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Is ambidexterity the missing link between entrepreneurship, management, and innovation?

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Abstract
Organizational ambidexterity refers to an organization's ability to perform two tasks equally proficiently. These tasks include efficiency vs. flexibility, adaptability vs. alignment, integration vs. responsiveness, or exploration vs. exploitation. The versatility of the ambidexterity concept allows it to be used to answer multiple research questions from various perspectives. Over the last two decades, research on ambidexterity has grown exponentially, leading to significant insights into conceptualizations, determinants, consequences, operationalization metrics, sophisticated methodologies, and multiple management approaches. However, there is a research gap in technology-oriented or entrepreneurship-oriented journals that discuss multiple ambidexterity tensions or paradoxes along the innovative, entrepreneurial, and managerial process. This special issue addresses this gap by examining ambidexterity as the missing link between entrepreneurship, management, and innovation. The special issue includes five studies that reveal the intersection of tensions between entrepreneurship, innovation, and management faced by different types of organizations across the globe. These studies highlight future research opportunities and implications for different stakeholders.

Keywords Ambidexterity · Entrepreneurial ambidexterity · Management ambidexterity · Innovation ambidexterity · Ambidextrous organizations · Entrepreneurial innovation management ambidexterity · Challenging times

JEL Classification D22 · D8 · L2 · M1 · M2 · P4 · O3

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1 Introduction

Originated by an individual capacity, organizational ambidexterity represents how organizations do two different things equally well (i.e., efficiency and flexibility, adaptability and alignment, integration and responsiveness, or exploration and exploitation). The versatility of the ambidexterity concept allows using it to test multiple research questions from various perspectives.

Over the last two decades, we also identified at least six special issues that have extended the academic debate about ambidexterity research by primarily adopting management approaches. For example, published in the *Organization Science Journal* in 2009, the first special issue paid attention to ambidexterity tensions: differentiation vs. integration, individual vs. organizational, static vs. dynamic, and internal vs. external (Andriopoulos & Lewis, 2009; Cao et al., 2009; Groysberg & Lee, 2009; Jansen et al., 2009; Mom et al., 2009; Raisch et al., 2009; Rothaermel & Alexandre, 2009; Taylor & Helfat, 2009). Then, published in the *Academy of Management Perspectives Journal* in 2013, the second special issue focused on the contributions of ambidexterity to organizational studies (Birkinshaw & Gupta, 2013), the reconciliation between ambidexterity and performance literature (Junni et al., 2013), and the strategic discussion of managing traditional and e-commerce business models (Markides, 2013). Afterward, published in the *Human Resource Management Journal* in 2015, the third special issue paid attention to tensions related to incentive schemes and team integration (Junni et al., 2015; Glaister et al., 2015; Faisal Ahammad et al., 2015; Halevi et al., 2015), strategic alliances (Meglio et al., 2015; Heavey et al., 2015), leadership (Burgess et al., 2015; Chebbi et al., 2015; Havermans et al., 2015), and operational management (Kostopoulos et al., 2015). Furthermore, published in the *Business Process Management Journal* in 2018, the fourth special issue paid attention to how IT-based BPM tools drive ambidextrous tensions in IT dimensions like big data, digital technologies, and information systems (Choudhary et al., 2018; Del Giudice et al., 2018; Ferraris et al., 2018; Giacosa et al., 2018; Miglietta et al., 2018; Ardito et al., 2018; Severgnini et al., 2018; Festa et al., 2018; Dezi et al., 2018; Gastaldi et al., 2018; Rialti et al., 2018). Then, published in the *Learning Organization Journa*l in 2019, the fifth special issue paid attention to overcoming conflicts through ambidexterity (Reese, 2019) across time/space based on the current paradoxes and dynamic capabilities (Brix, 2019; Cunha et al., 2019; Kerry-Krause & DeSimone, 2019; Seidle, 2019; Souza & Takahashi, 2019). Finally, published in the *International Journal of Human Resource Management* in 2019, the sixth special issue paid attention to the tensions between ambidexterity and human resource practices (Ahammad et al., 2019; Caniëls & Veld, 2019; Cunha et al., 2019; Ferraris et al., 2019; Hansen et al., 2019; Kapoutsis et al., 2019; Malik et al., 2019; Swart et al., 2019; Venugopal et al., 2019; Wang et al., 2019).

The knowledge accumulation on organizational ambidexterity has grown exponentially due to its adaptability, and this knowledge accumulation has also led to significant insights into the conceptualizations, determinants, and consequences of "organizational" ambidexterity (Gibson & Birkinshaw, 2004; Junni et al., 2013; O'Reilly & Tushman, 2013), the traditional operationalization metrics and sophisticated methodologies implemented in published qualitative/quantitative studies (Guerrero, 2021). Indeed, two critical academic debates emerged due to the knowledge accumulation about ambidexterity. First, authors have argued that the proliferation of ambidexterity research represents a consolidation stage (O'Reilly & Tushman, 2013; Birkinshaw & Gupta, 2004; Guerrero, 2021) with two possibilities: its decline or re-focus. Second, there is a notorious research gap

in technology-oriented or entrepreneurship-oriented journals to discuss multiple ambidexterity tensions or paradoxes along the innovative, entrepreneurial, and managerial process (Guerrero, 2021).

Motivated by the unrepresentativeness of ambidexterity studies in innovation and entrepreneurship (Guerrero, 2021; Schnellbächer & Heidenreich, 2020; Wolf et al., 2019), this special issue is looking past to look forward to theoretical and empirical studies that examine ambidexterity as the missing link between entrepreneurship, management, and innovation fields. Research on organizational ambidexterity has mainly focused on exploring the phenomenon as a strategic capability adopted by established or mature organizations to remain competitive, sustainable, and innovative. Nevertheless, the dual tensions of exploration and exploitation, which are the core of ambidexterity, are also considered to be the building blocks of entrepreneurial opportunity (Busenitz et al., 2003, 2014; Chandrasekaran et al., 2012; Rothaermel & Alexandre, 2009; Vrontis et al., 2017). In this assumption, many entrepreneurial organizations have been born (new ventures) or have rejuvenated (established ventures with an entrepreneurial orientation) through building an ambidexterity capacity by exploring and exploiting new entrepreneurial innovation opportunities. These antecedents explain why our call for the paper aimed to attract multidisciplinary conceptual/empirical contributions to clarify the missed link in new/existing organizations, as well as the different tensions that have motivated the link between entrepreneurship, management, and innovation (e.g., response to new social, technological, health, economic paradigms). Particularly, this introduction to the special issue contributes to this debate through five studies that revealed tensions faced by organizations across the globe, as well as highlighting future research opportunities and implications for different stakeholders.

