What drives the design of startup competitions? A conceptual framework and future directions

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Abstract

Startup competitions serve as essential platforms where innovative solutions to grand challenges can emerge and evolve. Owing to their substantial implications, startup competitions are gaining attention in both academia and practice, but knowledge about them remains limited. This study aims to synthesize previous unconnected streams of literature on startup competitions, by exploring the key components and mechanisms characterizing the functioning of these events endorsed by entrepreneurial support organizations. Due to the conceptual fragmentation around startup competitions, we conducted a systematic literature review of 104 articles. The study proposes five startup competition dimensions: characteristics and specifics, involved actors, aims, evaluation, and nature of startup competitions. Such dimensions are integrated into a conceptual framework that explains what key components and mechanisms characterize the functioning of startup competitions. This study is the first review that synthesizes startup competition literature. It offers significant contributions by presenting a unique definition of startup competitions as integral events in entrepreneurial support organizations, establishing a conceptual framework linking the startup competitions' dimensions, and offering future insights for theoretical development. Overall, the framework offers a tool for future research to analyze the interconnections between startup competition dimensions, guiding competition designers in crafting initiatives.

1. Introduction

In a world that is facing more and more pressing issues ranging from public health crises and sustainability concerns to climate change, inequality, and poverty (Ferraro, Etzion, and Gehman, 2015; George *et al.*, 2016), the role of entrepreneurship is rapidly evolving (Ricciardi, Rossignoli and Zardini, 2021). In this context, the role of startups has become even more

Submitted 13/09/2024 – Accepted 08/11/2024

pronounced, as they can turn these challenges into innovative solutions (Pricopoaia et *al.*, 2024, Taqi and Babu, 2024). Startup competitions designed to facilitate new business creation offer an arena for aspiring entrepreneurs from diverse backgrounds to engage in inspirational exchanges and to find original solutions for issues that traditional organizations have struggled to approach (Dana *et al.*, 2023; Stolz, 2020; Treanor *et al.*, 2021). Not surprisingly, the number of entrepreneurship support organizations and their related initiatives, such as startup competitions, focusing on empowering startups to tackle societal challenges is exponentially growing (European Commission, 2023; Bria *et al.*, 2015). Understanding how startup competitions are crafted is crucial, as their design shapes the quality and impact of the solutions they inspire. Yet, the mechanisms behind the functioning of startup competitions remain unclear.

The overarching and somewhat fragmented term *startup competitions* encompasses various types of competitive events characterized by low entry requirements and a broad array of opportunities, such as pitch contests or business plan competitions (Passaro, Quinto and Thomas, 2017; Stolz, 2023; Watson, McGowan and Cunningham, 2018). In this study, we consider startup competitions as one of the policy instruments through which entrepreneurial support organizations promote entrepreneurship. The latter aim primarily to assist individuals and groups throughout various stages of their entrepreneurial journey (Bergman and McMullen, 2022; Dalle, den Besten and Morfin, 2023; World Economic Forum, 2013). Furthermore, they take diverse forms, such as accelerators, incubators, science and technology parks, and, lately, coworking spaces (Bergman Jr, 2021; Bergman and McMullen, 2022; Dalle, den Besten and Morfin, 2023). In essence, these organizations, as well as universities, employ various strategic approaches, initiatives, and programs, including the organization of startup competitions to tackle serious challenges (Cant, 2018; Stolz, 2023; Tipu, 2019).

We are witnessing a shift from an "I-paradigm" to a "We-paradigm", where collaborative efforts are increasingly recognized as crucial in addressing pressing challenges (Boysen, 2022). This shift does not only change the way organizations tackle pressing issues but also how startups approach competition (Boysen, 2022). Startup competitions actively rely on a new mindset, engaging the entire entrepreneurial ecosystem (Stolz, 2020). Lately, these competitions have begun explicitly asking participants to come up with innovative business ideas as solutions to significant real-world problems (Teasdale, Steiner and Roy, 2020). This approach permits the creation of synergies and shared values between new businesses and societies (Dembek, Singh and Bhakoo, 2016; Porter and Kramer, 2006; 2011), drawing future business owners' attention to engage in the cross-pollination of ideas addressing grand challenges (Menghwar and Daood, 2021). This new trend is notably being passed on to emerging as well as existing business enterprises. Established companies are increasingly prioritizing sustainability more and more; for example, last year, 85% of them raised sustainability finance, up from 75% (Mazzotta & He, 2024). This shift is even more pronounced among startups, where half of the new entrepreneurs now report that they consistently take social implications into account while designing startup strategies (Hill *et al.*, 2023).

Despite the considerable attention startup competitions have received since the 1970s, the conceptual architecture of startup competitions and their actors' relationships remains largely unexplored (Stolz, 2023). Controversial aspects of startup competitions include whether they exist solely for the sake of competition or if they emerged in response to a need expressed by the entrepreneurial ecosystem (Stolz, 2020). The recent studies (Dana *et al.*, 2023; Tipu, 2019; Watson and McGown, 2020) conducted literature reviews on the specific startup competitions

Submitted 13/09/2024 – Accepted 08/11/2024

of business plan competitions. Tipu (2019) delved into relevant scholarly work in both developed and emerging economies and identified areas for further research. Watson and McGown (2020) focused on university-based business plan competitions as a methodology of entrepreneurship education and how the theory of effectuation can lead to a new model. Dana *et al.* (2023) aimed for a comprehensive synthesis of the literature and proposed a framework for business plan competitions that could benefit academics and society, particularly entrepreneurs. To the authors' knowledge, there is no study synthesizing the broader category of startup competitions, providing conceptual clarity on what startup competitions encompass concerning their what, how, and who (Stolz, 2023; Watson, McGowan and Cunningham, 2018).

