et al., 2012). Therefore, understanding the role of academic ownership is essential in explaining how academic goals impact financial performance and for resolving conflicting findings in the literature.

3 | THEORY AND HYPOTHESES

To develop hypotheses regarding the relationship between ASOs' focus on academic goals and financial performance, we draw on the behavioral theory of the firm (Cyert & March, 1963), integrating insights from a duality perspective (Farjoun, 2010). The behavioral theory of the firm provides a comprehensive framework for understanding how organizational goals shape internal processes and behaviors, ultimately impacting firm performance (Bromiley & Rau, 2022; Gaba & Greve, 2019). In hybrid ventures, such as ASOs, these goals usually stem from founders' motivations and from diverse institutional logics in which they are embedded, particularly reflecting tensions between academic and commercial priorities (Abootorabi et al., 2024; Civera et al., 2024; Pache & Santos, 2013).

At the core of the behavioral theory of the firm is the notion that attention is a limited and scarce resource within firms, and that how it is allocated directly influences decision-making and performance outcomes (Gavetti, 2012; Ocasio, 1997). Founders must prioritize activities based on available attention, which is driven by the organizational goals they set. Allocation of attention, shaped by these goals, becomes critical in determining two key functions within the firm. The first one concerns activating learning and adaptation, i.e., processes through which organizations adjust their routines, strategies, and decision-making - based on experience, feedback, and changing environmental conditions - to better align them with their goals and improve performance (Cyert & March, 1963). The second function concerns coordination of activities across different domains, that is, the capacity to align and integrate diverse organizational tasks and resources to reconcile conflicting goals and enhance collective problem-solving (Mitchell et al., 2016). These functions interact with firm ownership, as it imposes a distinct view on the activities that founders pursue to achieve their goals and to which they allocate attention (Gaba & Greve, 2019; Mazzelli et al., 2019).

While the behavioral theory of the firm typically portrays opposing goals as conflicting due to the firm's limited attention, recent research has begun to challenge this view (Stephan et al., 2019). In this context, a duality perspective is particularly useful, as it provides a framework in which both complementarities and oppositions can manifest from the simultaneous presence of seemingly contrasting elements, such as economic and non-economic logics (Ashforth & Reingen, 2014; Graetz & Smith, 2008). From this perspective, mechanisms (e.g., academic goals) tied to one side of duality not only create tensions (oppositions) with outcomes from the opposite side (e.g., financial performance), but also can support outcomes related to the latter side (complementarities) (see, e.g., Farjoun, 2010 on exploration vs. exploitation).

The duality framework is particularly well-suited for analyzing ASOs, which operate at the nexus of apparently conflicting logics (Cantner et al., 2024; Criaco et al., 2025; Jain et al., 2009; Perkmann et al., 2019). Extant research on this topic has often portrayed the presence of non-economic goals in ASOs as either an asset or a liability for financial performance (e.g., Abootorabi et al., 2024). Adopting a duality perspective instead allows us to recognize that academic goals and financial performance may not inherently manifest as either allies or adversaries. Instead, whether they enact oppositions or complementarities depends on specific circumstances.

To sum up, to theorize about the complex relationship between academic goals and financial performance within ASOs, we build on the behavioral theory of the firm and extend it using insights from a duality perspective. The behavioral theory offers the concept of attention allocation as a key mechanism through which goals influence firm performance. Meanwhile, a duality perspective provides a framework that acknowledges how this allocation of attention can reveal complementarities and oppositions between academic goals and financial outcomes.

3.1 | Academic goals and financial performance

In hybrid ventures, founders' focus on non-economic goals significantly influences how attention is allocated, ultimately impacting financial performance (Abootorabi et al., 2024). As founders' focus on academic goals shifts from low to moderate levels, ASOs begin to allocate more attention to "scientifically centered" learning and adaptation activities, particularly centered around technical and scientific validation of the knowledge being commercialized (Furr, 2019). For instance, ASOs may engage in studying technical problems and collaborating with partners and users to share knowledge (De Keyser & Vandenbempt, 2023). This scenario, which we term *academic exploration*, allows ASOs to expand their knowledge base and contributes to commercial applications, ultimately enhancing financial performance in several ways. First, academic exploration is crucial for navigating the high volatility and technological complexity of operational environments, ultimately leading to favorable economic and financial performance (Minola et al., 2021). Second, increased attention paid to academic exploration, driven by a stronger focus on academic goals, can lead to research achievements that, while enhancing the prestige of both researchers and their institutions (Civera et al., 2024; Pitsakis et al., 2015), also validates ASOs' technologies, attracting commercial interest from customers and partners (Fisher et al., 2016). Finally, prioritizing academic advancements encourages ASOs to invest in research collaborations, enriching their technological and scientific foundations (Colombo & Piva, 2012; Fleming & Sorenson, 2004). These exploratory behaviors foster adaptability in dynamic sectors, enhance learning, and enable ASOs to reconfigure products to meet evolving market demands, thereby securing a competitive edge that translates into higher financial performance (Laursen & Salter, 2006; Palich et al., 2000; Uotila et al., 2009).

Overall, this increased attention paid to academic exploration fosters financial performance through a greater repertoire of possible commercial applications, more robust technologies, and increased commercial appeal. While a low-to-moderate focus on academic goals may introduce challenges related to aligning and integrating diverse organizational actions and resources, in this scenario, coordination challenges remain moderate, as the limited attention paid to academic exploration does not compromise activities and resources dedicated to commercial exploitation. From a duality perspective, increasing the focus on academic goals from low to moderate fosters complementarities between academic pursuits and business outcomes, thereby enhancing financial performance.

However, as founders' focus on non-economic goals increases from moderate to high levels, allocation of ASOs' attention—a limited resource—shifts predominantly toward non-economic logics, often at the expense of essential business-related actions. This scenario, which we term *academic exploitation*, occurs when ASOs predominantly exploit the firm for academic, rather than commercial, results. Such a transition can introduce substantial challenges in coordinating and integrating academic activities and commercialization efforts, ultimately leading to misalignment with market needs and a decline in financial performance. First, even though an increased focus on prestigious academic projects may yield some additional learning, it often results in products that are technologically advanced, yet misaligned with market demands, thereby compromising their potential for rapid commercial success (Bolzani et al., 2021; De Keyser & Vandenbempt, 2023). For example, founders' strong focus on basic research, while enhancing academic prestige, also could result in offerings that fail to incorporate consumers' feedback or adequately protect intellectual property (Furr, 2019; Wales et al., 2013). This misalignment hampers financial returns and poses long-term risks to ASOs' viability within the competitive landscape. Furthermore, excessive investments in academic pursuits can divert critical resources from commercialization efforts, leading to delays in product development and market entry.

Overall, predominant attention paid to academic exploitation introduces significant coordination problems that undermine financial performance by creating difficulties in integrating academic efforts with commercial activities, such as safeguarding intellectual property, stabilizing technology commercialization, and establishing legal frameworks to achieve immediate returns from innovation (Cantner et al., 2024; Wright, 2014). Proper integration of these efforts is crucial for securing financial performance. From a duality perspective, increasing the focus on academic goals from moderate to high levels leads to oppositions, ultimately hindering financial performance.

Given these dynamics, we propose an inverted U-shaped relationship between the focus on academic goals and ASOs' financial performance. We argue that there exists an optimal point up to which increasing the focus on academic goals enhances financial performance. Beyond this point, an overly intense focus on these goals leads to declining financial outcomes. Therefore, we hypothesize:

H1. *An inverted U-shaped relationship exists between the focus on academic goals and ASOs' financial performance.*

3.2 | The contingent role of academic ownership

In hybrid ventures, such as ASOs, communications, negotiations, and bargaining among shareholders (Connelly et al., 2010; Foss et al., 2019; Garg & Furr, 2017; Rindova & Courtney, 2020) exert pressures on how founders conduct activities to pursue organizational goals. Ownership structure thus serves as a key governance feature that can amplify or mitigate oppositions and complementarities between non-economic goals and financial performance. Specifically, within ASOs, the degree of academic ownership—defined as the proportion of shares held by academics in the entrepreneurial team and the parent university—represents a critical element of ownership structure (Ferretti et al., 2020; Sciarelli et al., 2021).

High academic ownership typically fosters a uniform mindset, governed by an academic view of science within organizations (Perkmann et al., 2019) oriented toward academic debates and public dissemination guided by researchers' curiosity (Ensley & Hmieleski, 2005; Furr, 2019). This academic view of science shapes learning and coordination functions, and ultimately affects the relationship between founders' increasing focus on academic goals and financial performance.