Following this introduction, this paper is organized into four sections. In Sect. 2, we look back into the knowledge accumulation of ambidexterity, examining its evolution, typologies, and operationalization. By establishing this theoretical foundation, we provide a conceptual framework for understanding ambidexterity as the crucial link between entrepreneurship, innovation, and management. Section 3 presents five papers from this special issue that offer insights into our proposed framework. We describe each paper's ambidexterity tensions, missed links, contributions, and implications. Section 4 discusses potential themes for future research related to the dynamic concept of ambidexterity and its connection to entrepreneurship, innovation, and management.

2 Looking back to the ambidexterity knowledge accumulation

2.1 Evolution of ambidexterity research

While the generic meaning of ambidexterity is the ability to pursue two contradictory objectives or tensions simultaneously, there needs to be a consistent definition across the areas of research and decades (Turner & Lee-Kelley, 2013). According to Birkinshaw and Gupta (2013) and Guerrero (2021), there are four evolutionary stages that distinctive the contribution of ambidexterity to the organizational studies field: (a) from 1995 to 2005, the importance and concepts (initial stage); (b) from 2006 to 2009, the growth regarding definitions, antecedents, and consequences (expansion stage); (c) from 2010 to 2019, the identification of multiple tensions (consolidation stage); and (d) from 2020 to 2023, an embryonic re-focus (rejuvenation stage).

2.1.1 Initial stage (1995–2005)

During the 1970s, Duncan (1976) understood ambidexterity as the mechanism for simultaneously managing innovation and achieving higher performance. In the assumption of this pioneering article, successful innovations emerged from the combination of this mechanism and organic attributes because this dual structure switched governance (innovation) models and achieved higher performance (Spender & Kessler, 1995; Thompson, 1967). In this perspective, ambidexterity included several organizational structures facilitating innovation (McDonough & Leifer, 1983). Then, during the 1990s, the ambidexterity literature increased with an orientation to identifying the critical characteristics of ambidextrous organizations. By adopting structural rationality, Tushman and O'Reilly (1996) argued that organizations have multiple architectures to nurture diverse innovation requirements. Consequently, an ambidextrous organization was characterized by separation and integration because it generates competitive advantages through revolutionary and evolutionary change. Following this perspective, Tushman and O'Reilly (1996) identified four characteristics of an ambidextrous organization: (a) achieve higher performance and sustainability; (b) avoid significant or sudden organization changes, and the concomitant costs of switching governance modes; (c) divert organizational inertia; and (d) adapt to, and even benefit from, changes beyond its control, because it is always in anticipation and preparation mode, primed to take action to shape its future. The initial stage shows that ambidexterity is an organizational characteristic linked to better performance related to management and innovation. Until the 1990s, there were no insights about the convergence between ambidexterity research and the entrepreneurship phenomenon over decades (Guerrero, 2021).

2.1.2 Expansion stage (2006–2009)

During the 2000s, the ambidexterity literature considerably increased and focused on behaviors required to achieve higher performance by balancing paradoxical forces (exploration and exploitation), as well as on how to manage dual tensions (e.g., integration vs. diversification, organizational vs. individual, external vs. internal, and static vs. dynamic) (Raisch et al., 2009). Two approaches primarily influenced the academic debate during this decade: (a) March's view[1] about the allocation of resources and the relationship between the exploration of new possibilities and the exploitation in organizational learning (March, 1991); and (b) Teece et al.'s view[2] about the role of dynamic capabilities as sources of wealth creation and competitive advantage (Teece et al., 1997). While conceptual studies focused on balanced exploitation and exploration capabilities across separated organizational structures such as business units (Brinkshaw & Gibson, 2004; Vinekar et al., 2006) or top management teams (Carmeli & Halevi, 2009; Simsek, 2009), empirical studies analyzed exploration–exploitation activities from a variety of managerial approaches. First, the

[1] In March's view, the fundamental problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, devote enough energy to exploration to exploration to ensure its future viability (March, 1991, p. 105).

[2] In Teece's et al. (1997) view, dynamic capabilities are higher-level competencies that determine the firm's ability to integrate, build, and reconfigure internal and external resources/competencies to address and possibly shape rapidly changing business environments (Teece et al., 1997). They determine the speed at and degree to which the firm's particular resources can be aligned and realigned to match the requirements and opportunities of the business environment to generate sustained abnormal (positive) returns.

knowledge management approach operationalized ambidexterity´s tensions within high-tech organizations (Li et al., 2008) and research universities (Ambos et al., 2008; Chang et al., 2009). Second, the strategic management approach differentiated ambidextrous capabilities (discrete capabilities that require opposing cultures and organizational structures) from hybrid capabilities (a combination of capabilities that do not necessarily contradict or cause tension like differentiation) (Menguc & Auh, 2008). Third, the organizational behavioral approach demonstrated the dynamic (exploration and exploitation) ability of senior managers (Lubatkin et al., 2006; Jansen et al., 2008 and 2009; O'Reilly et al., 2009), operational managers (Mom et al., 2009) and employees (Groysberg & Lee, 2009) to pursuit higher performance. However, according to Guerrero (2021), the expansion stage continued considering ambidexterity as an organizational ability/capability (the concept of organizational ambidexterity), as well as individuals/teams' skills related to making strategic decisions among operational activities (the concept of strategic ambidexterity). Although the link between management, innovation, and entrepreneurship is still ignored in the 2000s literature, the emergence of strategic ambidexterity represents an antecedent of entrepreneurial or innovative decisions taken within existing organizations (Guerrero, 2021).

