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Redefine Entrepreneurial Ecosystems: Divergences And Potential Consensus

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Abstract

Despite the increasing prominence of the entrepreneurial ecosystem concept in entrepreneurship research, its definition often remains elusive due to a diversity of perspectives. This confusion has led to questions about the theoretical foundations and practical effectiveness of the term "ecosystem" within entrepreneurial studies. This article attempts to sort through past research on the definition of entrepreneurial ecosystems, discussing the divergences among different viewpoints and identifying potential consensus. Clarifying these concepts helps reveal a more effective reference framework. We opine that social dynamism has the potential to act as a "glue" to bridge the gaps in the definition and practice of EE, and we also suggest adopting more subjective factors as a medium for assessing social dynamism.

Introduction

The Entrepreneurial Ecosystem (EE) is an interdisciplinary term that, through the analogy of an "ecosystem," describes and understands the complex environment of business activities. In the field of sociology, EE is not the first framework to use the concept of "ecosystem" to explore the interaction between participants and the objective environment. In fact, EE draws significantly [1]from previous social science research conclusions about "ecosystems." For instance, Moore (1993) constructed the Business Ecosystem (BE), positing that business activities are not isolated but systemically linked, with interactions existing among enterprises, consumers, and suppliers. Inspired by this idea, the proponents of the entrepreneurial ecosystem maintained that the interactions among various participants are crucial for innovation and entrepreneurial success (Cohen, 2006; Isenberg, 2010).

Another point of reference is cooperation and mutual growth. Zineldin (1998) supported

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that the success of business cooperation is based on honest debate, trust, interdependence, and a positive environment. Similarly, Závodská, A., & Šramová (2018) highlighted that EE is a complex collaborative environment, where the sharing of knowledge and collaboration among participants are key to the framework's emergence and development. Researchers of EE have extended the scope of collaboration to include governments, non-profit organizations, and research institutions (Mason & Brown, 2014). By breaking the boundaries of traditional organizations and building broader "networks," these participants support entrepreneurial actions, establishing a generalized "ecosystem" (Fuerlinger, Fandl & Funke, 2015; Clarysse, et al. 2014).

The borrowings from past ideas in EE also manifest in inheriting systemic characteristics of social ecosystems, such as complex adaptability and dynamic evolution. Iansiti & Levien (2004) emphasized the importance of rapid market changes and timely adjustments to maintain the BE framework. This adaptability to complex environments is further reflected in EE research; for example, Isenberg (2010) affirmed that entrepreneurial activities need to adapt to market changes. Pittz, White & Zoller (2021) further developed this into a complex self-adaptive social network. Social networks can enhance the ability of enterprises to integrate knowledge, information, and resources, thereby creating opportunities for the formation and development of new enterprises (Neumeyer & Santos, 2018). Additionally, the inheritance and development of the "niche" concept are common features of EE and other social ecosystems. Hartwig (1998) discussed the relationship between the business ecosystem and developer communities, and how they are interconnected through resource flow, shared platforms, and governance foundations. Iansiti & Levien (2004) constructed an ecological framework of keystones, dominators, and niche participants. Although the term "niche" is rarely used directly, the way of linking participant roles and functions with "niches" is also evident in the discussion of EE. For instance, Mason & Brown (2014) differentiated participants in EE based on role functions and positions. Stam (2015) attempted to understand and define the roles and contributions of different participants in the entrepreneurial environment through analyzing the input-output model of the entrepreneurial ecosystem. Purbasari, Muhyi & Sukoco (2020) empirically demonstrated the enhancing effect of participant coupling based on ecosystem functions on entrepreneurial quality.