The research question guiding the investigation is: what are the key components and mechanisms characterizing the functioning of startup competitions endorsed by entrepreneurial support organizations? To answer this question, we conducted a systematic literature review, which is described in the following section (section 2), and discussed the findings (section 3). In the discussion, we propose a definition for startup competitions by investigating the connective mechanisms between involved actors, aims, and structure. This investigation allows us to identify relevant dimensions that shape a framework that explains conceptual relationships among relevant variables, and to outline a research agenda for future opportunities (section 4) addressing the fragmentation of the topic. In addition to such theoretical contribution, the study, by unveiling startup competitions as a relevant policy instrument and their different dimensions, is valuable for applicants dedicating their time and efforts to a support program, entrepreneurial support organizations, and universities seeking to achieve their predefined goals and contribute to a balanced society with fewer challenges and greater opportunities for everyone.

2. Methodology

2.1. Data collection

To provide a thorough, clear, and transparent research synthesis of startup competitions scholarship, we conducted a systematic literature review. This methodology is distinguished from other methodologies by its rigorous and transparent practices (Denyer and Tranfield, 2009; Giardino *et al.*, 2023; Tranfield, Denyer and Smart, 2003). It incorporates both conceptual and empirical works and is aligned with the study's overarching methodological aim of integrating research across a spectrum of startup competitions' multiple forms (Patriotta, 2020; Rauch, 2020).

The study adhered to the Tranfield, Denyer, and Smart (2003) four-step approach and PRISMA protocol for performing systematic literature reviews (Bergman and McMullen, 2022; Dalle, den Besten and Morfin, 2023; Denyer and Tranfield, 2009; Giardino *et al.*, 2023): (1) generating the sample; (2) screening the sample; (3) coding; and (4) conducting the analysis (Figure 1).

Submitted 13/09/2024 – Accepted 08/11/2024

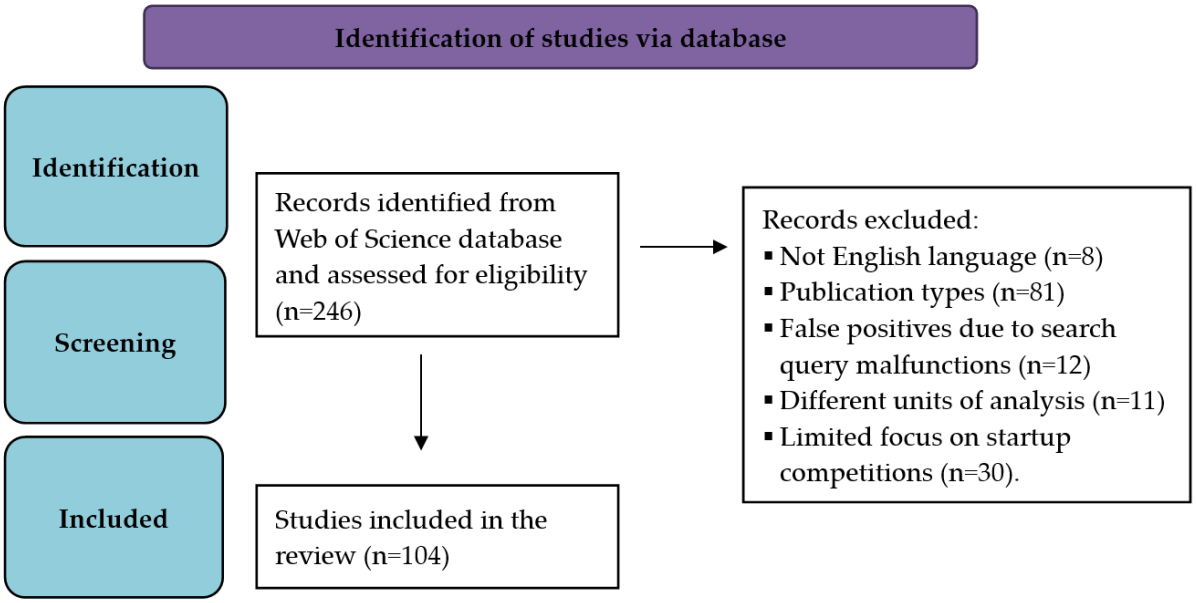

Figure 1. PRISMA diagram

About the database, the authors' choice was Web of Science. The selection of a database is a topic of considerable controversy in the methodological and entrepreneurship literature and each database has unique characteristics that might impact the synthesis process and findings within the context of each database should typically be considered complementary to one another (Loi, Castriotta and Di Guardo, 2016). Based on this premise, and in accordance with Cornelius, Landström and Persson (2006), Meyer *et al.* (2014), Reader and Watkins (2006), and Schildt, Zahra, and Sillanpää (2006), we adopted a targeted rather than comprehensive strategy, with a preference for using the Web of Science database. This decision offered us the chance to use an established approach, ensuring that the methods were rigorous and enabling us to compare the findings with those of earlier research on entrepreneurship. In addition, data were gathered from citation indexes covering all fields of science, social sciences, and arts and humanities to achieve an interdisciplinary and comprehensive viewpoint.

In our search in Web of Science, we included synonyms in the studies' titles, abstracts, and keywords (n=246). In order to assist researchers in their work and make it easier to find relevant search keywords, a consulting group consisting of three independent specialists actively involved in organizing startup competitions, two professors, and a postdoctoral researcher, was engaged. We intentionally decided not to include terms related to "grand challenges" in order to capture a fuller picture of the broader discussion surrounding the phenomenon and to better understand what is happening in practice. We adopted the following research string to select the sample of relevant studies:

TS= *(("startup* competition*") or ("start-up* competition*") or ("startup* event*") or ("business plan competition*") or ("pitch* competition*") or ("ventur* competition*") or ("award* winning competition*") or ("entrepreneur* competition*") or ("startup* contest*") or ("start-up* contest*") or ("business plan contest*") or ("pitch* contest*") or ("ventur* contest*") or ("award* winning contest*") or ("entrepreneur* contest*"))*

Based on the considerations by Giardino *et al.* (2023), Maula, Heimeriks, and Keil (2023), and Tranfield, Denyer, and Smart (2003), we used the specified search criteria (See Table 1) to cover the time span from 1945 to 2023.