Conversely, lower levels of academic ownership are associated with greater involvement by non-academic entities, such as business angels, corporations, or venture capital investors (Franklin et al., 2001; Mathisen et al., 2022; Nicolaou & Birley, 2003). These actors introduce diverse commercial views on science into organizations, typically emphasizing applied science aimed at solving industrial problems, rather than engaging in academic debates, as well as focusing on confidential innovation projects instead of public dissemination, and prioritizing efficient coordination over exploratory research driven by curiosity (Schou, 2023). While this commercial view (Perkmann et al., 2019) cannot change the academic goals that inspired the venture's creation by its founders (Schou, 2023), it is likely to shape learning and coordination functions as the focus on academic goals increases.

When academic ownership is low, and the focus on academic goals remains in the low-to-moderate range (the upward slope of the inverted U-shaped curve), founders' goals naturally align with owners' commercial view of science. In this context, a moderate level of attention paid to scientific validation and recognition allows for pursuing boosts in reputation of both researchers and institutions without detracting from the focus on commercialization activities (Pitsakis et al., 2015; Powell & Sandholtz, 2012). This alignment between shareholders' commercial view of science and founders' goals reduces the need for extensive negotiation and political bargaining, fostering smoother integration of scientific pursuits and commercial exploitation (Ben-Hafaïedh et al., 2022; Spanò et al., 2022). As a result, it enhances the financial outcomes of science-centered learning activities while keeping coordination problems with commercialization relatively low. Furthermore, scientifically centered learning and adaptation become even more effective when non-academic actors have market-sensing abilities and commercialization efficiency that guide the direction of founders' scientific pursuits. This synergy facilitates the translation of academic exploration into commercial results and financial outcomes (Furr, 2019; Knockaert et al., 2011). Coordination challenges remain low in this scenario of alignment between founders' goals and shareholders' views. Non-academic shareholders can help ASOs integrate technical validation with business-specific issues more easily, such as production and operations (Schou, 2023). As a result of these synergies, complementarities between academic goals and financial performance are strengthened, further steepening the upward slope of the inverted U-shaped relationship outlined in H1.

Conversely, when academic ownership is high, the ASO lacks the commercial view elicited by non-academic shareholders, as well as the above-illustrated synergies with founders' low-to-moderate focus on academic goals. In this scenario, the upward slope of the inverted U-shaped curve flattens, as learning benefits become less pronounced, and coordination challenges become more substantial.

In the downward-slope part of the curve, in which founders' emphasis on academic goals intensifies beyond a moderate level, ASOs predominantly shift their attention toward academic exploitation. In cases of low academic ownership, when founders' focus on academic goals grows beyond a moderate level, goals begin to misalign with the commercial view introduced by non-academic shareholders. This misalignment prompts costly negotiations over how to allocate the organization's limited attention (Randolph et al., 2019). As a result, coordination problems worsen, and the marginal benefits of scientifically centered learning and adaptation activities diminish further. Efforts to balance the predominant focus on scientific pursuits with commercial interests make it increasingly difficult to coordinate tasks efficiently, leading to costly delays, miscommunication, and inefficiencies that harm financial performance (Knockaert et al., 2011), while marginalizing the learning gained from ASOs' research projects further. Thus, the opposition between academic goals and financial performance intensifies, steepening the downward slope of the inverted U-shaped relationship, as outlined in H1. Conversely, when academic ownership is high, the lack of commercial views coming from non-academic shareholders reduces misalignment between founders' goals and shareholders' views on science that, as discussed above, was responsible for lower marginal learning benefits and higher coordination problems. Thus, in this setting, we expect a flattening of the downward part of the curvilinear relationship between the focus on academic goals and financial performance. Accordingly, we hypothesize:

> **H2.** *The degree of academic ownership moderates the inverted U-shaped relationship between the focus on academic goals and ASO financial performance, such that the inverted U-shaped curve becomes steeper (flatter) at a lower (higher) degree of academic ownership.*

4 | METHODS

4.1 | Data collection and sample

To test our hypotheses, we constructed a dataset from two distinct sources: (i) a survey conducted in partnership with a consultancy company with data collection expertise (Lin et al., 2022; Quade et al., 2022); and (ii) the ORBIS database from Bureau Van Dijk (now Moody's). The survey comprised unique data collected in 2015 from Italian ASOs. The initial population for the survey came from the database periodically updated by the network connecting the technology transfer offices of Italian universities, "*Network per la valorizzazione della ricerca*" (Netval), which monitors most university-based firms in Italy (Cesaroni & Piccaluga, 2016). Netval encompasses 72% of all Italian universities, covering 80% of the national academic staff. As of 2015, the Netval observatory included 895 ASOs established since 2003. Our focus on Italian ASOs may be representative of those in most European countries (Benghozi & Salvador, 2014). Like other European countries, Italy has experienced regulatory and policy shifts over the past two decades aimed at enhancing university research commercialization and promoting entrepreneurial activities among research staff. These include governmental assessments of support for technology transfer and of spin-off creation, together with university research performance (Muscio et al., 2016).

The survey was administered between September and October 2015, with data gathered on firm goals, governance, and other characteristics using a structured questionnaire that was pretested on a sample of 10 ASOs. Altogether, 245 companies filled the survey, yielding a response rate of 27.3%, which is consistent with similar studies (e.g., Visintin & Pittino, 2014). In each ASO, the questionnaire was completed by a key member of the venture team, designated as the "leading member," who provided information about the overall organization (e.g., Hahn et al., 2019).

The ORBIS database offers global company information, focusing on private firms and providing detailed, longitudinal data on companies' financial and demographic characteristics. We manually matched the firms from the survey with their accounting data in ORBIS to access detailed financial information covering the period after the survey.

By merging these two datasets and excluding ASOs with missing data on key variables, we compiled a unique sample of 184 ASOs[1] from 50 different universities, representing 75% of the firms in the survey and 20% of the Netval population. The geographical distribution and sectoral stratification, supported by Chi-squared tests, confirmed that our sample is representative of the Italian ASO population. We also examined non-response bias by comparing geographical and sectoral data on respondents, the Netval database, and our initial sample, finding no significant differences. We validated the ownership structure information by comparing it with data from the Italian Chamber of Commerce database of company owners.

Our sample includes companies founded between 2004 and 2014, primarily in the ICT (21.74%) and innovation services (28.80%) sectors. The average firm size, including founding team members, is 6.58 employees, with values ranging from 1 to 20 in the sample. Founding teams average 3.41 members, most of whom are academics (3.33). Further details about the sample are presented in Table A1 (see Appendix A).

4.2 | Measures

4.2.1 | Dependent variable

We used return on assets (ROA) as a proxy for ASOs' financial performance because it is a short-term performance indicator (see Connelly et al., 2017), ideal for capturing near-term effects from academic goals measured in our cross-sectional survey conducted between September and October 2015. This measure allows for a more precise assessment of the extent to which the focus on these goals influences ASOs' financial outcomes in the following years. Moreover, this metric is used commonly to assess small private firms' financial performance (e.g., Davidsson et al., 2009; Minola et al., 2021). We focused on the ROA from 2016 to 2018, calculating the average for this period.[2] ROA values were retrieved from the ORBIS database. We conducted several robustness tests to confirm our results' consistency when employing different financial performance proxies for ASOs.

4.2.2 | Independent variable

The *academic goals* variable reflects ASO founders' focus on non-economic objectives related to the academic context (Civera et al., 2024) for which the venture was established (Abootorabi et al., 2024). In accordance with the framework proposed by Kotlar et al. (2018), we defined academic goals as non-economic desired outcomes that encompass both *internal* aspects (centered around the firm's founders) and *external* aspects (involving stakeholders outside the venture). We assessed the focus on these goals using five-point Likert scales (1 = strongly disagree; 5 = strongly agree), focusing on three specific objectives that are characteristic of the academic environment (Galati et al., 2020; Hayter, 2015; Iorio et al., 2017; Lam, 2011): (i) obtain results that increase ASO founders' prestige and reputation as researchers; (ii) obtain results that increase the prestige and reputation of ASOs' parent universities; and (iii) support and develop research by the department/group to which the ASOs are connected (Cronbach's $\alpha = 0.71$). Interviewing team's leading member provided insights into the organizational goals, ensuring a reliable measure of the ASOs' focus on academic objectives. Given that the team leader often represents the broader firm perspective, particularly within smaller organizations, we are confident about the validity of this approach (Grandi & Grimaldi, 2005).

4.2.3 | Moderating variable

The moderating variable in our study is the *degree of academic ownership*, which we measured as the cumulative ownership percentages held by academic team members and by the university as a shareholder at the time of the survey.[3]

4.2.4 | Control variables

Several control variables were incorporated into our analysis. We controlled for *total assets* (natural logarithm) of the ASO, its *age* (natural logarithm) at the time of the survey, its *sector* (industry dummies; cf. Table A1 in the Appendix A), and its *team size* (i.e., size of the entrepreneurial team, namely those who participate in the company's management). These data were sourced from the survey and verified against the ORBIS database. Furthermore, we included contextual variables such as the *size of the parent university*, measured by number of students enrolled in the university in 2015, which was obtained from universities' institutional websites to gauge the availability of tangible and intangible resources supporting the ASO, as well as ASOs' *geographical area*, for which macroregional dummies were used. Furthermore, we controlled for number of *patents* granted to each ASO (Bruneel et al., 2020) and whether at least one *financial institution* was part of the ASO's ownership (Ben-Hafaïedh et al., 2022). To control for ASOs' heterogeneity in the pursuit of economic goals, we also included two variables related to such goals via

TABLE 1 Means, standard deviations, and correlations.