Summarizing the features regarding the environment, complex adaptability and dynamic evolution, and participant interaction, an early definition of EE was: a group of interacting individuals, organizations, and institutions that collectively promote the level of entrepreneurship in a specific region (Isenberg, 2010). This definition referenced three aspects of the EE concept: context, participant roles, and systematics. However, early studies did not sufficiently explain these reference frameworks, such as a detailed explanation of "specific region" (Audretsch, et al. 2019). The ambiguity in describing the context led many studies to offer their further interpretations (Thompson, Purdy & Ventresca, 2018; Stam & Van de Ven, 2021). Moreover, overly broad standards also led to confusion in defining participant roles (Brown & Mason, 2017). Additionally, researchers had different thoughts about the evolution, operation, and governance of EE based on their understanding of systematics (Wurth, Stam & Spigel, 2022; Audretsch, et al. 2021; Mack & Meyer, 2016). The arbitrariness in concept interpretation invited skepticism and criticism,

with some research questioning the weakening of EE's theoretical nature, becoming a "buzzword" rather than a theoretical term (Spigel & Harrison, 2018; Daniel, et al. 2018; Stam & Van de Ven, 2021). Some studies viewed this confusion and complexity as a normal evolutionary process of EE (Cukier, Kon & Kruger, 2015; Brown & Mason, 2017; Roundy, Bradshaw & Brockman, 2018; Haarhaus, Strunk & Liening, 2020), but these interpretations did not directly address the "de-theorization" doubts of EE (Cao & Shi, 2021).

Until recently, researchers have not reached a clear consensus on the EE concept (De Brito & Leitão, 2021). Different theoretical perspectives have made defining EE a "kaleidoscope." Under the Resource Dependence Theory (RDT) perspective, EE is a systemic framework that coordinates participants, resources, and elements to support the emergence and development of entrepreneurial activities (Spigel & Harrison, 2018). Under the Social Network Theory (SNT) perspective, EE is a platform that coordinates participants' social relationships and enhances entrepreneurial levels (Wurth, Stam & Spigel, 2022). And under the Institutional Theory (IT) perspective, EE is seen as a functional framework that integrates formal institutions such as laws and policies with informal institutions like culture and norms (Audretsch, Belitski & Cherkas, 2021). Therefore, it is necessary to discuss the research viewpoints on contexts, participant roles, and systematics to consolidate a consensus on defining EE.

Contexts

Discussions around the context of Entrepreneurial Ecosystems (EE) have always been contradictory (Li, et al., 2023). Traditional views consider the context of EE as multi-layered spaces (Theodoraki & Messeghem, 2017). Some researchers interpret EE as a micro-space, exemplified in reality by accelerators, incubators, or co-creation spaces (Xing, 2023; Breznitz & Zhang, 2019; Roundy, 2021). Others do not adopt this classification, instead defining EE's context more akin to "specific regions" (Audretsch & Belitski, 2017). This viewpoint suggests that EE has a broader spatial scope, such as regions, cities, and countries (Mason & Brown, 2014; Stam & Van de Ven, 2021), centered around certain core individuals or organizations (Theodoraki & Messeghem, 2017; Beyer, 2020).

However, the social network perspective offers a different view, arguing that the contextual boundaries of EE should not be limited to geographical or administrative divisions, but rather based on the social networks among participants (Neumeyer, Santos & Morris, 2019). This perspective sees networks as key in the "ecosystem" analogy, with research under this view treating participants' social networks as symbiotic relationships within the ecosystem (Scott, Hughes & Ribeiro-Soriano, 2021). Mature social networks can enhance participants' connectedness to "match" their transactions, thus fostering symbiosis and collaboration (Pittz, White & Zoller, 2021). Compared to traditional views, the social network perspective maintains a more open stance on the context of EE, believing that participants' social networks define EE's geographical and spatial boundaries, not administrative divisions (Pittz, White and Zoller, 2021).

A more extreme perspective is that of the Digital Entrepreneurial Ecosystem (DEE), which posits that under the influence of digitalization and the internet, EE participants can be distributed in a broader and more dispersed context (Sussan & Acs, 2017). DEE theory

diminishes the constraints of geographical and spatial factors, allowing participants to interact and collaborate effectively even when physically dispersed (Purbasari, Muttaqin & Sari, 2021a). DEE focuses more on participants' professional skills and collaboration levels rather than spatial convergence and centralization (Elia, Margherita & Passiante, 2020), resembling a "meta-organization" that transcends social organizations and geographical boundaries (Du, et al., 2018). Thus, even participants dispersed in reality might collaborate through digital platforms, engaging in the construction of DEE (Li, et al., 2017).