Submitted 13/09/2024 – Accepted 08/11/2024

Table 1. Inclusion criteria

N	Criteria		Defining criteria
1	Language and Publication Types	Language	Only publications in English.
2		Publication Types	Only peer-reviewed publications: articles, early access, review articles, and editorial materials.
3	Topic Relevance (Stage review)	False Positives Due to Search Query Malfunctions	Only publications that are not incidentally included due to search query errors (not false positives).
		Different Unit of Analysis	Only events, and competitions between startuppers (not competitions between nations, firms, etc.).
		Limited Focus on Startup Competition	Only publications that contribute with valuable information to the research question "what are the key components and mechanisms characterizing the functioning of startup competitions endorsed by entrepreneurial support organizations?"

In detail, we conducted the sample selection process in accordance with three specified inclusion criteria as language, publication types and topic relevance.

Language and Publication Types: we filtered the 246 initial results according to language and publication types. we excluded eight non-English papers (e.g., Batista Hernandez *et al.*, 2017; López *et al.*, 2019). we selected only articles, early access papers, editorial materials, and reviews, removing 81 publications that did not meet these criteria (e.g., Hongwei et al., 2018; Ohashi *et al.*, 2021). This left us with 157 publications, comprising 136 articles, 15 early access papers, four reviews, and two editorial materials.

Topic Relevance (Stage review): All authors independently screened the sample (stage review) to ensure only documents relevant to the topic were selected. Articles were considered relevant if they primarily focused on startup competition or indirectly provided valuable insights into the "key components and mechanisms characterizing the functioning of startup competitions endorsed by entrepreneurial support organizations". In summary, articles were included if they consistently aligned with the research question. To ensure clarity, we identified the following categories that lead to the removal of articles that fall beyond the purpose of the manuscript (stage review):

First, regarding the false positives due to search query malfunctions, we eliminated 12 articles (e.g., Acs, Braunerhjelm and Karlsson, 2017; Arnold and Zelzner, 2022; Fingleton, 1993) that were incidentally included due to search query errors (e.g., search terms separated by punctuation).

The second criterion is the different units of analysis. Due to the use of multiple search terms queries, some articles related to neighboring research topics but not strictly focused on startup competitions were collected. We excluded 11 publications that focused on units of analysis other than startup such as articles on competition within/between large, established, or small and medium-sized organizations (e.g., Espinosa, Peña-Ramos and Recuero-López, 2021; Takii, 2009; Zarei, 2017) or articles analyzing competition between countries (e.g., Shi *et al.*, 2021).

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The third criterion consists of a limited focus on startup competition. The search query terms occur with very low frequency throughout the manuscript, and are usually found in isolation, typically only in sections such as abstracts or parts related to implications or suggestions. This lack of extensive terms diffusion throughout the manuscript indicates that the attention given to the subject is incidental, residual, and lacks meaningful focus. In sum, 30 papers were excluded because they had a limited focus on startup competitions and did not consistently align with the research question (e.g., Gorkunov and Pikin, 2002; Kriechbaumer and Jacobsen, 2018; Meng, Xu and Huang, 2022; Omri, Hadj Taieb and Elaoud, 2021). The final sample is 104 publications.

2.2. Data analysis

The identified 104 articles were imported into the qualitative data analysis software NVivo12 and went through full-text screening. In accordance with the method of Nordin and Kowalkowski (2010), the articles that used startup competitions in their debates were analyzed and the key concepts and the theories adopted were equally determined. Open coding was used for assigning quotes to the first-order concepts. Consequently, second-order themes that enclose all the faces and aspects of startup competitions, were identified by axial coding (Corbin and Strauss, 2008). To answer the research question, these second-order themes were grouped into the aggregate dimensions. The findings were interpreted to reflect on the relationships between the final aggregate dimensions (Figure 2).

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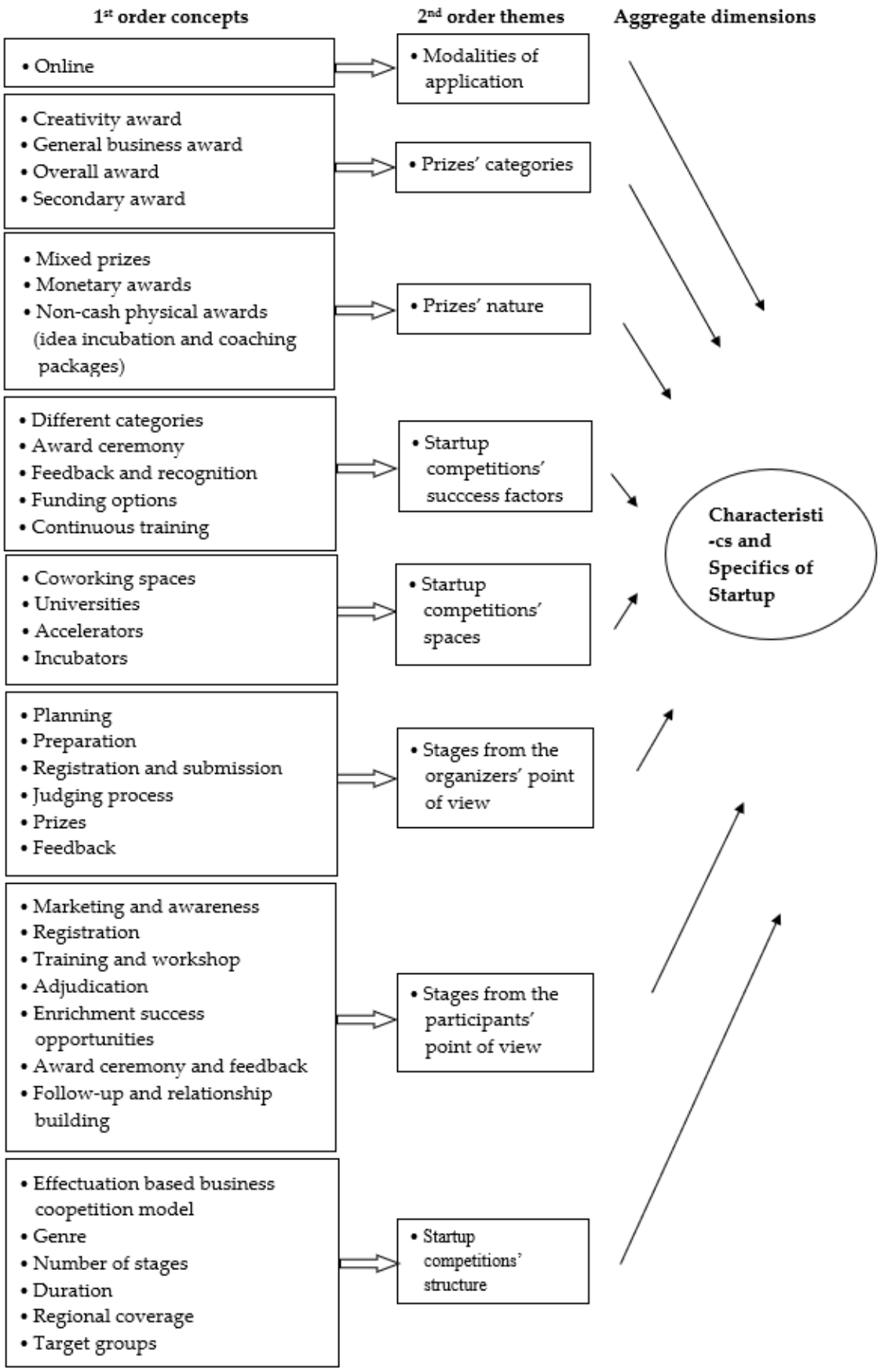