	1	2	3	4	5	6	7	8	9	10	11
1. ASO financial performance	1.00										
2. Academic goals	−0.13	1.00									
3. Degree of academic ownership	0.09	0.16	1.00								
4. University size (ln)	0.05	0.03	−0.10	1.00							
5. Firm total assets (ln)	0.13	−0.22	−0.18	0.09	1.00						
6. Firm age (ln)	0.16	−0.23	−0.06	0.01	0.48	1.00					
7. Team size	0.01	0.17	0.32	0.01	−0.12	−0.18	1.00				
8. Patents	−0.05	−0.01	−0.07	0.09	0.22	0.02	−0.03	1.00			
9. Financial institutions in the ownership (dummy)	−0.19	−0.01	−0.29	0.12	0.22	0.13	−0.13	0.07	1.00		
10. High growth in turnover	0.03	0.02	0.00	−0.01	−0.03	0.03	−0.11	0.01	−0.20	1.00	
11. Attracting new investors/potential buyers	−0.17	0.05	0.01	−0.10	−0.11	−0.06	0.05	0.11	−0.00	0.08	1.00
Mean	0.00	3.26	0.75	10.09	11.67	1.62	3.50	0.72	0.17	4.18	3.57
Standard deviation	0.29	0.84	0.26	0.88	1.32	0.46	1.50	1.43	0.37	0.54	1.09
Min	−1.95	1.00	0.12	7.41	8.32	0.69	1.00	0.00	0.00	2.00	1.00
Max	0.53	5.00	1.00	11.51	15.57	2.48	7.00	10.00	1.00	5.00	5.00

Note: $N = 179$ firms. Correlations with an absolute value greater than 0.15 are significant at $p < 0.05$.

single-item questions in the survey, measured on a five-point Likert scale: (i) founders' focus on achieving *high growth in turnover*, and (ii) founders' focus on *attracting potential investors or buyers*. Descriptive statistics and a correlation matrix are presented in Table 1.

4.3 | Reliability, validity, and common method bias

We implemented multiple steps to ensure our measures' reliability and validity. First, beyond relying solely on questionnaire responses, we utilized multiple sources of information. Specifically, performance measures and many control variables were drawn from secondary sources, such as financial reports and publication repositories. Furthermore, data such as degree of academic ownership and patents, initially obtained from questionnaire responses, were verified against secondary sources, including public filings in the Chamber of Commerce registry.

For our multi-item construct of academic goals, both the Cronbach's α and composite reliability (CR) coefficients exceed the recommended threshold of 0.70, thereby certifying the construct's internal consistency. Given that single-item measures are used to control for economic goals, we conducted an exploratory factor analysis (EFA), which confirmed that neither the item "goals of high growth in turnover," nor the item "attracting potential investors/buyers," load on the academic goals factor.

To address potential common method bias, we followed Podsakoff et al.'s (2003) recommendations and conducted Harman's one-factor test, a principal component analysis that included all variables in our model, identifying three factors with eigenvalues greater than 1. The first factor accounts for 20.2% of total variance, well below the 50% threshold typically indicative of common method bias issues.

Furthermore, we examined collinearity among variables. The variance inflation factors (VIFs) for all variables are below the critical threshold of 10. Although sector dummies are close to this upper limit, our model's core variables exhibit VIFs below 2, suggesting that collinearity is unlikely to affect our estimates.

5 | RESULTS

Table 2 displays our results using OLS regression analysis. Model 1 includes only control variables. Model 2 includes the linear term of the academic goals variable, while Model 3 adds the quadratic term. The results indicate that neither the linear nor quadratic terms are statistically significant ($\beta = 0.05$, $p > 0.10$ and $\beta = -0.01$, $p > 0.10$, respectively). Thus, H1 was not supported.

In Model 4, we added interactions between both the linear and quadratic terms of academic goals with the *degree of academic ownership* variable. The results indicate that the interactions with both the linear and quadratic terms of academic goals are statistically significant ($\beta = -2.07$, $p < 0.01$ and $\beta = 0.36$, $p < 0.01$, respectively). These results hold under different specifications of our dependent variable (Table A2 in the Appendix A). To interpret these results, we followed Haans et al.'s (2016) recommendation and plotted the relationships. Figure 1 shows that the relationship between the focus on academic goals and ASO financial performance is an inverted U-shaped curve when the degree of academic ownership is low. Conversely, the relationship between the focus on academic goals and ASO financial performance is U-shaped when the degree of academic ownership is high. Altogether, these findings reveal that the moderator, in the case of high academic ownership, not only flattens the curve, as argued in H2, but the flattening is so intense that there is a "shape-flip" (Haans et al., 2016, p. 1178) in the academic goals-financial performance curve. We will discuss this finding in more detail in the discussion section below. As revealed by the largely non-overlapping 90% confidence intervals, the figure also indicates that, among ASOs with the lowest focus on academic goals (i.e., 1), those with high academic ownership, on average, have approximately 37.4% higher financial performance than those with low

TABLE 2 Academic goals, academic ownership, and ASO financial performance.

	Model 1	Model 2	Model 3	Model 4
University size (ln)	0.03	0.03	0.03	0.05*
	(0.02)	(0.02)	(0.02)	(0.02)
Firm total assets (ln)	0.03	0.03	0.03	0.02
	(0.03)	(0.03)	(0.03)	(0.03)
Firm age (ln)	0.04	0.03	0.03	0.04
	(0.07)	(0.07)	(0.07)	(0.07)
Team size	−0.00	−0.00	−0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Patents	−0.02	−0.01	−0.02	−0.02
	(0.01)	(0.01)	(0.01)	(0.01)
Financial institutions in the ownership	−0.18*	−0.17*	−0.17*	−0.19**
	(0.08)	(0.07)	(0.07)	(0.07)
High growth in turnover	−0.00	−0.00	−0.00	0.00
	(0.04)	(0.04)	(0.04)	(0.04)
Attracting new investors/potential buyers	−0.04	−0.04	−0.04	−0.03†
	(0.02)	(0.02)	(0.02)	(0.02)
Degree of academic ownership	0.06	0.07	0.08	2.80**
	(0.09)	(0.10)	(0.10)	(0.91)
Academic goals		−0.03	0.05	1.77**
		(0.03)	(0.14)	(0.61)
Academic goals^2			−0.01	−0.31**
			(0.02)	(0.11)
Academic goals * degree of academic ownership				−2.07**
				(0.67)
Academic goals^2 * degree of academic ownership				0.36**
				(0.12)
Intercept	−0.39	−0.34	−0.46	−2.83**
	(0.37)	(0.39)	(0.40)	(0.96)
Industry dummies	Yes	Yes	Yes	Yes
University location dummies	Yes	Yes	Yes	Yes
F	1.62	1.56	1.58	1.96
R^2	0.1439	0.1490	0.1501	0.2304
N	179	179	179	179

Note: The table presents the results from a linear regression, in which the dependent variable is ASO return on assets. Standard errors are clustered at the firm level.
†$p < 0.1$;
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

academic ownership. This gap becomes even larger for ASOs with the highest focus on academic goals (i.e., 5). In this case, ASOs with high academic ownership, on average, have approximately 70.8% higher financial performance than those with low academic ownership.

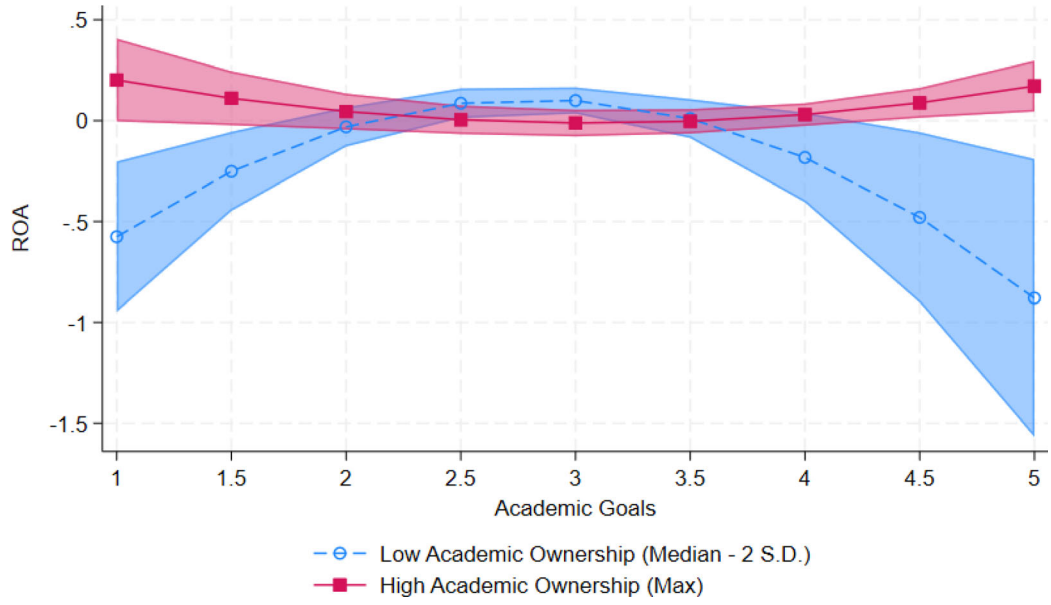

FIGURE 1 Academic goals, degree of academic ownership, and ASO financial performance.