Another perspective, conflicting with traditional definitions, suggests that the context of EE should be delineated by industry type rather than geographical boundaries (Li, et al., 2023). This challenges the mindset of confining EE to specific geographical areas, arguing that industry-specific trends and needs may be equally or more critical in shaping EE (Duan, Kotey & Sandhu, 2021; Li, et al., 2023). Due to the difficulty of targeted resource allocation and network construction in geographically contextualized EEs (Spigel & Harrison, 2018), the industry-context view supposes that resource allocation and network construction tailored to specific industries might better meet the actual needs of businesses (Mujahid, Mubarik & Naghavi, 2019). Moreover, uniform policies and regulatory measures based on geographical boundaries struggle with adaptability (Fischer, et al., 2022). Similarly, the "one-size-fits-all" supply support for entrepreneurs across different industries in geographic contexts is questioned (De Bernardi, et al., 2020). Therefore, different supply supports and regulatory frameworks might be needed across various industries (Candeias & Sarkar, 2023).

These conflicting viewpoints highlight a significant divergence in defining EE's context: how to effectively delineate and understand it (Thompson, Purdy & Ventresca, 2018). Being within geographic and administrative boundaries does not hinder interactions among participants based on information dissemination, knowledge sharing, and resource cycling (Sussan & Acs, 2017; Du, et al., 2018; Purbasari, Wijaya & Rahayu, 2020; Longva, 2021; Andrade, et al., 2022). However, entrepreneurship in specific industries may not be supported in a "one-size-fits-all" manner (Shwetzer, Maritz & Nguyen, 2019; De Bernardi, et al., 2020). Although EEs in specific industries can be viewed as "subsystems" (O'Kane, et al., 2021), the delineation of these subsystems remains arbitrary (Loots, et al., 2021; Theodoraki, Dana, & Caputo, 2022). Consequently, the context of EE might be open and diverse, and using the term "specific territory" to define EE's context might not enhance consensus.

Participant Roles

It is evident that different perspectives on categorizing participants in EE also lead to divergences or conflicts. The role positioning perspective focuses on local self-actualization, emphasizing "who I am" (Donaldson, 2021; Bouncken & Kraus, 2022). In contrast, the functional perspective tends to focus on participants' contributions, emphasizing the overall effect and "what I do" (Theodoraki, Dana & Caputo, 2022; Zankl & Grimes, 2020). These divergences clearly complicate the task of defining participants in EE: they might cause overlaps and blurriness between role positioning and function

allocation (Cao & Shi, 2021). In some cases, a participant's role might encompass multiple functions, potentially blurring the boundaries between roles and functions (Alaassar, Mention & Aas, 2022). Some participants may have clearly defined roles, but their specific functions and roles might be less apparent or overlap with other participants' functions (Carayannis, Grigoroudis & Wurth, 2022; Roundy & Lyons, 2023). Additionally, the categorization based on degree perspective is also qu estioned—Isenberg (2016) argues that relationships between internal participants in EE are equal, and there is no special or core participant. Some studies support this, suggesting that rules that hinder internal fairness might eventually impede the sustainable development of EE (Carayannis, Grigoroudis & Wurth, 2022; Tabas, Nätti & Komulainen, 2023; Roundy & Fayard, 2020). As neither role positioning, functional perspective, nor degree classification can convincingly persuade the others, defining participants in EE might need a reference framework beyond these three that can foster consensus.

Systematics

Early definitions of Entrepreneurial Ecosystems (EE) focused on framing construction, with limited explanations for systemic issues like evolution, governance, and interaction logic (Cohen, 2006; Isenberg, 2010; Feld, 2013). Since 2015, researchers have extensively explored these systemic aspects of EE, forming diverse viewpoints.