2.1.3 Consolidation stage (2010–2019)

A proliferation of ambidexterity studies increased the academic debate on this theme across diverse disciplines and theoretical approaches during the 2010s.[3] In the consolidation stage, conceptual studies proposed theoretical frameworks to understand ambidexterity through a new variety of lenses/views, such as psychology, social anthropology (Moon et al., 2012), contingency management (D'Souza et al., 2017), agency theory (Hiebl et al., 2015), innovation (Martini et al., 2013), entrepreneurship (Bot, 2012), corporate social performance (Hahn et al., 2016), human resource management (Srokes et al., 2015; Kim, 2019), big data (Rialti et al., 2018), conflict management (Martin et al., 2019), and among others. At the same time, empirical studies continued to explore the exploitation and exploration tensions through multi-organizational units (Derbyshire, 2014; Jansen et al., 2012), but new structural and contextual tensions emerged like alignment and adaptiveness in operational systems projects (De Clercq et al., 2013; Tiwana, 2010; Zhou et al., 2018), insourcing and outsourcing in clusters (Ferrary, 2011), design and configurational in multilevel alliances (Zimmermann et al., 2015), and revenue-enhancing and cost-reduction in portfolios (Wassmer et al., 2017). Likewise, new forms of ambidexterity emerged, such as employee ambidexterity (Kao & Chen, 2016), service-sales ambidexterity (Gabler et al., 2017), ambidextrous leadership (O'Reilly & Tushman, 2013; Cuhna et al., 2019), behavioral ambidexterity (Rogan & Mors, 2014), learning ambidexterity (Wei et al., 2014a, 2014b), tactic ambidexterity (Jansen et al., 2012), and among others. In this period, we also observe the consolidation in innovation ambidexterity research in large organizations (Chang et al., 2011; Martin et al., 2017; Salvador et al., 2014; Wei et al., 2011). A few studies also proposed new definitions related to entrepreneurship ambidexterity (Bot et al.,

[3] The saturation of the initial dimensions of ambidexterity identified in previous decades (organizational and innovation) was evidenced through a growing number of literature reviews, meta-analysis, and co-citation analysis (see Rosing et al., 2011; McCarthy & Gordon, 2011; Luzon & Pasola, 2011; Nosella et al., 2012; Birkinshaw & Gupta, 2013; Wu & Wu, 2016; García-Lillo et al., 2016; Wan et al., 2017; Fourné et al., 2019; Adler et al., 2019; Centobelli et al., 2019; Kerry-Krause & DeSimone, 2019).

2012), venturing ambidexterity (Dai et al., 2017; Hill & Birkinshaw, 2014), entrepreneurs' ambidexterity (Volery et al., 2015; Yeganegi et al., 2019), entrepreneurial university ambidexterity (Chang et al., 2016; Huyghe et al., 2014; Nguyen et al., 2016).

2.1.4 Rejuvenation stage (2020–2023)

In this period, the number of publications on ambidexterity has exponentially grown. Novel conceptual/empirical advances in ambidexterity literature are reflected in the new socioeconomic configuration of organizations. For example, we observe studies about strategic ambidexterity analysis in new geographic contexts (Khan et al., 2022; Roth & Corsi, 2023; Wang & Wang, 2021) or ambidexterity studies related to underrepresented collectives (Malki, 2022; Wu et al., 2020; Zhao et al., 2022). The relationship between challenging times and ambidexterity emerged in this stage through the analysis of the public policy's impact on performance during economic crises (Doblinger et al., 2022) and the resilience of SMEs (Gottschalck et al., 2021; Iborra et al., 2020). New tensions/paradoxes were explored in public vs. private (Priyanka et al., 2022), rival vs. collaborators (Yu et al., 2022), or diversity vs. meritocracy (Konrad et al., 2021). Likewise, the eco-system view has also influenced ambidexterity literature through the inter-organizational configuration (Lô & Theodoraki, 2020), the collaborative ambidexterity in platforms (Inoue, 2021), open sources ecosystems (Haim Faridian & Neubaum, 2021), eco-innovation in buyer–supplier relationships (Chang & Gotcher, 2020), venture capital ambidexterity (Rossi et al., 2020), and role of public innovation intermediaries (De Silva et al., 2022). Finally, technological disruptions also rejuvenated ambidexterity literature through chatbot ambidexterity (Fan et al., 2023), blockchain (Benzidia et al., 2021), and big data (Shamim et al., 2020; Wamba et al., 2020).

2.2 Ambidexterity

2.2.1 Management ambidexterity

Management ambidexterity is mostly related to the most common forms of organizational ambidexterity: structural and contextual. The academic conversation focused on managerial tensions (origin) to achieve higher outcomes (performance) through structural and contextual ambidexterity, adapting them to management perspectives (e.g., operational systems, knowledge management, human management, and others).

Structural ambidexterity represented the existence or investment in separated organizational structures (business units, departments, groups, collaborative projects, alliances, corporate venture units, supply chain agents) and systems (operational, logistic, governance) to achieve exploration and exploitation activities (Jansen et al., 2008; Lubatkin et al., 2006; O'Reilly & Tushman, 2008). This view is related to balancing exploration and exploitation trade-offs or tensions by simultaneously pursuing both subunits (O'Reilly & Tushman, 2013). It required different organizational units focusing on exploitation and exploration, integrated at the senior management level (Turner et al., 2016). However, structural separation is unnecessary when the two activities cannot coexist (Brinkshaw & Gibson, 2004). *Contextual ambidexterity* represents individuals' behaviors or choices (front-line employees, office workers, sales employees, plant supervisions, supply chain agents, and managers) who are responsible for achieving exploration and exploitation tensions (Gibson

& Birkinshaw, 2004; O'Reilly & Tushman, 2013). This view focuses on the behavioral capacity to demonstrate alignment and adaptability across an entire organization simultaneously. The emphasis was on individuals rather than structures, adjusting exploration and exploitation (O'Reilly & Tushman, 2013). Contextual ambidexterity implies that individuals make decisions to allow both alignment (coherent business activities working towards a common goal—exploitation) and adaptability (the capacity to reconfigure those activities as required by the task environment—exploration) (Turner et al., 2016). Therefore, this ambidexterity form emphasized behavioral and social means to integrate exploration and exploitation activities (Brinkshaw & Gibson, 2004).