Figure 2A. Data structure: aggregate dimensions

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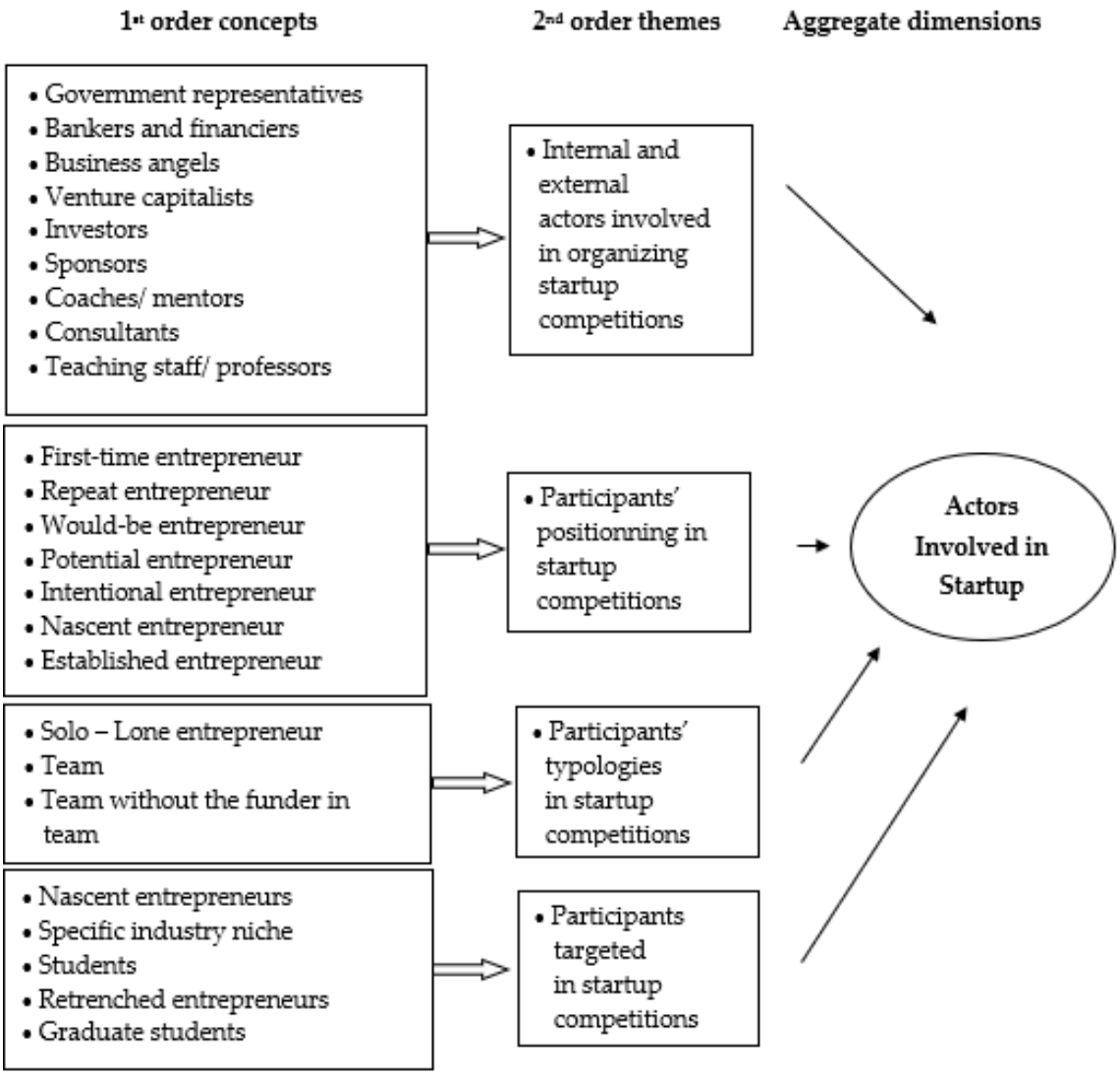