The presence of dynamism is a primary divergence among researchers defining EE. The static perspective highlights element interaction at a single time point (Isenberg, 2010), and despite criticism regarding its dynamism, this viewpoint persists in recent studies (Stam & Van de Ven, 2021; Carayannis, Grigoroudis & Wurth, 2022). The static view provides researchers a "baseline" to compare EE's structure and patterns across different times and spaces (Leendertse, Schrijvers & Stam, 2022), aiding in formulating targeted strategies and laying the groundwork for quantitative data analysis (Stam & Van de Ven, 2021). Conversely, the dynamic perspective excels in capturing EE's evolutionary process (Mack & Meyer, 2016). By analyzing changes over time, it helps reveal the growth and decline of EE, identifying new challenges and opportunities, thus suggesting more comprehensive and sustainable strategies (Thompson, Purdy & Ventresca, 2018; Spigel & Harrison, 2018; Cantner, et al., 2021).

Additionally, researchers differ in their views on interactions within EE, with discrepancies manifesting in attitudes toward participant cooperation and competition, preferences for formal and informal institutions, and understandings of interaction direction (Minà & Dagnino, 2015; Colombo, et al., 2019; Mason & Brown, 2014). A common view is that participant collaboration drives EE's formation and evolution (Thompson, Purdy & Ventresca, 2018), enabling more frequent interactions based on knowledge, information, and resources through social networks, thereby elevating entrepreneurial levels (Spigel & Harrison, 2018; Andrade, et al., 2022). Yet, other studies view EE as a complex market environment with coexisting competition and collaboration (Minà & Dagnino, 2015), arguing that participants balance the two, with this pursuit further stimulating EE's evolution (Stolz, 2015; Theodoraki, Messeghem & Audretsch, 2020). Divergences also

exist regarding formal and informal institutions' preferences. Some definitions of EE emphasize formal structures and mechanisms like contracts, laws, and organizational rules (Pocek, 2020; Bouncken & Kraus, 2022; Roundy & Burke-Smalley, 2022), while others underscore the importance of informal interactions like social networks, culture, and trust (Spigel & Harrison, 2018; Neumeyer, Santos & Morris, 2019; Donaldson, 2021). Based on these preferences, studies also display a clear bias in their understanding of interaction directions within EE. For example, research emphasizing formal institutions might favor a "top-down" approach in interaction (Santos, 2022), suggesting that EE's construction requires a "pull" from above, which could stem from the government (Jung, Eun & Lee, 2017) or leading companies (Mason & Brown, 2014). On the other hand, another viewpoint highlights horizontal and equitable interactions (Spigel & Harrison, 2018; Carayannis, Grigoroudis & Wurth, 2022), defining interactions among participants as equal and reciprocal, undergoing "bottom-up" feedback and adjustment to promote EE's evolution and development (Thompson, Purdy & Ventresca, 2018; Stam & Van de Ven, 2021).

Despite the advantages of each view on systemic issues, conflicts make it challenging to reach a unified opinion. For example, the static perspective tends to focus on the state and structure of EE at a particular time or over a short duration, while the dynamic perspective emphasizes studying the evolutionary process of EE (Stam & Van de Ven, 2021; Spigel & Harrison, 2018). Different research foci make integrating these perspectives a challenge, as static analyses typically rely on data from specific points in time, while dynamic analyses face difficulties in collecting data across various time points with continuity (Cao & Shi, 2021; Shi & Shi, 2022). Furthermore, findings from the static perspective might be challenging to apply to EE frameworks viewed dynamically. Dynamic research considers EE as a multi-stage process (Spigel & Harrison, 2018), and static findings might only represent a "snapshot" of this process, failing to provide a complete picture (Cao & Shi, 2021; Malecki, 2018). Conversely, the "input-output" model of the static perspective might be incompatible with findings from the dynamic view, as outputs may vary with the evolutionary stages (Thompson, Purdy & Ventresca, 2018; Shi & Shi, 2022).