5.1 | Auxiliary analysis

In our hypotheses, we speculated that, in accordance with the behavioral theory of the firm, the relationship between the focus on academic goals and financial performance is driven primarily by an increased focus on scientific pursuits. If this is the case, the focus on academic goals should impact academic outputs positively. This effect, in turn, should be even more pronounced in ASOs with high academic ownership, which emphasizes an academic view of science within the organization, focusing on dissemination rather than appropriation. While our paper's conceptual focus centers on the interplay between academic goals and financial performance, we sought for empirical validation of the above conjectures in this auxiliary analysis.

We constructed a proxy for *academic performance*, measured as the number of scientific publications by ASOs. This choice was grounded in ASOs' capacity to generate 'public knowledge' in the form of scientific outputs (e.g., Docampo & Cram, 2017), and it is quite frequent and strategically pursued by ASOs (Powell & Sandholtz, 2012; Rotolo et al., 2022). The publication data were collected via Scopus.[4] When authors' affiliations were ambiguous, we cross-referenced the addresses of the ASOs from our survey and ORBIS with those in the authors' affiliations in Scopus. This approach allowed us to comprehensively access all publications associated with the ASOs. Furthermore, we verified the information obtained from Scopus with data available on the ASOs' websites. Considering that many ASOs require extensive periods to develop their businesses and achieve market presence, and given the lengthy publication process, we concentrated on the publications spanning 2018 to 2021.

We used a negative binomial regression analysis given the dependent variable's count nature. Table 3 presents the results for ASOs' academic performance.[5] Model 1 includes regressions involving only control variables. Model 2 includes the academic goals variable. The results indicate that the relationship between the focus on academic goals and ASOs' academic performance is positive and statistically significant ($\beta = 0.46$, $p < 0.05$), thereby supporting our conjecture that an increased focus on academic goals should impact academic outputs positively.

In Model 3, we added the interaction between academic goals and degree of academic ownership variables. The results indicate that the coefficient of the interaction between the two variables is positive and statistically significant ($\beta = 1.45$, $p < 0.05$). This finding supports our conjecture that the influence of the focus on academic goals on

TABLE 3 Academic goals, academic ownership, and ASO academic performance.

	Model 1	Model 2	Model 3
University size (ln)	0.58**	0.60**	0.60**
	(0.19)	(0.20)	(0.19)
Firm total assets (ln)	0.67***	0.71***	0.74***
	(0.11)	(0.11)	(0.11)
Firm age (ln)	−0.30	−0.13	−0.05
	(0.34)	(0.34)	(0.34)
Team size	−0.13	−0.15	−0.11
	(0.10)	(0.09)	(0.09)
Patents	−0.20*	−0.22*	−0.21*
	(0.10)	(0.09)	(0.09)
Financial institutions in the ownership	−0.33	−0.67	−0.66
	(0.49)	(0.44)	(0.42)
High growth in turnover	−0.47†	−0.56*	−0.60*
	(0.25)	(0.25)	(0.25)
Attracting new investors/potential buyers	0.01	0.04	0.02
	(0.14)	(0.13)	(0.13)
Degree of academic ownership	0.76	0.34	−4.27†
	(0.59)	(0.58)	(2.20)
Academic goals		0.46*	−0.66
		(0.19)	(0.57)
Academic goals * degree of academic ownership			1.45*
			(0.69)
Intercept	−8.98***	−10.20***	−7.07*
	(2.42)	(2.54)	(2.90)
Industry dummies	Yes	Yes	Yes
University location dummies	Yes	Yes	Yes
Log-likelihood	−289.48	−287.14	−285.42
Chi^2	98.25	92.51	99.20
Pseudo R^2	0.0661	0.0736	0.0792
N	184	184	184

Note: The table presents the results from a negative binomial regression in which the dependent variable is the number of scientific publications by the ASO. Standard errors are clustered at the firm level.
†$p < 0.1$;
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

academic outputs is more pronounced when academic ownership is high. These results hold under the application of different analytical techniques (Table A3 in the Appendix A).

6 | DISCUSSION

Hybrid organizations focus on balancing multiple goals (Shepherd et al., 2019), often needing to reconcile non-economic objectives with financial outcomes (Mitchell et al., 2016; Stephan et al., 2019). In new ventures, such as

ASOs, founders focus on academic goals, which need to coexist with commercial imperatives. Drawing on the behavioral theory of the firm and insights from a duality perspective, we argued that the focus on academic goals within ASOs shapes allocation of attention in ways that can both enhance and deter financial performance. Specifically, we hypothesized that a low-to-moderate focus on academic goals entails complementarities that positively impact financial performance, while a moderate-to-high focus leads to oppositions that are detrimental to financial performance (H1). Furthermore, we posited that high academic ownership attenuates both complementarities (with a low-to-moderate focus on academic goals) and oppositions (at a moderate-to-high focus) between academic goals and financial performance (H2).

Our study provides partial empirical support for our hypotheses, confirming that the relationship between a firm's focus on academic goals and its financial performance is non-linear and contingent on the degree of academic ownership. Specifically, our findings reveal that the relationship is not consistently an inverted U-shape, as predicted in H1. There, we hypothesized that as founders' focus on academic goals shifts from low to moderate, the benefits of learning would outweigh coordination problems, leading to improved financial performance. Conversely, we expected that a stronger focus on academic goals would increase coordination problems, ultimately hindering financial performance. Our findings, however, suggest that this balance between learning benefits and coordination problems may not be consistent across ASOs, leading to H1 not being supported. Instead, the results underscore the critical moderating role of academic ownership, as proposed in H2. This suggests that the focus on academic goals alone does not determine financial performance. Rather, ownership structure—specifically, the degree of academic ownership—plays a pivotal role in shaping how ASOs balance an increasing focus on academic goals with financial outcomes. Further details on these dynamics are provided below.

Low academic ownership. Low academic ownership allows ASOs to maximize financial performance when founders' focus on academic goals remains at moderate levels. In this context, as hypothesized, ASOs strike the best balance between the benefits of scientific-centered learning and adaptation and the coordination challenges between scientific pursuits and commercial activities.

High academic ownership and low-to-moderate academic goals. Conversely, at more pronounced levels of academic ownership, ASOs operate in an environment in which the relationship between academic goals and financial performance flattens (as predicted in H2) up to the point that it even flips to a U-shape at high academic ownership. This "shape-flip" aligns with the hypothesized effects of academic ownership on how the functions of learning and coordination are influenced by an increasing focus on academic goals. However, it also indicates that the change in these two functions' relative strength at high levels of academic ownership is surprisingly pronounced. When founders' focus on academic goals shifts from low to moderate, the benefits from science-centered learning and adaptation may be constrained by the lack of business acumen usually brought by non-academic shareholders. This expertise would complement the insights gained from scientific validation activities, a particularly critical aspect for learning when founders' focus on academic goals is in the low-to-moderate range, as these ASOs are splitting their attention between scientific pursuits and short-term commercialization efforts. Furthermore, even at a low-to-moderate focus on academic goals, ASOs with high academic ownership may face some coordination problems. Without the commercial perspective needed for market-driven innovation projects, these firms struggle to integrate scientific and commercial activities efficiently, between which attention is split. These dynamics contribute to the hypothesized flattening and help explain the decline in financial performance that we observe at a high level of academic ownership, as the focus on academic goals shifts from low to moderate.

High academic ownership and moderate-to-high academic goals. When founders' focus on academic goals shifts beyond a moderate level, it becomes more aligned with academic view of science, typical of academic owners. This alignment does not necessarily prevent some degree of science-centered learning resulting from ASOs' predominant attention paid to scientific pursuits (e.g., by fostering in-depth and curiosity-driven exploration of scientific issues within these endeavors). More importantly, it helps mitigate the increase in coordination problems because the academic view of science—with a mindset uniformly emphasizing scientific progress—aligns well with the ASOs' emphasis on scientific endeavors. This alignment reduces costly and resource-consuming negotiations, allowing ASOs to

pursue ambitious, expensive, and resource-intensive research efforts efficiently. These dynamics contribute to the hypothesized flattening and may help explain the improvement in financial performance that we observe, at higher degrees of academic ownership, when the focus on academic goals shifts from moderate to high levels. Overall, this results in a U-shaped relationship for ASOs with high academic ownership, with peaks in financial performance at both low and high foci on academic goals.