Figure 2B. Data structure: aggregate dimensions

Submitted 13/09/2024 – Accepted 08/11/2024

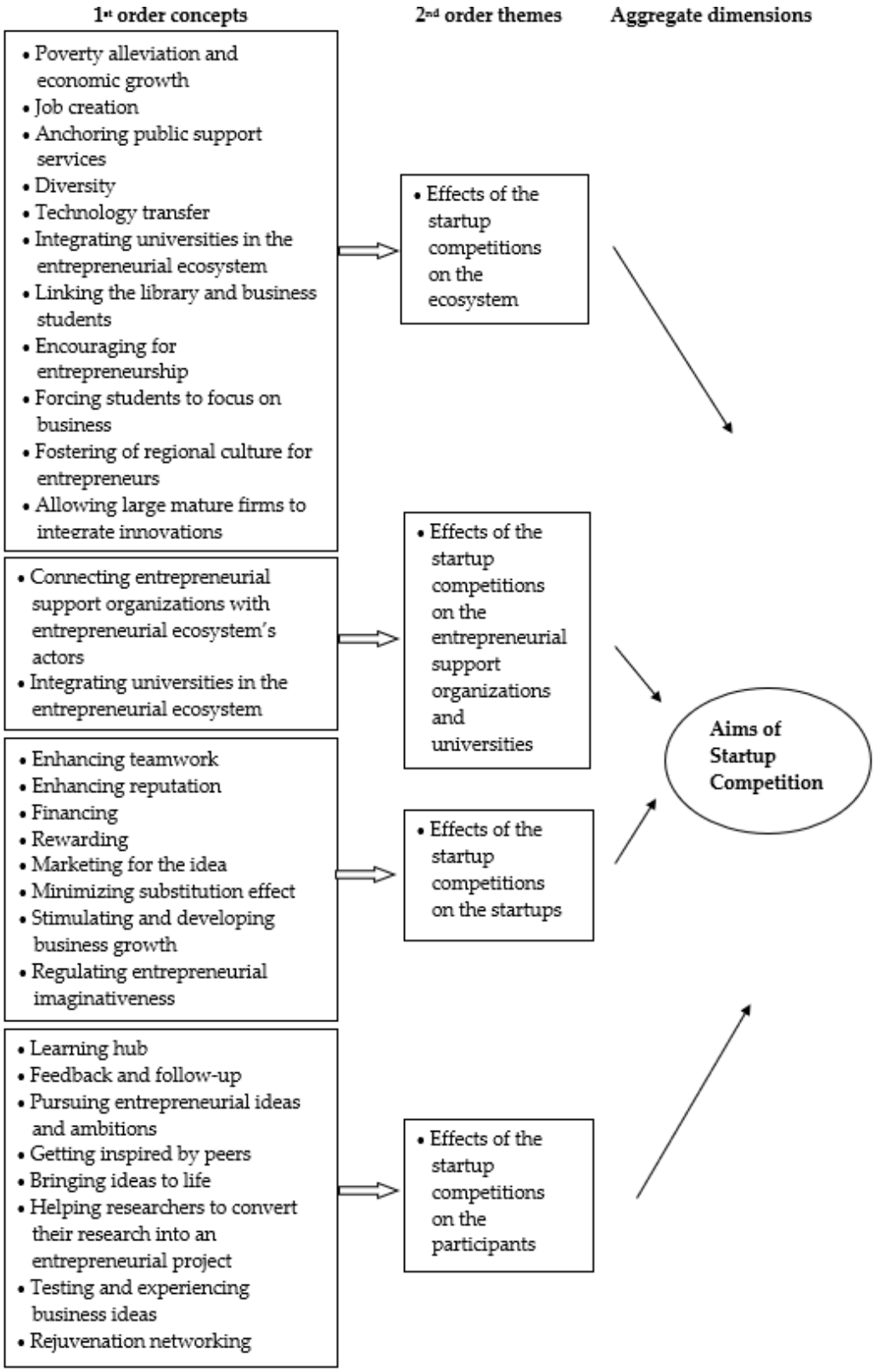

Figure 2C. Data structure: aggregate dimensions

Submitted 13/09/2024 – Accepted 08/11/2024

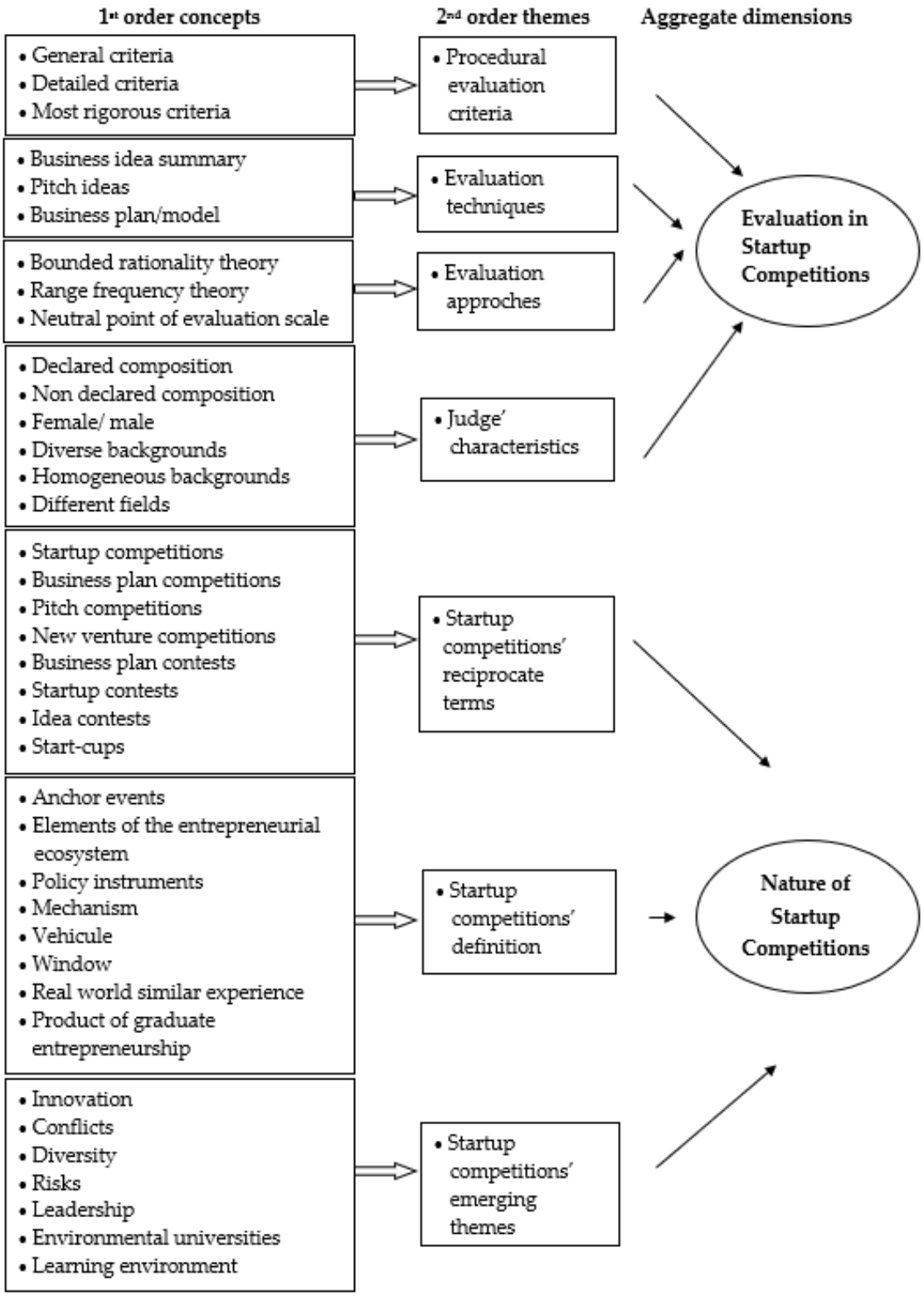

Figure 2D. Data structure: aggregate dimensions

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We adopted an inductive technique, which describes a set of steps for generating summary themes or categories from the raw data to give sense to complex data, which clarifies the data reduction process (Thomas, 2003). Figure 2 outlines how the data was inductively processed, from a specific level of focus to a general one. As shown on the left, the first-order concepts were derived from the sample of articles analyzed by the authors. Second-order are themes arising from primary author interpretations of the research as described below. Some of them were identified in the literature and extended. The ultimate purpose of the resulting framework is to visually display the dimensions that influence the architecture of startup competitions in a manner that makes explicit how they can be orchestrated organizationally. The framework demonstrates how the possible configurations of a startup competition depend on the nature, actors and their interactions, and the models. Using the analysis of Figure 2's first and second-orders, the following section examines each of the five dimensions and their potential interrelationships.

The authors conducted the process of filtering and sample selection. An inter-rate coding was calculated (0.966) using Cohen's (1960) model. The disagreements between them were solved by regular meetings (Tranfield, Denyer and Smart, 2003).

3. Findings

In this section, we explain the five dimensions of startup competitions that emerged from the analysis: "characteristics and specifics of startup competitions", "actors involved in startup competitions", "aims of startup competitions", "evaluation in startup competitions", and "nature of startup competitions." Importantly, we identify five corresponding propositions and develop an integrative conceptual framework, which is presented in Figure 3 at the end of this section.

3.1. Characteristics and specifics of startup competitions

This dimension is about all the characteristics that define the framework of a competition supporting the creation of new businesses (i.e., modalities of application, prizes' categories, prizes' nature, success factors, spaces, stages from organizers' and participants' point of view, startup competitions' structure). Startup competitions have no universal guidelines. This illustrates the diversity of the specificities of startup competitions—that is the application modalities, categories and nature of prizes, success factors, spaces where startup competitions unfold, stages of competitions, and the structure of startup competitions.

An analysis of the extant literature in this field reveals that to subscribe to a startup competition, the participants need to finalize the application procedure online (Stolz, 2023) and are also requested to submit business proposals/applications (Schwartz *et al.*, 2013). Once enrolled in the program, the participants aspire for the competition's prizes and awards (Brentnall, Rodríguez, and Culkin, 2018), which are categorized into creative, general business, overall, or secondary awards (Boysen, 2022; Watson, McGowan and Cunningham, 2018). The organizers of every startup competition decide on the compensation, which can consist of non-cash physical awards such as idea incubation and coaching packages, monetary awards, and mixed prizes (a combination of both monetary and non-monetary awards) (Passaro, Quinto