Similarly, contradictions in views on interaction forms within EE are difficult to reconcile. Regarding cooperation and competition, some research emphasizes collaboration as key to EE's success, highlighting the importance of shared resources, knowledge, and networks, while another camp contends that competition drives innovation and efficiency (Stolz, 2015; Thompson, Purdy & Ventresca, 2018). The root of this disagreement lies in opposing views on participant interaction motives: self-interest versus altruism (Cato & Nakamura, 2022). The collaborative view highlights collective action and shared interests, possibly leading to supportive conclusions for Social Entrepreneurship Ecosystems (SEE) (de Bruin, et al., 2023), while the competitive view focuses on individual strengths and market mechanisms, possibly constructing different frameworks (Maysami & Elyasi, 2020). Moreover, differences in preferences for formal and informal institutions and understandings of interaction directions have given different meanings to EE's operational logic and fairness. The formal institution view acknowledges the role of standardization and regulation in defining EE, with contracts, laws, and policies providing stability and clarity (Mason &

Brown, 2014; Bouncken & Kraus, 2022). The informal institution view, however, sees EE as a self-sustaining, self-sufficient, and self-organizing framework, arguing that excessive formal structures may hinder its flexibility and spontaneity (Isenberg, 2016; Thompson, Purdy & Ventresca, 2018; Metzger, 2022). In contrast, researchers' disputes over the direction of interactions within EE might be more acute—the vertical interaction perspective acknowledges the power and resource disparities among different participants, emphasizing the need to define and develop EE based on relationships across different levels and scales (Jung, Eun & Lee, 2017; Stolz, 2020). But the horizontal interaction view criticizes this disparity, suggesting that ensuring fairness in defining and developing EE is a future research direction (Spigel & Harrison, 2018; Cavallo, Ghezzi & Balocco, 2019; Leendertse, Schrijvers & Stam, 2022). Therefore, like the issues of context and participant roles, different understandings of systemic aspects also lead to a lack of consensus on defining EE in existing research.

Social Dynamism

Previous research has highlighted the inherent complexity of Entrepreneurial Ecosystems (EE), reflecting not only a diversity of defining concepts but also deep-seated divergences among researchers on aspects like multi-level spaces, social networks, digitization, and industry-specific factors. Fundamentally, EE's complexity arises from the integration of different schools of thought, such as entrepreneurship, economic geography, regional innovation systems, and industry clusters (Spigel & Harrison, 2018). However, simply stacking these diverse perspectives does not guarantee a consistent operational logic, leading to fuzzy conceptual definitions and criticisms of EE's de-theorization (Brown & Mason, 2017; Sternberg, Bloh & Coduras, 2019). Consequently, despite the growing volume of EE research, its contribution to conceptual theory remains fragmented (Kansheba & Wald, 2020).

So, is there a new perspective that can integrate these seemingly contradictory viewpoints and foster consensus in EE definition research? Social dynamism might offer a competitive response (Mack & Meyer, 2016). Social dynamism pertains to the dynamic process of social relationships and structures changing over time, manifesting not only in interactions between individuals and organizations but also in the entire ecosystem's response and adaptation to external environments (Cantner, et al. 2021). Within the EE framework, dynamism can be understood as a form of vitality and vibrancy, representing a latent state that can be "activated" in specific ways to promote interactions based on knowledge sharing, information exchange, and resource circulation among communities (Auerswald & Dani, 2017; Cavallo, Ghezzi & Balocco, 2019; Gómez, Manya & Fransen, 2023). In the context of EE, social dynamism reveals a unique integrative force: it fosters a more cohesive understanding of EE's system evolution, governance, and interaction aspects (Brown & Mason, 2017; Shwetzer, Maritz & Nguyen. 2019; Cantner, et al. 2021).

Social dynamism emphasizes the evolution and adaptability of EE over time, recognizing and promoting the natural progression of different elements within the system (Audretsch, et al. 2021). Understanding these changes helps break the constraints of context in defining

EE, such as integrating the advantages of traditional geographical spaces with the flexibility of digitalization, potentially shifting EE's focus from physical location to digital connectivity (Sussan & Acs, 2017; Purbasari, Muttaqin & Sari, 2021a). Additionally, it encourages adaptation to changes specific to different participants and industries, making the system more resilient (Li, et al. 2023). With supports from dynamics for specific industries, EE may continue to evolve to better serve the needs of that industry, incorporating innovative practices from other sectors (Mack & Meyer, 2016; Cantner, et al. 2021). These evolutions are based on personalized social networks, encompassing not just physical and geographical connections but also online networks (Purbasari, Muttaqin & Sari, 2021b) and sub-networks (Loots, et al. 2021).