Three typologies of well-performing ASO. To sum up, based on our findings, we propose three different typologies of well-performing ASO with varying configurations of goals and ownership that could be investigated further in future research and could shed light on ASOs' heterogeneity. For ASOs with low academic ownership, financial performance is optimal with a moderate focus on academic goals. Our findings suggest that in this ASO typology, the commercial view of science introduced by non-academic shareholders helps bridge scientific validation and commercialization (Schou, 2023). This ASO typology can achieve economic success when a strong alignment exists between investors' commercial view of science and founders' focus on scientific advancement, seamlessly integrating these elements into the firm's ongoing activities. Future research could investigate how these firms actually differ from other types of ASOs (e.g., with a high level of academic ownership) in terms of ability to leverage existing academic resources (e.g., deep expertise, strong research networks, and technological capabilities) to engage in boundary-spanning activities.

With high academic ownership, instead, it is most advantageous for these ASOs' founders to focus either on low or high levels of academic goals. With a low focus on academic goals, we have ASOs characterized by genuine commercial exploitation whose financial performance is protected by avoiding substantial coordination problems that would arise from balancing scientific pursuits with commercial activities, thereby harming financial outcomes. Future research could address these ASOs' long-term performance and see whether such a low level of hybridization pays off.

Finally, with high academic ownership and a high focus on academic goals, ASOs effectively can pursue and disseminate ambitious, resource-intensive research projects that align well with their shareholders' academic perspective. This ASO typology resembles those that are "in business to do science" (Powell & Sandholtz, 2012, p. 104), attracting significant commercial interest by advancing the frontiers of scientific research. This ASO typology can achieve economic success by prioritizing scientific research while maintaining strong ties to the academic community. This alignment enables ASOs to remain at the forefront of scientific advancements, fostering a high level of intellectual capital that can be translated into financial outcomes. Future studies could concentrate on how such ASOs engage in resource-seeking behaviors, as well as what other outcomes they may achieve, such as patenting.

6.1 | Theoretical contributions

Our findings offer several contributions to theory and research. First, our study contributes to the literature on hybrid organizations (McMullen, 2018; Pache & Santos, 2013; Shepherd et al., 2019) by providing further evidence to the growing body of research challenging the notion that non-economic goals inherently conflict with financial outcomes (e.g., Castellas et al., 2019; Palakshappa et al., 2024). Specifically, our results demonstrate that the relationship between non-economic organizational goals and financial performance is complex and multifaceted, requiring an accounting of interdependencies between founders' goals and the characteristics of the company's ownership structure. Our study demonstrates that under specific conditions, a strong focus on non-economic goals can lead to higher financial performance. However, this is not always the case. While pursuing non-economic goals can benefit hybrid organizations by fostering learning and adaptation in areas tied to non-economic logics, it also can introduce coordination challenges linked to attention and resource allocation. This finding sets our work apart from extant research on ASOs as hybrid organizations (e.g., Abootorabi et al., 2024), which primarily have considered the simple presence of non-economic goals, rather than the degree of founders' focus on them. Our findings also suggest that the alignment between ownership structure and founders' goals dictates when different levels of focus on non-

economic goals affect financial performance positively or negatively. This underscores the importance of providing a more nuanced conceptualization of governance in hybrid organizations that effectively can balance oppositions and complementarities associated with varying levels of focus on non-economic goals (e.g., Mair et al., 2015).

Moreover, our study contributes to the behavioral theory of the firm by incorporating a duality perspective, highlighting that ASOs embody a duality of academic and commercial logics that do not necessarily exist in a state of conflict, leading to typical trade-off situations (Gaba & Greve, 2019; Mazzelli et al., 2019; Stephan et al., 2019). Instead, these logics often function as complementary forces (Ashforth & Reingen, 2014; Farjoun, 2010). The successful capitalization of duality in ASOs is achieved through strategic alignment of ownership and founders' goals. This highlights the importance of considering the existence of multiple logics and goal systems not in isolation, but in connection with other levels of duality that may be present within organizations (e.g., academic vs. non-academic ownership, as a manifestation of duality at a "structural level"). Therefore, a central contribution of our study is recognizing that complementarity is not merely about finding a "midpoint" in an opposing force system, but also about deeply understanding the interconnected nature of the forces at play (i.e., goals and ownership) and their varying intensities. This suggests that the process of achieving complementarity extends beyond the simple notion of "balance."

Finally, our study specifically targets ASOs as hybrid organizations and contributes to the ongoing debate on the synergistic effects of commercial and academic logics in academic entrepreneurship (Jain et al., 2009; Shibayama et al., 2012). Our findings reveal that academic logics, reflected in a focus on academic goals, can be an asset—rather than necessarily a liability—for ASOs' performance, both financial and academic. They also reveal that the complementarities between academic goals and commercial outcomes in ASOs are contingent on an ownership structure that supports this balance. In this respect, our findings enhance the understanding of the impact of academic shareholders' involvement in firm governance, a topic that has been actively debated in academic entrepreneurship literature (Bolzani et al., 2021; Fu et al., 2022; Lauto et al., 2022). A key insight from our study is that a simplistic focus on academic and non-academic shareholders does not capture ASOs' complexity adequately. Instead, academic shareholders' presence must be considered in tight connection with founders' goal systems. Indeed, on the basis of our findings, we identified distinct types of well-performing ASOs by examining alignment between academic shareholders and founders' goal frameworks. This approach offers deeper insights and opens avenues for future research into the factors driving heterogeneity among ASOs, contributing to a clearer understanding of their developmental paths.

6.2 | Limitations and future research

Our work has some limitations, which we view as opportunities for future research. In line with the initial evidence reported in our auxiliary analysis, it would be helpful to explicitly measure the latent behaviors (e.g., academic exploration or exploitation) or functions (e.g., learning and coordination) resulting from goals that affect performance (Kotlar et al., 2018). Further types of economic outcomes could be considered, such as growth and survival (Kotlar et al., 2018) or other organizational performance measures relevant to ASOs (Mathisen & Rasmussen, 2019), including internationalization (Civera et al., 2019), acquisitions (Mathisen et al., 2022), and liquidity events (Bruneel et al., 2020; Colombo et al., 2019). These would enrich our theoretical understanding of the duality processes in hybrid ventures, such as ASOs.

Moreover, our sample is rather polarized toward ICT and service firms. Even though we controlled for the sector where the firm operates, it would be interesting to see whether, and to what extent, our results apply to only ASOs operating in more capital-intensive or basic-research sectors.

We specifically addressed goals tied to the unique non-economic logics of ASOs as hybrid ventures (i.e., academic goals), setting our research apart from other works (Abootorabi et al., 2024; Stephan et al., 2019) that have examined social goals that are common across various types of commercial and non-commercial firms. Future

studies could examine other specific types of non-economic goals within other hybrid ventures (e.g., in family startups).

Future research might benefit from examining temporal aspects connected to ASOs' academic goals, such as in terms of evolving adherence to academic and commercial logics and identities (Fisher et al., 2016). Even if we controlled for firm age, future studies could employ a qualitative and/or longitudinal design to integrate the time dimension into our theoretical framework, examine possible feedback loops, and understand how performance feedback (Gavetti et al., 2012) affects ASOs' goal-setting process.

6.3 | Practical implications

Based on our findings, several practical implications emerge for founders, investors, and technology transfer practices. For founders, we refined the common recommendation regarding inclusion of commercial shareholders. This approach is not uniformly essential for all ASOs, but is particularly valuable when the firm is founded with a moderate emphasis on academic goals. In this case, non-academic shareholders play a key role, enabling the venture to integrate and balance scientific and commercial activities effectively, fostering a pathway to financial success. Therefore, founders should engage corporate and financial investors strategically when their aim is to achieve this balance.

For equity investors, ASOs with a moderate focus on academic goals offer the most advantageous opportunities. Here, non-academic shareholders can provide significant value by bridging scientific innovation with commercial execution, enhancing financial outcomes through their ability to integrate and coordinate these activities. Thus, building on our findings, investors should develop accurate methods to assess founders' goals beyond knowledge and technical assets, such as by observing ASOs' pitches and documentation.

Regarding technology transfer practices, our findings suggest that policies should primarily focus their support in seeking non-academic shareholders' involvement for ASOs that aim to balance scientific and commercial pursuits. To do so, they should assess the extent of founders' focus on academic goals, such as during the screening and approval processes.

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ENDNOTES

[1] We were unable to retrieve return on assets (ROA) data on five firms. Consequently, all descriptive, correlation, and regression analyses involving "ASO Financial Performance" as a variable are based on 179 observations. However, analyses on academic performance that do not include this variable are based on the full sample of 184 firms.