Although contextual and structural forms differed by nature, both ambidexterity forms complemented organizational performance by building processes and systems that encouraged individuals to manage organizational tensions. It explained why many studies have simultaneously studied contextual and structural ambidexterity (Ambos et al., 2008; Andriopoulos & Lewis, 2009; Cao et al., 2009; Chandrasekaran et al., 2012; Chang et al., 2009; Fourné et al., 2019; Kauppila, 2010). However, the management view depended on the organizational perspective. For example, from the manager's perspective, Tansley et al., (2014, p. 398) related ambidexterity to the organizational ability to operate efficiently now and adapt to future environmental changes worldwide. Afterward, Veider & Matzler (2016, p. 3) referred to ambidexterity as the balance between exploring and exploiting the firm's available resources. From the dynamic approach, Tamayo-Torres et al., (2017, p. 287) defined organizational ambidexterity as the synergistic fusion of exploration (refinement and improvement of existing products) and exploitation (development of qualitatively new products) that drive overall performance. From the operational system perspective, Fu et al., (2015, p. 53) referred to ambidexterity as an organization's ability to simultaneously explore and exploit internal/external resources to meet today's business needs and be adaptive to future market changes. In this point of view, organizations need to manage different organizational tensions (exploration and exploitation) and persistent demands to generate performance in both traditional (Koryak et al., 2018, p. 413; Severgnini et al., 2018, p. 1176) and digital contexts (Rialti et al., 2018, p. 1093). From the knowledge management perspective, ambidexterity represents the renewal of the knowledge base by continuously exploring new knowledge for developing innovative products and services while simultaneously exploiting established competencies to improve current offerings (Oehmichen et al., 2017, p. 284). Likewise, from the contingency perspective, the notion of relative ambidexterity emerged from the exploration and exploitation of organizations relative to the exploration and exploitation of typical organizations in a referent group (D'Souza et al., 2017, p. 125; Fourné et al., 2019, p. 565). In this perspective, the alignment and adaptation to changing environments have been part of the ambidexterity academic discussion (Lin & Ho, 2016, p. 764; Khan & Mir, 2019, p. 652).

2.2.2 Innovation ambidexterity

Innovation ambidexterity was a new form of ambidexterity that emerged for exploring the tensions (exploration and exploitation) associated with different modes of innovation (Andriopoulos & Lewis, 2009, p. 105). The academic conversation focused on innovation tensions (origin) depending on modes of innovation (processes) and innovation infrastructures (resources).

Concerning *innovation tensions,* Lin and McDonough (2011, p. 497–498) and Chang et al., (2011, p. 1) defined innovation ambidexterity as the capability to balance two

tensions: the high levels of incremental and the high levels of radical innovations to achieve superior performance. In this view, the influence of bottom-up learning and bottom-up flexibility were relevant tensions associated with an increment of technological adaptability and technological diversity (Wei et al., 2011, p. 315). Similarly, Lin et al., (2013, p. 263) extended the notion of a learning capability to simultaneous incremental and radical innovation. Likewise, Salvador et al., (2014, p. 138) defined product configuration ambidexterity as the dual balance goals of reducing and promoting variation that drives superior firm responsiveness, firm sales, and operating margin. In this view, Zheng et al., (2016, p. 912–913) and Lin et al., (2017, p. 124) discussed innovation ambidexterity as a balance or synchronization of both exploratory and exploitative innovations. Then, Zhang et al., (2017, p. 821) questioned two critical tensions (technology innovation and market innovation) and distinguished four types: (a) market leveraging (technology exploration and market exploitation), (b) technology leveraging (technology exploitation, and market exploration), (c) pure exploitation (technology exploitation and market exploitation), and (d) pure exploration (technology exploration and market exploration).

Regarding the *modes of innovation ambidexterity*, Lee et al., (2015, p. 398) introduced the notion of IT ambidexterity. This ambidexterity form was defined as the ability to impact organizational agility in dynamic environments through operational ambidexterity. In this view, Chi et al., (2017, p. 46) extended the definition of IT ambidexterity by considering the level of the focal firm's simultaneous pursuit of two seemingly opposing ideas: IT flexibility and IT standardization. Similarly, Ferraris et al., (2018, p. 1079) related IT ambidexterity to pursuing explorative and exploitative efficiency. Then, intellectual ambidexterity studied the ability to use and refine existing domain knowledge (exploitation), while also creating new knowledge (exploration) necessary for the planning and execution of work (Turner et al., 2016, p. 178). Similarly, R&D ambidexterity represents the development of capabilities that allow firms to combine exploration and exploitation in R&D through the innovation process (Lucena & Roper, 2016, p.160). Then, ambidexterity idea generation represented the capability to actively generate incremental and radical ideas that affect new product development success (Gurtner & Reinhardt, 2016, p. 34). Likewise, Bedford et al., (2019, p. 21) introduced the notion of ambidexterity capacity (the simultaneous pursuit of exploration and exploitation) into innovation ambidexterity outcomes (the achievement of both radical and incremental innovations.

Regarding *innovation infrastructures*, Strese et al., (2016, p. 41–42) extended the definition of innovation ambidexterity by introducing the effect of cross-functional competition on the simultaneous development of exploitative and exploratory innovations, which enables organizations, departments, and teams to attain their ambitious growth targets resulting in radical and incremental innovations. Innovation ambidexterity is related to diverse organizational structures as clusters (Yang et al., 2015, p.747), technological portfolios (Lin & Chang, 2015, p. 1193), global businesses (Martin et al., 2017, p. 528), and high-tech organizational structures in emerging economies (Chen et al., 2018, p. 97). In these assumptions, innovation ambidexterity entire to strategies and structures for exploiting and exploring innovation activities to both subsist at present and long-term survival (Zang & Li, 2017, p. 24; Lazzarotti et al., 2017, p. 105).

2.2.3 Entrepreneurship ambidexterity

In the 2000s, the term "strategic ambidexterity" was coined to describe the ability of organizations to explore new market opportunities while also efficiently exploiting existing

markets (Aulakh & Sarkar, 2005). Simply put, it refers to the ability to pursue both exploratory and exploitative strategies simultaneously to enhance overall organizational effectiveness (Judge & Blocker, 2008; p. 915). Various empirical studies have operationalized this concept as a business unit capability of multinational organizations that is essential for achieving sustained performance and anticipating changes (Han, 2007; Han & Celly, 2008; Luo & Rui, 2009; Taylor & Helfat, 2009). This view suggests that strategic ambidexterity represents the ability to reconcile trade-off situations, which may pose challenges to an organization and limit its performance (Rothaermel & Alexandre, 2009; O'Reilly et al., 2009). However, effectively reconciling these situations can also lead to new business opportunities. In analyzing ambidexterity in new ventures or corporate strategies, we can draw from both strategic management and entrepreneurship literature. Overall, achieving strategic ambidexterity is an important capability for organizations seeking to succeed in today's dynamic business environment.