In defining governance within EE, social dynamism emphasizes the integration of participant role positions and functions, prompting governors to identify and utilize these unique roles and stances for more comprehensive and inclusive management strategies (Bouncken & Kraus, 2022). Governors can establish cross-departmental collaboration platforms, facilitating closer cooperation among policymakers, entrepreneurs, and educational institutions, integrating their expertise and resources (Roundy, P. T., & Burke-Smalley, 2022). This integration of participant role positions and functions implies an open and inclusive attitude towards internal elements, enabling governors to designate more flexible strategies to adapt to changes in the EE's internal and external environments (Zankl & Grimes, 2020). For example, in response to emerging technologies and market trends, governors guided by social dynamism can adjust resource allocation and support strategies (Li, et al. 2017). These strategies can be formal or informal; what's important is achieving a balance based on dynamism (Stam & Spigel, 2016; Kantis & Federico, 2020). For instance, formal regulations and policies may provide necessary structure and legitimacy for EE, while informal networks and relationships offer flexible spaces for innovation and collaboration (Bouncken & Kraus, 2022; Donaldson, 2021). Flexible strategies encourage governors to uphold the interests of participants from different cultural backgrounds and industry experiences, ensuring humanitarian fairness (Shen, Guo & Ma, 2023; Carayannis, Grigoroudis & Wurth, 2022).

The wide applicability of social dynamism in defining EE is also evident in participant interactions. Social dynamism encourages participants from different organizational positions to engage in broader and more diverse interactions (Thompson, Purdy & Ventresca, 2018) . Such multi-directional interactions help resolve disputes over participant interaction directions, facilitating more efficient flow of information and resources within the system in vertical, horizontal, or three-dimensional social networks (Neumeyer, Santos & Morris, 2019; Purbasari, Muhyi & Sukoco, 2020). Encouraging different interaction directions helps balance competition and cooperation among participants, meaning that participants can maintain their competitive advantages while seeking collaboration opportunities with others, collectively promoting the development of entrepreneurial knowledge and cultural systems (Donaldson, 2021; Andrade, et al. 2022; Christopoulos, et al. 2023). This fair competition strengthens EE's self-organizing nature, balancing formal and informal institutions, with social dynamism having the potential to resolve institutional

divergences and establish stronger and more flexible social networks (Fernandes & Ferreira, 2022; Jung, Eun & Lee, 2017). Also, equal treatment of different institutions implies that social dynamism encourages equal participation in entrepreneurial activities by all participants in EE (Spigel & Harrison, 2018; Leendertse, Schrijvers & Stam, 2022). This helps address divergences over participation degrees and influence, allowing participants of various sizes and types to play a role in the ecosystem (Zankl & Grimes, 2020; Bouncken & Kraus, 2022). For instance, small businesses and startups can interact on equal terms with large enterprises and seasoned investors through networks and collaborative opportunities (Cantner, et al. 2021).

Media Factors of Social Dynamism

Social dynamism has introduced a temporal concept to traditional “cross-sectional” perspectives, transforming Entrepreneurial Ecosystems (EE) from static frameworks to dynamic ones (Mack & Meyer, 2016). With this view, increasing research is inclined to regard dynamism and vitality as benchmarks for examining different stages of EE (Cantner, et al. 2021; Kantis & Federico, 2020; Audretsch, et al. 2021). Consequently, the discussion on how to “enable” social dynamism is becoming increasingly important (Cavallo, Ghezzi & Balocco, 2019; Donaldson, 2021; Candeias & Sarkar, 2023). To date, researchers have formed two contrasting viewpoints on the mediators that activate social dynamism: external factors (Jun, Eun & Lee, 2017; Spigel & Harrison, 2018; Stam & Van de Ven, 2021) and internal factors (Elnadi & Gheith, 2021; Donaldson, 2021; Cantner, et al. 2021; Alaassar, Mention & Aas, 2022).