[2] Our findings remain consistent when focusing solely on the years 2016 and 2017, their average, and the averages for 2016–2019 and 2016–2020.

[3] Our results are unchanged if we remove the ownership held by the university and only consider the ownership held by the individual academic members.

[4] Scopus, a commercial database launched by Elsevier in November 2004, covers approximately 23,000 titles from over 5000 international publishers. We selected Scopus over other databases, such as Web of Science, due to its broader coverage of publications across various research fields. We utilized Scopus to identify scientific publications by the ASOs, specifically by searching for matches in the authors' affiliations with those listed in our survey. This number represents a fraction of the overall scientific publications by academics in the ASOs, as they use the ASO's affiliation only when the publication is strictly connected to the ASO's research activity.

[5] We thank an anonymous reviewer for this comment. For academic performance—differently from financial performance (for which the focus on academic goals presents both complementarities and oppositions)—we envision that the wide array of incentives underlying academic goals straightforwardly converge toward publishing (Rotolo et al., 2022). Hence, we do not include the quadratic effect.

REFERENCES

Abootorabi, H., Shankar, R. K., Rasmussen, E., & Wiklund, J. (2024). Do hybrid goals pay off? Social and economic goals in academic spin-offs. *Journal of Management Studies*, *61*(1), 110–140.

Agarwal, R., & Shah, S. K. (2014). Knowledge sources of entrepreneurship: Firm formation by academic, user and employee innovators. *Research Policy*, *43*(7), 1109–1133.

Almandoz, J. (2014). Founding teams as carriers of competing logics: When institutional forces predict banks' risk exposure. *Administrative Science Quarterly*, *59*(3), 442–473.

Ambos, T. C., Mäkelä, K., Birkinshaw, J., & d'Este, P. (2008). When does university research get commercialized? Creating ambidexterity in research institutions. *Journal of Management Studies*, *45*(8), 1424–1447.

Ashforth, B. E., & Reingen, P. H. (2014). Functions of dysfunction: Managing the dynamics of an organizational duality in a natural food cooperative. *Administrative Science Quarterly*, *59*(3), 474–516.

Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and commercial entrepreneurship: Same, different, or both? *Entrepreneurship Theory and Practice*, *30*(1), 1–22.

Barbosa, N., & Faria, A. P. (2020). The effect of entrepreneurial origin on firms' performance: The case of Portuguese academic spinoffs. *Industrial and Corporate Change*, *29*(1), 25–42.

Battilana, J., Besharov, M., & Mitzinneck, B. (2017). On hybrids and hybrid organizing: A review and roadmap for future research. In R. Greenwood, C. Oliver, T. B. Lawrence, & R. E. Meyer (Eds.), *SAGE handbook of organizational institutionalism* (pp. 128–162). Sage.

Benghozi, P. J., & Salvador, E. (2014). Are traditional industrial partnerships so strategic for research spin-off development? Some evidence from the Italian case. *Entrepreneurship & Regional Development*, *26*(1–2), 47–79.

Ben-Hafaïedh, C., Micozzi, A., & Pattitoni, P. (2022). Incorporating non-academics in academic spin-off entrepreneurial teams: The vertical diversity that can make the difference. *R&D Management*, *52*(1), 67–78.

Bolzani, D., Rasmussen, E., & Fini, R. (2021). Spin-offs' linkages to their parent universities over time: The performance implications of equity, geographical proximity, and technological ties. *Strategic Entrepreneurship Journal*, *15*(4), 590–618.

Bromiley, P., & Rau, D. (2022). Extending the behavioral theory of the firm to entrepreneurial firms. *Strategic Management Review*, *3*(1), 99–123.

Bruneel, J., Clarysse, B., Bobelyn, A., & Wright, M. (2020). Liquidity events and VC-backed academic spin-offs: The role of search alliances. *Research Policy*, *49*(10), 104035.

Cantner, U., Doerr, P., Goethner, M., Huegel, M., & Kalthaus, M. (2024). A procedural perspective on academic spin-off creation: The changing relative importance of the academic and the commercial sphere. *Small Business Economics*, *62*, 1555–1590.

Castellas, E. I., Stubbs, W., & Ambrosini, V. (2019). Responding to value pluralism in hybrid organizations. *Journal of Business Ethics*, *159*, 635–650.

Cesaroni, F., & Piccaluga, A. (2016). The activities of university knowledge transfer offices: Towards the third mission in Italy. *Journal of Technology Transfer*, *41*(4), 753–777.

Civera, A., De Massis, A., Meoli, M., & Vismara, S. (2024). The goal and performance heterogeneity of academic spinoffs. *Technovation*, *131*, 102972.

Civera, A., Meoli, M., & Vismara, S. (2019). Do academic spinoffs internationalize? *Journal of Technology Transfer*, *44*, 381–403.

Clarysse, B., Andries, P., Boone, S., & Roelandt, J. (2023). Institutional logics and founders' identity orientation: Why academic entrepreneurs aspire lower venture growth. *Research Policy*, *52*(3), 104713.

Colombo, M. G., Meoli, M., & Vismara, S. (2019). Signaling in science-based IPOs: The combined effect of affiliation with prestigious universities, underwriters, and venture capitalists. *Journal of Business Venturing*, *34*(1), 141–177.

Colombo, M. G., & Piva, E. (2012). Firms' genetic characteristics and competence-enlarging strategies: A comparison between academic and non-academic high-tech start-ups. *Research Policy*, *41*(1), 79–92.

Connelly, B. L., Hoskisson, R. E., Tihanyi, L., & Certo, S. T. (2010). Ownership as a form of corporate governance. *Journal of Management Studies*, *47*(8), 1561–1589.

Connelly, B. L., Tihanyi, L., Ketchen, D. J., Jr., Carnes, C. M., & Ferrier, W. J. (2017). Competitive repertoire complexity: Governance antecedents and performance outcomes. *Strategic Management Journal*, *38*(5), 1151–1173.

Criaco, G., Hahn, D., Minola, T., & Pittino, D. (2025). The role of non-economic goals in academic spin-offs. *Journal of Technology Transfer*, 1–24. https://doi.org/10.1007/s10961-024-10111-8

Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Prentice-Hall.

Dahan, N. M., & Leca, B. (2025). When duality fails: Addressing the liability of hybridity in a field dominated by nonprofit values. *Journal of Management Studies*, 1–25. https://doi.org/10.1111/joms.13143

Davidsson, P., Steffens, P., & Fitzsimmons, J. (2009). Growing profitable or growing from profits: Putting the horse in front of the cart? *Journal of Business Venturing*, *24*(4), 388–406.

De Keyser, B., & Vandenbempt, K. (2023). Processes of practice in the realm of theory: Unveiling the dynamics of academic intrapreneurship. *Technovation*, *126*, 102811.

Docampo, D., & Cram, L. (2017). Academic performance and institutional resources: A cross-country analysis of research universities. *Scientometrics*, *110*(2), 739–764.

Engzell, J., Karabag, S. F., & Yström, A. (2024). Academic intrapreneurs navigating multiple institutional logics: An integrative framework for understanding and supporting intrapreneurship in universities. *Technovation*, *129*, 102892.

Ensley, M. D., & Hmieleski, K. M. (2005). A comparative study of new venture top management team composition, dynamics and performance between university-based and independent start-ups. *Research Policy*, *34*(7), 1091–1105.

Farjoun, M. (2010). Beyond dualism: Stability and change as a duality. *Academy of Management Review*, *35*(2), 202–225.

Ferretti, M., Ferri, S., Fiorentino, R., Parmentola, A., & Sapio, A. (2020). What drives the growth of academic spin-offs? Matching academics, universities, and nonresearch organizations. *International Entrepreneurship and Management Journal*, *16*(1), 137–163.

Fisher, G., Kotha, S., & Lahiri, A. (2016). Changing with the times: An integrated view of identity, legitimacy, and new venture life cycles. *Academy of Management Review*, *41*(3), 383–409.

Fleming, L., & Sorenson, O. (2004). Science as a map in technological search. *Strategic Management Journal*, *25*(8–9), 909–928.

Foss, N. J., Klein, P. G., & Bjørnskov, C. (2019). The context of entrepreneurial judgment: Organizations, markets, and institutions. *Journal of Management Studies*, *56*(6), 1197–1213.

Franklin, S. J., Wright, M., & Lockett, A. (2001). Academic and surrogate entrepreneurs in university spin-out companies. *Journal of Technology Transfer*, *26*(1–2), 127–141.

Fu, X. M., Harrison, R. T., & Li, D. F. (2022). Venture capital investment in university spin-offs: Evidence from an emerging economy. *Journal of Corporate Finance*, *74*, 102197.

Fuller, A. W., & Rothaermel, F. T. (2012). When stars shine: The effects of faculty founders on new technology ventures. *Strategic Entrepreneurship Journal*, *6*(3), 220–235.