Entrepreneurship ambidexterity represented a new trend in strategic ambidexterity that emerged from notions of corporate entrepreneurship.[4] Corporate entrepreneurship includes both corporate venturing initiatives (creating new business units or spinoffs) and strategic entrepreneurship initiatives (strategic renewal and innovation) (Guerrero et al., 2019; Kuratko, 2007). The idea of opportunity orientation ambidexterity was introduced by Gedajlovic et al. (2012), which involves a different approach to identifying, evaluating and carrying out long-term exploration-type opportunities compared to shorter-term exploitation-type opportunities. An entrepreneurial ambidextrous venture seeks simultaneous exploration and exploitation to achieve performance, while new firms must balance exploration and exploitation for performance variability. The need for short-term survival has led to an increase in operational efficiency by exploiting existing resources and competencies. Organizational ambidexterity has been explored in relation to entrepreneurial orientation, innovation ambidexterity, and in various industries like green, creative, and digital platforms (Bot, 2012; Parida et al., 2016; Dai et al., 2017; Tuan, 2016; Zhang et al., 2016; Chen et al., 2014; Wu & Wu, 2016; Cenamor et al., 2019). Venturing ambidexterity, as defined by Hill and Birkinshaw (2014, pp. 1900–1901), is the capacity to capitalize on existing resources and capabilities while developing new combinations of these resources to meet market needs. Strategic ambidexterity has been extended by Michl et al., (2013, pp. 50–53) to describe the close interconnection between corporate ventures and parent firms' strategic and organizational activities. A spinning-along process has been explored to manage the tensions between innovation push and innovation pulls at both a parent level and a spin-along level. Intrapreneurial ambidexterity is an organizational capability to support intrapreneurial processes and the capabilities of individuals who develop these processes, according to Burström and Wilson (2015, p. 1173).

At the intrapreneur (employee) dimension, Volery et al., (2015, p. 110) and Yeganegi et al., (2019, p. 1444) recognized the contribution of employee entrepreneur ambidexterity in both the exploration (developing new ideas) and exploitation (implementing a new activity) phases of the innovation process. In this sense, the entrepreneurs' ambidexterity represented the behaviors and entrepreneurs' actions to achieve ambidexterity. The microfoundations of corporate entrepreneurship have been applicable to identify the origin of entrepreneurial organizations (Guerrero & Urbano, 2019). Several authors found a research stream combining the ambidexterity literature and entrepreneurial university literature

[4] Corporate entrepreneurship refers to the entrepreneurial actions of individuals or groups within an established organization who initiate new ventures or renew/innovation strategies (Kuratko, 2007).

(Centobelli et al., 2019). In this view, Huyghe et al., (2014, p. 290) studied the structural university ambidexterity by analyzing the use of dual university structures (research and commercialization) and the strategy to separate them into university activities (teaching, research, and commercialization). Likewise, Nguyen et al., (2016, p. 3106) focused on the university ambidexterity strategy to understand the ability to pursue two different strategic directions simultaneously (exploitation and exploration) to achieve brand performance. In this view, Chang et al., (2016, p. 9) defined university research ambidexterity as the ability of academics to achieve research publications and research commercialization simultaneously. We also identified a few studies that have mixed entrepreneurship and ambidexterity literature. Allison et al. (2014) explored how family firm ambidexterity changes over time due to temporal factors. In this point of view, Hughes et al., (2018, p. 595) explored the influence of entrepreneurship and ambidexterity on the configuration of family firms' performance, as well as the involvement of the family in later generations (Hiebl, 2015) and family controls (Veider & Matzler, 2016). Indeed, Yu et al., (2018, p. 230) discussed two paradoxical strategies (effectuation and causation) on new venture legitimacy.

2.3 Operationalization

The concept of ambidexterity is centered around achieving long-term success by balancing the tensions between exploration and exploitation, as established by March, (1991). To measure organizational ambidexterity, researchers have created scales based on factors such as the nature of the organization, its strategic orientations, and the diverse environmental conditions in which it operates in, as described by O'Reilly and Tushman (2013). Various empirical studies have used multidimensional constructs and mathematical variations, such as addition, subtraction, product, and average, to operationalize ambidexterity as an optimal balance between exploration and exploitation levels, as outlined by Junni et al., (2013). The most used approaches to measure ambidexterity are addition (combining exploration and exploitation measures), multiplication (interaction of exploration and exploitation metrics), and absolute difference (the balance between exploration and exploitation), as noted by Herhausen, (2016). Some of the most commonly adopted scales to measure organizational and innovation ambidexterity in empirical studies over the past few decades include a multidimensional construct of six Likert-scale items developed by Gibson and Birkinshaw (2004), eight Likert-scale items developed by He and Wong (2004) to assess how firms divide attention and resources between innovation activities with explorative versus exploitative objectives in the last three years, twelve Likert-scale items developed by Lubatkin et al., (2006) to measure ambidextrous orientation using two dimensions: exploratory and exploitation orientation, twelve Likert-scale items developed by Jansen et al. (2008) to measure innovation ambidexterity using two dimensions of exploratory and exploitation, and six Likert-scale items developed by Mom et al., (2009) to measure individual ambidexterity using two dimensions of management: exploration and exploitation.

Regarding entrepreneurship and innovation, Groysberg and Lee (2009) proposed a measure to test whether an analyst was joining a new firm for exploitation or exploration in the context of entrepreneurship and innovation. Meanwhile, Yeganegi et al., (2019) measured ambidexterity at the employee level using two proxies from the Global Entrepreneurship Monitor dataset. To capture exploration experience, the first proxy was based on employees who had been involved only in idea development for their employer in the previous 3 years. On the other hand, the second proxy was based on employees who had only implemented the idea for their employer in the previous 3 years to capture

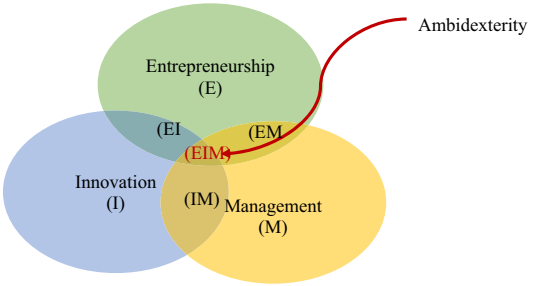

Fig. 1 Ambidexterity as the missing link between entrepreneurship, innovation, and management. *Note* Entrepreneurship (E), Innovation (I), Management (M), Entrepreneurial Innovation (EI), Innovation Management (IM), Entrepreneurship Management (EM), and Entrepreneurship Innovation Management (EIM). Source: Authors

exploitation experience. Consequently, ambidexterity is represented when employees have been involved in idea development (exploration) and idea implementation (exploitation). There are two main stages in the process of developing an idea: exploration and exploitation. To measure structural ambidexterity in entrepreneurial innovations, Ambos et al., (2008) looked at administrative mechanisms such as the presence of technology transfer offices, the availability of commercialization support, and the experience of technology transfer offices. They also considered contextual ambidexterity, which was measured through scientific excellence in university departments. Similarly, Chang et al., (2016) used two proxies to measure research ambidexterity: research commercialization and research publications. Sengupta and Ray (2017) measured ambidexterity in universities based on their missions, using two proxies: knowledge exploitation related to third-mission university activities (measured through average income from commercialization, collaborative research, and research and consultancy contracts) and knowledge creation related to fundamental research activity (measured through average grants, patents, and research outputs).