Approaches using internal and external factors typically view participants as independent entities, even though they may be actual social organizations or communities (Bouncken & Kraus, 2022). External factors, objectively existing and often beyond the control of any individual or organization, such as resources, institutions, and technology (Spigel & Harrison, 2018; Purbasari, Jun, Eun & Lee, 2017; Breznitz & Zhang, 2019), can drive participants to make choices about their positioning and behavioral preferences, thereby adjusting their transactional, innovative, and cost strategies (Theodoraki, Messeghem & Audretsch, 2020; Christopoulos, et al. 2023). External factors may also receive "top-down" support due to their activity in technological innovation and economic sustainability (Jung, Eun & Lee, 2017; De Bernardi, et al. 2020). Whether it's enhancing "horizontal" interactions among participants or strengthening "vertical" collaboration between governors and other participants, both contribute to building a multi-dimensional and active social network (Mason & Brown, 2014; Cavallo, Ghezzi & Balocco, 2019). Robust social networks foster exchanges of knowledge, information, and resources among communities, ensuring that EE remains “active” at different stages (Minà & Dagnino, 2015; Mack & Meyer, 2016).

Internal factors highlight personal attributes, believing these subjective characteristics are key to stimulating social dynamism (Zankl & Grimes, 2020). Contrary to the perspective of objective factors, the viewpoint of internal factors suggests that participants are not driven by the objective environment but shape it based on their attitudes, motivations, and

missions (Alaassar, Mention & Aas, 2022; Cantner, et al. 2021; de Bruin, et al. 2023). For instance, participants might foster interactions based on public welfare due to their social missions, thus igniting a dynamism with Social Entrepreneurship (SE) attributes (Christopoulos, et al. 2023). Actions of participants based on subjective traits can drive networked interactions of knowledge, information, and resources, while also constructing formal and informal institutions that align with their subjective thought processes (Spigel & Harrison, 2018; Roundy, 2021; Andrade, et al. 2022; Bouncken & Kraus, 2022). Mature social networks and institutions ultimately culminate in the “activation” of connections among participants (Mack & Meyer, 2016).

Concluding Discussion

Measuring Social Dynamism in Entrepreneurial Ecosystems: External or Internal Factors?

Although there are divergences in defining Entrepreneurial Ecosystems (EE), existing research generally acknowledges the role of social dynamism in stimulating the "vitality" of EEs (De Brito & Leitão, 2021; Fernandes & Ferreira, 2022). Not every EE possesses this "vitality," and the incorporation of temporal considerations such as lifecycle into a "cross-sectional" framework makes social dynamism a key to measuring this activation (Minà & Dagnino, 2015; Mack & Meyer, 2016). This characteristic manifests in the integration of divergences in participant interaction, contextualization, and systematization (Cao & Shi, 2021; Cantner, et al. 2021; de Bruin, et al. 2023). Crucially, regardless of the viewpoint, competition and collaboration based on participant interaction, contextualization, and systematization always aim to ensure the efficient flow of knowledge, information, and resources (Spigel & Harrison, 2018; Donaldson, 2021; Andrade, et al. 2022). Thus, social dynamism is seen as a potent response to criticisms of EE's non-theorization (Cao & Shi, 2021).

However, existing research does not agree on how to measure the social dynamism and vitality of EEs, with both external and internal factors having their advantages and disadvantages. External factors like resources, policies, and technology can directly impact the operation and efficiency of ecosystems, leading to macro-level examinations of EE (Stam & Van de Ven, 2021; Theodoraki, Messeghem & Audretsch, 2020). The advantage is a more intuitive display of EE's operational structure, trends, and potential issues, providing a more quantifiable and objective assessment basis for researchers and practitioners. However, its drawback is evident in overlooking the temporal and micro-characteristics of the framework (Audretsch, et al. 2021). External environments often undergo cyclical changes, which can result in unstable assessment outcomes (Cantner, et al. 2021). More importantly, as an artificial "metaphor," EE as a conceptual construct should exist prior to being an objective entity (Thompson, Purdy & Ventresca, 2018; Zankl & Grimes, 2020; Roundy & Burke-Smalley, 2022). Therefore, measuring EE’s social dynamism and vitality based on internal factors may be more convincing.