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and Thomas, 2017; Schwartz *et al.*, 2013). Among the factors that influence the success of a startup competition, the first one is the consideration of the different categories of startup competitions, offering participants equal opportunities to win. Second, the award ceremony acknowledges their work over the duration of the competition (Cant, 2018). Third, a key factor influencing the success of a startup is whether startup competitions provide feedback to all participants, not just the winners (Cant, 2018; Howell, 2021). The number of stages in a competition influences the evaluation process (evaluation in startup competitions' dimension), as a longer period implies considerable opportunities for feedback (Schwartz *et al.*, 2013). Fourth, opening funding options is another vital success factor for a startup competition, which is justified as financing ("aims of startup competitions" dimension) the first push or pull for the participation of a majority of entrepreneurs. Fifth, offering continuous training long the competition is fundamental for the success of all the participants (Cant, 2018). In general, the importance of these factors may vary from one participant to another (Cant, 2018; Howell, 2023).

Startup competitions take place in spaces that offer different services to the participants, such as coworking spaces, office resources, and support services. Some are conducted within universities (Watson, McGowan and Cunningham, 2018), as universities have shown a great interest in the last few decades in encouraging students' passion for developing their entrepreneurial intentions and competencies. Startup competitions began with Student In Free Enterprise (SIFE), now known as ENACTUS (an acronym for "entrepreneurial," "action," and "us") student business competitions and the first larger business plan competitions, held at Babson College and the University of Texas-Austin. Other startup competitions unfold in incubators and accelerators that are part of entrepreneurial support organizations (Stolz, 2020). Such organizations provide subsidized office space and comprehensive office services, which include meeting rooms and cafeterias repurposed as collaborative hubs, alongside educational services delivered in the form of business advice or coaching (Stolz, 2020). Accelerators organize programs that provide individuals the opportunity to pitch their new venture ideas to potential investors, obtain financial support, and receive entrepreneurial learning (Clingingsmith, Drover and Shane, 2023; Stolz, 2020). Incubators also intervene in training startup competition participants and offer access to office spaces; this enables the connection of different actors in the entrepreneurial ecosystem while imposing higher barriers than startup competitions (Schwartz *et al.*, 2013; Stolz, 2020). In addition, accelerators and incubators offer office services and provide participants with coworking spaces in which they can develop their business ideas while networking with other players in the space (Stolz, 2020).