2.4 Proposed model

Figure 1 illustrates ambidexterity as a vital organizational capability but often overlooked connection between management (M), innovation (I), and entrepreneurship (E), considering the various tensions that arise between these perspectives and the expected outcomes. Ambidexterity research has uncovered two overarching tensions (exploration and exploitation) that cut across different structures and contexts in a variety of organizational approaches.

Entrepreneurship ambidexterity involves managing tensions between reasoning and effectual approaches, as well as between contextual and structural factors, intending to achieve new business outcomes and business models (Ambos et al., 2008; Chang et al., 2016; Sengupta & Ray, 2017; Yeganegi et al., 2019). Similarly, management ambidexterity involves balancing tensions between alignment and adaptiveness, as well as between routines and non-routines, to improve organizational performance (Raisch et al., 2009; Wang et al., 2019). In innovation ambidexterity, tensions arise between exploration and exploitation, and between incremental and radical approaches, with the focus on achieving higher innovation performance and new business innovation models (De Vissser et al., 2010; Lee et al., 2013; Huyghe et al., 2014). Although prior studies have explored interactions in innovation management (IM), entrepreneurial innovations (EI), and entrepreneurial management (EM), little is currently known about how multiple transversal tensions impact

Table 1 Tensions, perspectives, and outcomes in the intersection of entrepreneurship, innovation, and management ambidexterity. *Source:* Authors

Ambidexterity	Perspectives			Outcomes/Impacts
	Entrepreneurship (E)	Management (M)	Innovation (I)	
Tension 1	Reasoning	Alignment	Exploration	E: Business creation or new business models M: Performance I: Disruptive innovations or innovation business models E+M+I: ??
Tension 2	Effectual	Adaptiveness	Exploitation	
	(Yeganegi et al., 2019)	(Raisch et al., 2009)	(Huyghe et al., 2014)	
Tension 1	Contextual	Routines	Incremental	
Tension 2	Structural	Non-routines	Radical	
	(Ambos et al., 2008; Chang et al., 2016; Sengupta & Ray, 2017)	(Wang et al., 2019)	(De Vissser et al., 2010; Lee et al., 2013)	
Intersections				
M+E	Strategic entrepreneurship's tensions			
I+M	Innovation management's tensions			
E+I	Entrepreneurial innovation's tensions			
E+I+M	(SPECIAL ISSUE–PAPER CONTRIBUTION)			

entrepreneurial innovation management (EIM) in new and established organizations operating in the current social, economic, technological, sustainable, and health landscape. A new framework is needed to explore this multi-dexterity dimension in various types of organizations and geographical contexts (see Table 1).

3 Special issue contributions to the academic debate

This special issue contributes to the academic debate regarding ambidexterity as a missed link between entrepreneurship, innovation, and management through five studies that revealed tensions faced by organizations across the globe and highlighted future research opportunities and implications for different stakeholders (see Table 2).

Akulava and Guerrero (2022) conducted research on the relationship between entrepreneurial tensions, innovation tensions, and gendered decision-making styles to achieve incremental or radical innovation outcomes. The study analyzed 407 ambidextrous decision-makers from innovative SMEs in Belarus and found that ambidexterity had a positive impact on innovation outcomes, particularly through multi-dexterity behaviors in entrepreneurship (effectual vs. causal), management (male vs. female managerial style), and innovation (exploration vs. exploitation) in an uncertain context. These findings contribute to the ongoing discussion about hybrid decision-making styles among diverse managerial workforces, highlighting the crucial role of multi-dexterity tensions in entrepreneurship, management, and innovation outcomes. The authors suggest that future research should explore the dynamic evolution of effectual tensions with longitudinal studies, examine the influence of institutional voids in uncertain contexts, and investigate how gendered managerial styles could implement entrepreneurial innovation responses to societal challenges.

Guffler et al., (2023) studied the relationship between family cohesion and ambidexterity in entrepreneurial innovative family firms. The study examined how paradoxical tensions, both latent and salient, influence this relationship. The authors discussed the structural and behavioral tensions that entrepreneurial family firms face, as well as the cognitive managers' latent and salient tensions. They also explored the tensions between innovation exploration and exploitation. The authors used data from an online survey of 206 German family firms to demonstrate the impact of unique family firm characteristics on ambidexterity, which is crucial for effective EIM practices. The study's findings can help family firm leaders identify paradoxical tensions and develop sustainable solutions to address them successfully. The authors also highlighted how family cohesion affects ambidexterity decisions at the family firm and managerial levels and how latent or salient tensions can impact entrepreneurial families. Furthermore, the study suggested future research to explore different cohesion paradoxes in both successful and unsuccessful cases across different geographical contexts and investigate how ownership, management, and generational cohorts affect EIM ambidextrous practices linked to the highest innovation performance.

Hiebl and Pielsticker (2023) conducted a study investigating the impact of increased automation on the stability of firms' relationships with their employees. They also explored how this relationship is affected by ambidexterity, which refers to the balance between exploration and exploitation. The authors theorized about technology-oriented corporate entrepreneurship tensions (automation vs. non-automation), managerial stakeholders' tensions (signals vs. non-signals of relational stability), and innovation tensions (exploration vs. exploitation). The study used a sample of 130 German corporate entrepreneurial firms and found that highly ambidextrous firms face new tensions around automation-related

Table 2 Special issue contributions to the intersection of entrepreneurship, innovation, and management ambidexterity. *Source:* Authors