Furr, N. R. (2019). Product adaptation during new industry emergence: The role of start-up team preentry experience. *Organization Science*, *30*(5), 1076–1096.

Gaba, V., & Greve, H. R. (2019). Safe or profitable? The pursuit of conflicting goals. *Organization Science*, *30*(4), 647–667.

Galati, F., Bigliardi, B., Passaro, R., & Quinto, I. (2020). Why do academics become entrepreneurs? How do their motivations evolve? Results from an empirical study. *International Journal of Entrepreneurial Behaviour and Research*, *26*(7), 1477–1503.

Garg, S., & Furr, N. (2017). Venture boards: Past insights, future directions, and transition to public firm boards. *Strategic Entrepreneurship Journal*, *11*(3), 326–343.

Gavetti, G. (2012). Toward a behavioral theory of strategy. *Organization Science*, *23*(1), 267–285.

Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. (2012). The behavioral theory of the firm: Assessment and prospects. *Academy of Management Annals*, *6*(1), 1–40.

Graetz, F., & Smith, A. C. (2008). The role of dualities in arbitrating continuity and change in forms of organizing. *International Journal of Management Reviews*, *10*(3), 265–280.

Grandi, A., & Grimaldi, R. (2005). Academics' organizational characteristics and the generation of successful business ideas. *Journal of Business Venturing*, *20*(6), 821–845.

Haans, R. F., Pieters, C., & He, Z. L. (2016). Thinking about U: Theorizing and testing U- and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, *37*(7), 1177–1195.

Hahn, D., Minola, T., & Eddleston, K. A. (2019). How do scientists contribute to the performance of innovative start-ups? An imprinting perspective on open innovation. *Journal of Management Studies*, *56*(5), 895–928.

Hahn, D., Minola, T., Vismara, S., & Agyare, D. (2024). Do exploration and exploitation in university research drive early-stage equity financing of university spin-offs? *Small Business Economics*, *63*, 627–653.

Hayter, C. S. (2015). Public or private entrepreneurship? Revisiting motivations and definitions of success among academic entrepreneurs. *Journal of Technology Transfer*, *40*(6), 1003–1015.

Hmieleski, K. M., & Powell, E. E. (2018). The psychological foundations of university science commercialization: A review of the literature and directions for future research. *Academy of Management Perspectives*, *32*(1), 43–77.

Hsu, D. H., & Kuhn, J. M. (2023). Academic stars and licensing experience in university technology commercialization. *Strategic Management Journal*, *44*(3), 887–905.

Iorio, R., Labory, S., & Rentocchini, F. (2017). The importance of pro-social behavior for the breadth and depth of knowledge transfer activities: An analysis on Italian academic scientists. *Research Policy*, *46*(2), 497–509.

Jain, S., George, G., & Maltarich, M. (2009). Academics or entrepreneurs? Investigating role identity modification of university scientists involved in commercialization activity. *Research Policy*, *38*(6), 922–935.

Knockaert, M., Ucbasaran, D., Wright, M., & Clarysse, B. (2011). The relationship between knowledge transfer, top management team composition, and performance: The case of science–based entrepreneurial firms. *Entrepreneurship Theory and Practice*, *35*(4), 777–803.

Kotlar, J., De Massis, A., Wright, M., & Frattini, F. (2018). Organizational goals: Antecedents, formation processes and implications for firm behavior and performance. *International Journal of Management Reviews*, *20*, S3–S18.

Lam, A. (2011). What motivates academic scientists to engage in research commercialization: 'Gold', 'ribbon' or 'puzzle'? *Research Policy*, *40*(10), 1354–1368.

Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal*, *27*(2), 131–150.

Lauto, G., Salvador, E., & Visintin, F. (2022). For what they are, not for what they bring: The signaling value of gender for financial resource acquisition in academic spin-offs. *Research Policy*, *51*(7), 104554.

Lin, N., Wilden, R., Chirico, F., Ghasrodashti, E., & DeTienne, D. R. (2022). Persist or let it go: Do rational entrepreneurs make decisions rationally? *Journal of Business Venturing*, *37*(4), 106210.

Llopis, O., d'Este, P., McKelvey, M., & Yegros, A. (2022). Navigating multiple logics: Legitimacy and the quest for societal impact in science. *Technovation*, *110*, 102367.

Mair, J., Mayer, J., & Lutz, E. (2015). Navigating institutional plurality: Organizational governance in hybrid organizations. *Organization Studies*, *36*(6), 713–739.

Mathisen, M. T., & Rasmussen, E. (2019). The development, growth, and performance of university spin-offs: A critical review. *Journal of Technology Transfer*, *44*(6), 1891–1938.

Mathisen, M. T., Shankar, R. K., Widding, Ø., Rasmussen, E., & McKelvie, A. (2022). Enablers of exit through trade sale: The case of early-stage research-based spin-offs. *Small Business Economics*, *59*(2), 521–535.

Mazzelli, A., Nason, R. S., De Massis, A., & Kotlar, J. (2019). Causality rules: Performance feedback on hierarchically related goals and capital investment variability. *Journal of Management Studies*, *56*(8), 1630–1654.

McMullen, J. S. (2018). Organizational hybrids as biological hybrids: Insights for research on the relationship between social enterprise and the entrepreneurial ecosystem. *Journal of Business Venturing*, *33*(5), 575–590.

McMullen, J. S., & Bergman, B. J., Jr. (2017). Social entrepreneurship and the development paradox of prosocial motivation: A cautionary tale. *Strategic Entrepreneurship Journal*, *11*(3), 243–270.

Minola, T., Hahn, D., & Cassia, L. (2021). The relationship between origin and performance of innovative start-ups: The role of technological knowledge at founding. *Small Business Economics*, *56*(2), 553–569.

Mitchell, R. K., Weaver, G. R., Agle, B. R., Bailey, A. D., & Carlson, J. (2016). Stakeholder agency and social welfare: Pluralism and decision making in the multi-objective corporation. *Academy of Management Review*, *41*(2), 252–275.

Muscio, A., Quaglione, D., & Ramaciotti, L. (2016). The effects of university rules on spinoff creation: The case of academia in Italy. *Research Policy*, *45*(7), 1386–1396.

Nicolaou, N., & Birley, S. (2003). Academic networks in a trichotomous categorisation of university spinouts. *Journal of Business Venturing*, *18*(3), 333–359.

Nikiforou, A., Zabara, T., Clarysse, B., & Gruber, M. (2018). The role of teams in academic spin-offs. *Academy of Management Perspectives*, *32*(1), 78–103.

Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal*, *18*(S1), 187–206.

Pache, A. C., & Santos, F. (2013). Inside the hybrid organization: Selective coupling as a response to competing institutional logics. *Academy of Management Journal*, *56*(4), 972–1001.

Palakshappa, N., Dodds, S., & Grant, S. (2024). Tension and paradox in women-oriented sustainable hybrid organizations: A duality of ethics. *Journal of Business Ethics*, *190*(2), 327–346.

Palich, L. E., Cardinal, L. B., & Miller, C. C. (2000). Curvilinearity in the diversification-performance linkage: An examination of over three decades of research. *Strategic Management Journal*, *21*(2), 155–174.

Perkmann, M., McKelvey, M., & Phillips, N. (2019). Protecting scientists from Gordon Gekko: How organizations use hybrid spaces to engage with multiple institutional logics. *Organization Science*, *30*(2), 298–318.

Pilegaard, M., Moroz, P. W., & Neergaard, H. (2010). An auto-ethnographic perspective on academic entrepreneurship: Implications for research in the social sciences and humanities. *Academy of Management Perspectives*, *24*(1), 46–61.

Pitsakis, K., Souitaris, V., & Nicolaou, N. (2015). The peripheral halo effect: Do academic spinoffs influence universities' research income? *Journal of Management Studies*, *52*(3), 321–353.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.

Powell, W. W., & Sandholtz, K. W. (2012). Amphibious entrepreneurs and the emergence of organizational forms. *Strategic Entrepreneurship Journal*, *6*(2), 94–115.

Quade, M. J., Wan, M., Carlson, D. S., Kacmar, K. M., & Greenbaum, R. L. (2022). Beyond the bottom line: Don't forget to consider the role of the family. *Journal of Management*, *48*(8), 2167–2196.

Randolph, R. V., Alexander, B. N., Debicki, B. J., & Zajkowski, R. (2019). Untangling non-economic objectives in family & non-family SMEs: A goal systems approach. *Journal of Business Research*, *98*, 317–327.

Ratinho, T., & Bruneel, J. (2024). Taking stock of research on hybrid organizations: Enriching theoretical perspectives, extending empirical contexts, and expanding practical relevance. *Journal of Business Research*, *170*, 114313.

Rindova, V. P., & Courtney, H. (2020). To shape or adapt: Knowledge problems, epistemologies, and strategic postures under Knightian uncertainty. *Academy of Management Review*, *45*(4), 787–807.