A form of entrepreneurial support organization that has gained popularity lately is coworking spaces. In fact, one of the pillars of startup competitions is the training period when participants receive guidance in training sessions or workshops on how to write a business plan (Cant, 2018). The actual writing, research, and finalization of the business plan are done outside of "training" hours and can be generally done at home, in coffee shops, or in coworking spaces. These shared offices or spaces are considered hosts for creative individuals who are willing to share the same office for work, meetings, and collaborations. It is a convivial environment for entrepreneurs (Stolz, 2020); therefore, in certain cases, startup competitions allow their participants to use these spaces. Thus, startup competitions can certainly take place in multiple locations among those mentioned above.

Another element of the characteristics and specifics of startup competitions concerns the stages that participants and institutions go through until the winner is declared; this can be

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looked at from two perspectives. On one hand, organizers focus on tasks such as planning, organizing preparatory camps, preparing, receiving submissions, judging, awarding prizes, and providing feedback (Cant, 2018; Wen and Chen, 2007). On the other hand, participants perceive their focus on the journey from their personal perspective, involving aspects such as marketing campaigns, registration, training, attending workshops, adjudication when coaches monitor the finalization of business plans, enrichment success opportunities like further consultancy, attending the award ceremony, and obtaining feedback (Cant, 2018). Despite differing viewpoints between participants and organizers, participants always begin by submitting proposals and finish by the selection of winning projects.

Finally, with regard to the structure and according to the conducted analysis, the effectuation-based business coopetition model guides startup competitions to a timely new direction. This model "allows testing the waters" (Watson and McGowan, 2020) and comes along with a list of guidelines: encouraging the participant to "do" rather than plan, maintaining the focus on the program experience, engendering stakeholder buy-in and involvement, supporting the transformation of participants and promoting fluidity among them and post-participation endeavors (Watson and McGowan, 2020). Second, the genre of a startup competition defines the targeted entrepreneurs (e.g., targeting social entrepreneurship and specific technology) (Kwong, Thompson and Cheung, 2012). Third, the general format of stages in a startup competition is approximately the same. However, the number of stages is flexible, as it is correlated with the duration of the startup competition and the monetary awards (Schwartz *et al.*, 2013). Furthermore, the coverage could be international, local, national, and regional (Brentnall, Rodríguez and Culkin, 2018; Cant, 2018; Passaro, Quinto and Thomas, 2017).

The organizers of international competitions differ from those that organize national and regional ones. In fact, startup competitions that are supervised by more than one country will likely involve more than one university. In contrast to international ones, it is possible for national and regional startup competitions to rely on 100% physical activities (Passaro, Quinto and Thomas, 2017). The wider the regional coverage of startup competitions and the greater the number of actors involved, the longer is the selection process and the more complex the direct contact. Startup competitions display different breadth and prominence. Another element is the target groups that constitute specialized startup competitions (Li, 2016) contrary to diversified startup competitions that are dedicated to open segments with no particular focus (Schwartz *et al.*, 2013). The regional coverage intervenes in defining a startup competition's success factors, which vary from one country to another, one region to another, and one sector to another (Cant, 2018). Since the structure of a startup competition is not generic, it explains the diversity in success factors adopted in startup competitions.

In view of these considerations, we suggest the following proposition: the configuration of a startup competition ("characteristics and specifics of startup competitions") is responsible for attracting a specific target ("actors involved in startup competitions") for a specific aim ("aims of startup competitions" dimension).

3.2. Actors involved in startup competitions

This dimension concerns the human composition in startup competitions and combines the characteristics of different actors that participate and intervene in different ways toward the

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realization of these competitions—that is, internal and external actors who are involved in organizing startup competitions and participants.

The first distinction that is made is that the actors can be external or internal. The first category includes funding institutions that could include government representatives, bankers, financiers, business angels, venture capitalists, investors, and sponsors (Schwartz *et al.*, 2013; Stolz, 2020; Tipu, 2019). The second category includes individuals who play a hands-on role in organizing and executing the competitions. This also includes those who provide training to participants. Three major figures intervene here. Being defined as learning environments, startup competitions assist participants in developing the necessary skills and knowledge required for adequate success through coaches (Stolz, 2020). In certain contexts, coaches may continue to offer support and training even after the final event, providing follow-up assistance and high-quality feedback on the business ideas to the winners (Passaro, Quinto and Thomas, 2017; Schwartz *et al.*, 2013). Together with coaches, in such settings, it is crucial to involve other experts like consultants throughout the learning and networking journey of the participants, offering professional advice to address any challenges they may encounter (Passaro, Quinto and Thomas, 2017; Stolz, 2020). Given that these competitions often take place within universities or colleges offering business administration courses or entrepreneurship programs, in which students are encouraged to present their business plans, professors and the teaching staff can play a role in educating participants (Li, 2016). Each of these actors engages with participants during a particular phase of the startup competitions and a few of them continue this engagement throughout the entire journey.

With regard to the receivers of the training—that is, the participants—a certain variety can be identified. The status of the participant varies across teams within startup competitions. The first distinction is that a participant can be a first-time entrepreneur or a repeat entrepreneur when deciding to join a startup competition (Botha and Robertson, 2014). Second, participants undergo a trajectory that is not linear. A participant can prefer self-employment over organizational employment to be a latent entrepreneur or would-be entrepreneur (Li, 2016). If startup competition participants identify a business opportunity in the market, they become potential entrepreneurs. Then, they attain the status of an intentional entrepreneur when their skills and experience push them to make the decision to be self-employed. Next, the nascent entrepreneurs are the ones who dedicate resources to establish the startups. Ideally, the participant of a startup competition is positioned in between the last two types of entrepreneurs. Lastly, established entrepreneurs have the capability to manage medium to long-term businesses (Passaro, Quinto and Thomas, 2017).

In certain startup competitions, a new venture can be launched by a lone entrepreneur, working solo (Der Foo, Kam Wong and Ong, 2005), even though the majority of people chose the option of a team. Working in teams brings better results, particularly when the group is diversified, because of the rich technical and management knowledge. In this context, universities encourage nascent entrepreneurs to adopt collective leadership. Despite their existence, studies have linked startups created in startup competitions, where a founder is not included in the team, to poor evaluation results (Tipu, 2019).