Authors	Ambidexterity definition	Theoretical Approaches			Type of Organization	Methodology	Findings		Contribution	Research Agenda
		Entrepreneurship (E)	Management (M)	Innovation (I)			Outcomes	Implications		
Akulava and Guerrero (2022)	Ambidextrous decision-makers responsible for entrepreneurial innovation management (EIM)	Effectuation tensions: Effectual and causal	Gendered decision-making: male style and female style	Innovation tensions: exploration and exploitation	407 Belarusian Innovative SMEs	2017–2018 Survey –cross-sectional study Decision-makers (top managers and business owners)	Positive impact of effectual entrepreneurial reasoning on innovation outcomes in uncertain contexts –special women hybrid reasoning	Evidence about innovation outcomes behind hybrid effectual-causal reasoning in gendered managerial styles	Expanding the hybrid Hybrid decision-making styles by a diversified managerial workforce Understanding of the ambidexterity intersection between entrepreneurship, management, and innovation	Longitudinal analysis to understand the dynamic evolution of effectual tensions Explore the role of institutional voids in uncertain contexts Explore entrepreneurial innovation responses in challenging times
Guffler et al. (2023)	Ambidextrous family firms' cohesion implementing entrepreneurial innovation management (EIM) practices	Entrepreneurial firms' tensions: structures and behaviors	Manager cognitive tensions: latent and salient paradoxes	Innovation tensions: exploration and exploitation	206 German family firms	2017 online survey	The effect of different family firms' idiosyncrasies where ambidexterity is the missed link between EIM practices	Helping family firms' leaders to identify salient paradoxical tensions to find sustainable ways within the family to address them successfully	Extending the academic discussion of latent perceived paradoxes to family firms with entrepreneurial innovation behaviors Evidencing how entrepreneurial families – by virtue of its cohesion-affects ambidexterity decisions at the family firm level and family managerial level to paradoxes presently latent or salient tensions	Explore different family firm cohesion paradoxes (salient and latent) in both successful and unsuccessful cases across different geographical contexts Explore how ownership. Management, generational cohorts affect EIM ambidextrous practices linked to highest innovation performance

Table 2 (continued)

Authors	Ambidexterity definition	Theoretical Approaches			Type of Organization	Methodology	Findings		Contribution	Research Agenda
		Entrepreneurship (E)	Management (M)	Innovation (I)			Outcomes	Implications		
Hiebl and Pielsticker (2023)	Ambidextrous corporate entrepreneurial organizations implementing entrepreneurial innovation management (EIM) practices	Technology-oriented corporate entrepreneurship tensions: automation vs. non-automation	Managerial stakeholders´ tensions: signals vs. non-signals of relational stability	Innovation tensions: exploration vs. exploitation	130 German corporate entrepreneurial firms	2020 survey of German Mittelstand firms	Highly ambidextrous firms faced novel tensions around automation-related corporate entrepreneurial will be detrimental to the stability of the firms 'relations with one of its key stakeholders' groups (employees)	Evidencing the benefits of ambidextrous organizations when balancing automation and employees' relationship	Extending the discussion in understanding the dynamic relationship between ambidexterity and corporate entrepreneurship through automation tensions Extending the discussion in understanding of stakeholders´ tensions (employees) in an implicit balanced perception of exploration and exploitation Extending the relation stability between employees and corporate entrepreneurship initiatives to achieve the highest performance and turnover	Extending the analysis of new tensions in employees' relationships due to automation such as artificial intelligence and robotics Improving the perceptual operationalization with objective measurements Exploring the role of country regulations in individual perceptions and relationships with ambidextrous firms

Table 2 (continued)

Authors	Ambidexterity definition	Theoretical Approaches			Type of Organization	Methodology	Findings		Contribution	Research Agenda
		Entrepreneurship (E)	Management (M)	Innovation (I)			Outcomes	Implications		
Mendes et al. (2023)	Ambidextrous clustered firms implementing entrepreneurial innovation management (EIM) practices	Decision making tensions: balanced exploration vs. exploitation in interorganizational entrepreneurial opportunities	Decision making tensions: exploration vs. exploitation in managing resources and structures	Innovation tensions: incremental vs. radical	1467 clustered Portuguese innovative firms	2010–2012 CIS dataset using a PLS-SEM model	Positive effect of a balanced ambidexterity through collaborations to pursue highest innovation performance	Factors influencing ambidextrous behaviors in managing entrepreneurial innovation tensions in clustered firms	Evidencing how ambidexterity could be the missed link in clustered firms with an entrepreneurial innovation management orientation Discussing the relevant role of interorganizational relationships to achieve the highest innovation performance and competitiveness	Longitudinal analysis or multi-cases for a better understanding of the impact of ambidexterity in the evolution of interorganizational relationships Explore the CIS dataset in ambidexterity studies across small open economies to capture the role of the institutional context
Thomas et al. (2023)	Ambidextrous universities implementing entrepreneurial innovation management (EIM) practices	Tensions to performs economic and social missions	Tensions to performs university missions (teaching, research, and engagement)	Tensions to exploiting and exploring innovative solutions to the regional problems	30 interviews with key keyholders, participants observations, document review	Two case studies (pre/post COVID-19 pandemic): Lancaster University in the UK & Unisinos University in Brazil	Found facilitators and constrains for considering ambidexterity as the missed ling in EIM intersection	Evidencing how ambidextrous universities facilitate regional growth beyond knowledge transfer activities in challenging times	Proposed a multi-dexterity as a useful approach for understanding multiple university roles, activities, impacts within their regions The role of multi-dexterity for managing challenging times like the COVID-19 pandemic	Extend the debate about multi-dexterity in the delivery of multiple regional roles of universities while dealing with internal challenges

corporate entrepreneurship that could harm the stability of their relationships with their employees. The study highlights the advantages of maintaining a balance between exploration and exploitation. As a result, the authors extended three discussions: (a) understanding the dynamic relationship between ambidexterity and corporate entrepreneurship through automation tensions; (b) understanding of stakeholders´ tensions (employees) in an implicit balanced perception of exploration and exploitation; and (c) the relation stability between employees and corporate entrepreneurship initiatives to achieve highest performance and turnover. Likewise, the authors discussed a research agenda to extend (a) the analysis of new tensions in employees' relationships due to automation, such as artificial intelligence and robotics, (b) the improvement in the perceptual operationalization with objective measurements, and (c) the consideration of country regulations in individual perceptions and relationships with ambidextrous firms.

Mendes et al., (2023) explored the role of clusters in supporting the development of inter-organizational relationships that contribute to the ambidexterity and innovation of entrepreneurial firms within a cluster. The authors investigated how entrepreneurial firms manage the tensions of exploration and exploitation in pursuing inter-organizational opportunities, as well as balancing innovation incremental and radical tensions. The research analyzed 1467 innovative firms in Portugal and confirmed that balanced ambidexterity through collaborations positively impacted innovation performance. It also identified the factors that influence ambidextrous behaviors in managing entrepreneurial innovation tensions in clustered firms. The authors contribute to the academic discussion on how ambidexterity can be the missing link in clustered firms with an entrepreneurial innovation management orientation. They also highlighted the critical role of inter-organizational relationships in achieving the highest innovation performance and competitiveness. Finally, the authors proposed a research agenda that involves longitudinal analysis or multi-cases to gain a better understanding of the impact of ambidexterity on the evolution of inter-organizational relationships. They also suggested exploring the CIS dataset in ambidexterity studies across small open economies to capture the role of the institutional context.