Roche, M. P., Conti, A., & Rothaermel, F. T. (2020). Different founders, different venture outcomes: A comparative analysis of academic and non-academic startups. *Research Policy*, *49*(10), 104062.

Rotolo, D., Camerani, R., Grassano, N., & Martin, B. R. (2022). Why do firms publish? A systematic literature review and a conceptual framework. *Research Policy*, *51*(10), 104606.

Schou, P. K. (2023). Coming apart while scaling up–adoption of logics and the fragmentation of organizational identity in science-based ventures. *Journal of Management Studies*, *60*(3), 688–721.

Sciarelli, M., Landi, G. C., Turriziani, L., & Tani, M. (2021). Academic entrepreneurship: Founding and governance determinants in university spin-off ventures. *Journal of Technology Transfer*, *46*, 1083–1107.

Shepherd, D. A., Williams, T. A., & Zhao, E. Y. (2019). A framework for exploring the degree of hybridity in entrepreneurship. *Academy of Management Perspectives*, *33*(4), 491–512.

Shibayama, S., Walsh, J. P., & Baba, Y. (2012). Academic entrepreneurship and exchange of scientific resources: Material transfer in life and materials sciences in Japanese universities. *American Sociological Review*, *77*(5), 804–830.

Simeth, M., & Cincera, M. (2016). Corporate science, innovation, and firm value. *Management Science*, *62*(7), 1970–1981.

Spanò, R., Grossi, G., & Landi, G. C. (2022). Academic entrepreneurial hybrids: Accounting and accountability in the case of MegaRide. *British Accounting Review*, *54*(5), 101130.

Stephan, U., Andries, P., & Daou, A. (2019). Goal multiplicity and innovation: How social and economic goals affect open innovation and innovation performance. *Journal of Product Innovation Management*, *36*(6), 721–743.

Uotila, J., Maula, M., Keil, T., & Zahra, S. A. (2009). Exploration, exploitation, and financial performance: Analysis of S&P 500 corporations. *Strategic Management Journal*, *30*(2), 221–231.

Vedula, S., Doblinger, C., Pacheco, D., York, J. G., Bacq, S., Russo, M. V., & Dean, T. J. (2022). Entrepreneurship for the public good: A review, critique, and path forward for social and environmental entrepreneurship research. *Academy of Management Annals*, *16*(1), 391–425.

Visintin, F., & Pittino, D. (2014). Founding team composition and early performance of university-based spin-off companies. *Technovation*, *34*(1), 31–43.

Wales, W. J., Patel, P. C., Parida, V., & Kreiser, P. M. (2013). Nonlinear effects of entrepreneurial orientation on small firm performance: The moderating role of resource orchestration capabilities. *Strategic Entrepreneurship Journal*, *7*(2), 93–121.

Williams, T. A., Nason, R., Wolfe, M. T., & Short, J. C. (2023). Seizing the moment—Strategy, social entrepreneurship, and the pursuit of impact. *Strategic Entrepreneurship Journal*, *17*(1), 3–18.

Woolley, J. L. (2017). Origins and outcomes: The roles of spin-off founders and intellectual property in high-technology venture outcomes. *Academy of Management Discoveries*, *3*(1), 64–90.

Wright, M. (2014). Academic entrepreneurship, technology transfer and society: Where next? *Journal of Technology Transfer*, *39*, 322–334.

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APPENDIX A

TABLE A1 The sample's characteristics.

	Mean	S.D.	Min	Max
Location				
Northwest	25.54			
Northeast	25.00			
Center	25.00			
South	18.48			
Islands	5.98			
Sectors				
Industrial automation	2.17			
Biomedical	5.98			
Electronics	2.72			
Energy and environment	19.02			
ICT	21.74			
Life sciences	16.85			
Nanotech	2.72			
Innovation services	28.80			
University size (ln)	10.09	0.88	7.41	11.51
Year of founding	2010.41	2.47	2004	2014
Number of employees	3.07	3.27	0	16
Academic ownership	0.75	0.26	0.12	1
ASO financial performance	0.003	0.29	−1.95	0.53
ASO academic performance	1.98	3.79	0	25

Note: $N = 179$ firms.

Different financial performance measures. We checked whether our results are robust to different measures of ASO financial performance by re-running our models using two alternative proxies of ASO financial performance: *ROA using net income* and *profit margin*. As presented in Table A2, the results from these analyses align with our main results (see Model 1).

TABLE A2 Alternative measures of financial performance.

	Model 1 ROA	Model 2 ROA using net income	Model 3 Profit margin
University size (ln)	0.05*	5.38***	4.83*
	(0.02)	(1.37)	(2.12)
Firm total assets (ln)	0.02	0.16	−2.37
	(0.03)	(1.26)	(1.46)
Firm age (ln)	0.04	−1.01	2.57
	(0.07)	(3.82)	(4.28)
Team size	0.00	−1.58*	−0.63
	(0.01)	(0.78)	(1.18)
Patents	−0.02	−1.55*	−1.88
	(0.01)	(0.71)	(2.18)
Financial institutions in the ownership	−0.19**	−11.94**	−9.92*
	(0.07)	(4.18)	(4.60)
High growth in turnover	0.00	0.27	−3.47
	(0.04)	(2.03)	(2.97)
Attracting new investors/potential buyers	−0.03†	−2.41*	−2.63†
	(0.02)	(1.06)	(1.44)
Degree of academic ownership	2.80**	153.49**	160.98*
	(0.91)	(50.27)	(65.54)
Academic goals	1.77**	82.91**	90.46*
	(0.61)	(26.65)	(40.91)
Academic goals^2	−0.31**	−13.50**	−15.48*
	(0.11)	(4.32)	(7.23)
Academic goals * degree of academic ownership	−2.07**	−102.12**	−111.81*
	(0.67)	(32.34)	(45.74)
Academic goals^2 * degree of academic ownership	0.36**	16.32**	18.86*
	(0.12)	(5.14)	(8.03)
Intercept	−2.83**	−146.19**	−105.66†
	(0.96)	(51.34)	(63.80)
Industry dummies	Yes	Yes	Yes
University location dummies	Yes	Yes	Yes
F	1.96	3.05	1.45
R^2	0.2304	0.2776	0.2091
N	179	177	172

Note: The table presents the results from linear regressions. Standard errors are clustered at the firm and university levels.
†$p < 0.1$;
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Zero inflated negative binomial. Given that 59% of ASOs in our sample did not feature any scientific publication during the 2018–2021 period, as a robustness check, we ran a zero-inflated negative binomial (ZINB) to account for the high number of zeroes in this dependent variable. We used the ownership percentage of non-academic shareholders as the inflated parameter in our model. Academic ownership is likely to influence the probability that a firm

continues to produce a zero number of publications in the future because non-academic shareholders can regard such publications as a cost. This conjecture is corroborated in our data, as the inflate variable is positively and statistically strongly associated with the ASOs producing zero publications in the 2018–2021 period (see Table A1). Overall, the results from this analysis reported in Table A3 are largely in line with our main results.

TABLE A3 Zero-inflated negative binomial analysis for academic performance.

	Model 1	Model 2	Model 3
University size (ln)	0.46*	0.49*	0.50**
	(0.23)	(0.20)	(0.19)
Firm total assets (ln)	0.62***	0.65***	0.69***
	(0.14)	(0.14)	(0.13)
Firm age (ln)	−0.39	−0.20	−0.12
	(0.36)	(0.34)	(0.34)
Team size	−0.09	−0.11	−0.07
	(0.09)	(0.09)	(0.09)
Patents	−0.16	−0.16†	−0.16†
	(0.12)	(0.09)	(0.09)
Financial institutions in the ownership	−0.53	−0.83†	−0.82†
	(0.58)	(0.45)	(0.43)
High growth in turnover	−0.43†	−0.54*	−0.56*
	(0.24)	(0.25)	(0.24)
Attracting new investors/potential buyers	0.02	0.05	0.03
	(0.16)	(0.14)	(0.14)
Degree of academic ownership	0.46	0.04	−5.02*
	(0.60)	(0.57)	(2.26)
Academic goals		0.44*	−0.79
		(0.21)	(0.58)
Academic goals * degree of academic ownership			1.58*
			(0.70)
Inflate variable (non-academic ownership)	0.10†	0.10*	0.11*
	(0.06)	(0.05)	(0.04)
Intercept (inflate)	−1.29	−1.19	−1.28
	(2.08)	(1.43)	(1.22)
Intercept	−7.09*	−8.21**	−4.92
	(3.50)	(3.06)	(3.10)
Industry dummies	Yes	Yes	Yes
Region dummies	Yes	Yes	Yes
Log-likelihood	−286.08	−283.77	−281.50
Chi^2	74.30	66.16	71.61
N	184	184	184

Note: The table presents the results of a zero-inflated negative binomial regression where the dependent variable is ASO academic performance. Standard errors are clustered at the firm and university level.
†$p < 0.1$;
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.