The key challenge in using internal factors to measure social dynamism is the difficulty in establishing consensus based on the subjective traits of different independent entities, especially when these entities belong to various organizations and communities, with

existing organizational positions making it hard to transcend their motives, attitudes, and values (Roundy & Burke-Smalley, 2022). However, recent research suggests this contradiction may be alleviated. Du, et al. (2018) view EE as a more general "organization," seeing the diverse social organizations and communities in reality as the basic units of a new organization. In this way, researchers can transform the contradictions of participants based on different organizational positions into internal position contradictions of a unified organization, thus building a "consensus" based on the new organization (Zankl & Grimes, 2020; Bouncken & Kraus, 2022). Therefore, we opine that research based on subjective factors is likely to play a key role in exploring EE's dynamism in terms of dynamic changes and prerequisites.

Practice Implication

Using social dynamism as a core criterion in defining Entrepreneurial Ecosystems (EE) has significant practical implications, especially in decision-making and policy formulation, and in enhancing the adaptability and resilience of ecosystems. Firstly, assessing social dynamism provides a critical reference point for decision-makers and policymakers. This enables them to design and implement entrepreneurship-related policies and programs more targetedly, especially in resource allocation, knowledge sharing, and information exchange. Reasonable resource allocation ensures the effective use of necessary funds and facilities, knowledge sharing fosters the spread of innovative ideas, and effective information exchange strengthens collaboration and cooperation within the ecosystem. Secondly, assessing social dynamism helps enhance the ecosystem's adaptability to external changes and resilience to internal shocks. Through continuous learning and adjustment, the ecosystem can more effectively respond to challenges and leverage new opportunities.

Further, measuring social dynamism using subjective factors has important practical significance, especially in emerging economies. Relying solely on objective factors like capital, technology, and infrastructure to build an EE may lead to imbalances in equity and overlook participants' potential feelings (Spigel & Harrison, 2018; Simmons, et al. 2019; Guerrero & Espinoza-Benavides, 2021). In contrast, developed regions and countries emphasize the contribution of co mmon goals, culture, and values to EE (Thompson, Purdy & Ventresca, 2018; Zankl & Grimes, 2020; Donaldson, 2021). This reminds entrepreneurs and policymakers in emerging economies to place greater emphasis on subjective factors rather than favoring inputs like capital, technology, and infrastructure. By emphasizing the motives, attitudes, and values of entrepreneurs and other stakeholders, entrepreneurship and innovation activities can be more effectively stimulated, thereby enhancing the efficiency and output of the entire ecosystem. In this context, measuring subjective factors not only helps to understand and stimulate social dynamism more deeply but also provides a more sustainable and efficient development path for emerging economies.

Looking Ahead

We opine future research on defining EEs should consider the role of social dynamism more and be open, inclusive, and diverse in other aspects. This means that considerations of contextualization should not be limited to geographical and administrative boundaries, nor

should there be divergences in industry, network, or digitization. Similarly, interactions between participants should be more diversified, not limited to cooperation, as there may also be competition within the EE. The way to govern these interactions can be informal, bottom-up institutions, or formal, top-down ones; the key is how to maintain fairness in interaction.

Therefore, we suggest examining Entrepreneurial Ecosystems from the meta-organization perspective proposed by Roundy & Burke-Smalley (2022) and using subjective factors like shared identity (Zankl & Grimes, 2020) to monitor the level of social dynamism development and the prerequisites for stage changes. The key lies in viewing the entrepreneurial ecosystem as a dynamic, interactive network where different organizations and individuals together form an overall entrepreneurial environment. This perspective highlights relationships, cooperation, and synergy between organizations, not just as independent entities and functions. By combining the meta-organization perspective and valuing subjective factors like shared identity, researchers can more comprehensively understand and enhance the efficiency and vitality of entrepreneurial ecosystems. This approach provides new perspectives and strategies for the management and development of entrepreneurial ecosystems, especially in the rapidly changing and highly uncertain environments of emerging economies.

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