Thomas et al., (2023) proposed a new understanding of the role universities play in regional growth. They viewed universities as ambidextrous organizations that can simultaneously perform multiple roles. The authors used the theoretical frameworks of entrepreneurship, innovation, and management ambidexterity to explain how universities can facilitate regional growth. They identified three types of tensions that universities face: entrepreneurial (balancing social and economic goals), managerial (balancing teaching, research, and engagement), and innovation (balancing exploiting and exploring new solutions to regional problems). To test their theoretical framework, the authors analyzed data from two case studies: Lancaster University in the UK and Unisinos University in Brazil. They collected data before and after the COVID-19 pandemic. Their findings suggested that ambidextrous universities can enable regional growth beyond traditional knowledge transfer activities, even during challenging times. The study proposes a multi-dexterity approach to understanding the various roles, activities, and impacts of universities within their regions. The authors argue that this approach can help universities manage internal challenges while delivering multiple regional roles. The authors call for further debate on the topic of multi-dexterity, especially in the context of the COVID-19 pandemic.

4 Looking forward to guiding lights for multi-dexterity as a research agenda

It is time to encourage researchers to contribute novel empirical and conceptual ideas on how ambidexterity links entrepreneurship, innovation, and management. In other words, this study focuses on the entrepreneurial innovation managerial multi-dexterity ability to handle multiple tensions with varying degrees of internal/external complexity.

4.1 Multi-dexterity (new and established) organizations

Over the past few decades, the entrepreneurial society has witnessed the emergence of new organizations that align with multiple paradigms (Audretsch, 2007, 2009, 2014). Some studies have demonstrated that certain high-tech organizations have adopted an ambidextrous approach to tackle social and technological challenges as part of their strategic response (Siegel & Guerrero, 2021; Yáñez-Valdés et al., 2023). The paradigms of sustainability, entrepreneurship, and digitization have greatly impacted how society functions, leading to new challenges in managing open and digital workplaces and automating organizational capabilities to achieve high performance. Studies have shown that established organizations that can balance competing demands have successfully navigated the challenges posed by new technologies like artificial intelligence, big data analysis, and entrepreneurial platforms. Some studies have explored inclusive and sharing approaches, leading to the transformation of existing public and private organizations. For instance, this implies managing multi-dexterity tensions in promoting high-tech entrepreneurial identities (Wang et al., 2019), balancing economic versus social conflicts (Yáñez-Valdés & Guerrero, 2023a, 2023b), ensuring equity and inclusivity in top-down workforces (Guerrero, 2022; Guerrero et al., 2023a, 2023b; Malki, 2022; Ruiz et al., 2023a, 2023b; Wu et al., 2020; Zhao et al., 2022), and documenting all these issues in underexplored geographic contexts (Khan et al., 2022; Roth & Corsi, 2023; Wang & Wang, 2021).

Future multi-dexterity contributions may include novel conceptual/empirical advances to clarify the most appropriate measurements of entrepreneurial innovation managerial tensions and the impacts of new/established ambidextrous organizations in the current social, economic, health, and digital landscape. Future research should address multiple tensions as the emergence of new high-tech organizations, such as balancing economic performance and sustainable impacts (Yáñez-Valdés et al., 2023), spillover effects in the born of new organizations or scaling-up of existing ones (Belitski et al., 2023), the high-tech digital organizations (Gazelles, Unicorns, Decacorns) vs. SMEs impacts on centralization or democratization (Kuratko & Audretsch, 2021), and among others.

4.2 Multi-dexterity eco-system agents

The co-creation approach has influenced multiple tensions in organizations, universities, research centers, stakeholders, and ecosystem agents with an entrepreneurial innovation management ambidexterity orientation. A few studies have assessed the influence of multi-dexterity capabilities due to the impact of public policy or regulation on performance during challenging times on the resilience of SMEs (Doblinger et al., 2022; Gottschalck et al., 2021; Iborra et al., 2020) and research public organizations (Audretsch et al.,

2022; Audretsch et al., 2023; Siegel & Guerrero, 2021; Siegel et al., 2023). Likewise, new tensions/paradoxes were explored in public vs. private (Priyanka et al., 2022), rival vs. collaborators (Yu et al., 2022), or diversity vs. meritocracy (Konrad et al., 2021) within collaboration agreements across ecosystems´ agents. Particularly, the ecosystem view has also influenced ambidexterity literature through the inter-organizational configuration (Lô & Theodoraki, 2020), the collaborative ambidexterity in platforms (Inoue, 2021), open sources ecosystems (Haim Faridian & Neubaum, 2021), eco-innovation in buyer–supplier relationships (Chang & Gotcher, 2020), venture capital ambidexterity (Rossi et al., 2020), and role of public innovation intermediaries (De Silva et al., 2022). Finally, technological disruptions also rejuvenated ambidexterity literature through chatbot ambidexterity (Fan et al., 2023), blockchain (Benzidia et al., 2021), and big data (Shamim et al., 2020; Wamba et al., 2020).

Future multi-dexterity contributions may include novel conceptual/empirical advances to clarify the most appropriate measurements of entrepreneurial innovation managerial tensions and the impacts of ecosystems´ agents in the current social, economic, health, and digital landscape. Future research should address multiple tensions, such as justice perceptions (Waldman et al., 2022), managing co-creation identities and conflicts (Siegel & Guerrero, 2021), minorities or underrepresented groups (Choi et al., 2022), effectiveness of public policies and institutions on sustainable technologies (Audretsch et al., 2022; Audretsch et al., 2023; Guerrero & Urbano, 2019), and capabilities required by universities and technological intermediaries to managing discoveries for social goods impacts (Guerrero & Dabić, 2023).

5 Conclusions

The concept of ambidexterity has been extensively studied over the past decades, providing consolidated approaches to examining this organizational ability. However, new suggestions could help in reinvigorating this concept. Specifically, the intersection between entrepreneurship, innovation, and management will significantly impact the future of ambidexterity by explaining the multiple tensions faced by contemporary high-tech organizations and intermediaries in the current socio-economic landscape. It is crucial to navigate this crossroads carefully, as it could be the missing link connecting these essential areas and leading to even greater success. Let us hope that this special issue motivates researchers, practitioners, and ecosystem actors towards a vibrant future for this research theme.

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