Further, the target participants of startup competitions' are multifarious: nascent entrepreneurs, which are individuals who aim to launch a business (Watson, McGowan and Cunningham, 2018) in a specific industry niche that is specified by the competition (Passaro, Quinto and Thomas, 2017), students that are targeted by competitions with an exclusive aim to coach students and enhance entrepreneurship education (Kwong, Thompson and Cheung,

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2012), and retrenched entrepreneurs (Cant, 2018) because of an economic crisis or a pandemic, etc. While the actors ("actors involved in startup competitions" dimension) who participate in such events are a fundamental characteristic, not defining the aims ("aims of startup competitions" dimension) can tip the scales.

Those competitions are endorsed by entrepreneurial support organizations to favorably influence entrepreneurial competence that, in turn, will affect entrepreneurial intention among participants (Lv *et al.*, 2021). In fact, entrepreneurs who go through this type of support program display higher entrepreneurial intentions (Lv *et al.*, 2021) as they increase their entrepreneurial attitudes, subjective norms, and perceived behavioral control (Lv *et al.*, 2021). Prior studies have proven that the primary catalyst for enhancing the development of entrepreneurial ability is entrepreneurship education (Lv *et al.*, 2021). In this vein, startup competitions foster entrepreneurial awareness and elevate the inclination toward entrepreneurship (Lv *et al.*, 2021).

In light of these considerations, we present the following proposition: the actors involved in startup competitions exhibit variability across different instances. During the competition design process, entrepreneurial support organizations and other organizers carefully deliberate on strategically selecting partners and specific participants they aim to attract.

3.3. Aims of startup competitions

This dimension examines the potential aims related to the phenomenon on macro- (entrepreneurial ecosystem), meso- (entrepreneurial support organizations, universities) and micro-levels (startups and participants). Startup competitions represent a tool that feeds the ecosystem. The *raison d'être* for creating these competitions is chiefly to help reduce poverty, boost economic prosperity, and create jobs (Cant, 2018). These competitions also function as "anchors" by assembling subnetworks of diverse entrepreneurial actors and improving the quality of the entrepreneurial environment (Stolz, 2023), diversity pools (Der Foo, Kam Wong and Ong, 2005; Schwartz *et al.*, 2013) in the sense that those competitions bring together diversified entrepreneurs with different backgrounds, ages, employment status, etc., motivation for business creation (Cant, 2018), and support for the technology transfer process (Parente et al., 2015). In fact, these competitions facilitate the integration of universities into the entrepreneurial ecosystem (Stolz, 2020) and have been used to link the library and business students (Li, 2016). All the mentioned aims lead to an increase in the number of entrepreneurs within the ecosystem but startup competitions also improve the quality of these entrepreneurs and their startups (Schwartz *et al.*, 2013).

Further, the meso level highlights the key role that relationships and interactions with other actors play in a startup's growth and prosperity. Startup competitions impact different actors, such as entrepreneurial support organizations and universities. Historically, new skills and knowledge have been embedded in entrepreneurial education courses organized within schools and universities; more recently, they have been combined with services provided by entrepreneurial support organizations, such as incubators and accelerators (Stolz, 2020). Startup competitions can also be outside of the context of higher education, as these are organized by public authorities or a mix of both public and private organizations (Passaro, Quinto and Thomas, 2017; Schwartz *et al.*, 2013) and their objective is broader as they aim to foster entrepreneurship opportunities. Furthermore, startup competitions can serve as a coordination platform for various actors, such as entrepreneurial support organizations, by

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connecting them with different entrepreneurial ecosystem's actors, or universities, by integrating them into the entrepreneurial ecosystem (Stolz, 2020).

Startup competitions also impact the microenvironment, precisely those of startups. They enhance teamwork (Wen and Chen, 2007) and enhance the reputation of business ideas and startups (Schwartz *et al.*, 2013; Tata and Niedworok, 2020). One of the most common roles of startup competitions is providing monetary support to businesses (Park, Pulcrano and Leleux, 2020) by helping startups to attract co-founders and strategic partnerships (Tata and Niedworok, 2020) and offering other types of rewards such as providing feedback, idea incubation, and cash (Brentnall, Rodríguez and Culkin, 2018; Tipu, 2019). Furthermore, startup competitions help in marketing business ideas (Cant, 2018), stimulate business growth (Tipu, 2019), minimize the risk of the substitution effect by focusing on ex-ante potential startups evaluating returns (Schwartz *et al.*, 2013), and serve as regulators of entrepreneurial imaginativeness within teams (Kier and McMullen, 2020). Thus, startup competitions do not impact only startups, they present "an initial baptism of fire for participants" (Stolz, 2023).

Entrepreneurs are also affected on the micro-level by startup competitions. In fact, participants are branched into two categories: university students and non-students (Kwong, Thompson, and Cheung, 2012; Li, 2016; Stolz, 2020; Wen and Chen, 2007). Both represent "the central point of entrepreneurial ecosystems" (Stolz, 2020). On one hand, university students are attracted to startup competitions to develop new skills and acquire new knowledge regarding the entrepreneurial ecosystem and the market. They perceive startup competitions as a learning hub and a panacea for the development of competencies individually and collectively (Passaro, Quinto and Thomas, 2017), even merely by observing peers (Brentnall, Rodríguez and Culkin, 2018). Startup competitions are also a refuge when participants are in need of free follow-up (Cant, 2018) or inspiration (Brentnall, Rodríguez and Culkin, 2018). These support programs are competitions within entrepreneurial support organizations that aim to develop high-impact entrepreneurs, rather than just mitigate unemployment or cultivate passion for entrepreneurship. This entrepreneurial education works in accordance with diverse approaches (causation, cyclical decision-led, and effectual approach) (Watson, McGowan and Smith, 2015). Further, startup competitions have an educational aspect, as they offer workshops in which participants can network with different actors, attend seminars on numerous disciplines (e.g., marketing, finance, business law, management, and entrepreneurship), and be part of mentoring and tutoring activities in which participants are invited to reflect individually and collectively (Passaro, Quinto and Thomas, 2017).

On the other hand, non-student participants can be entrepreneurs, retrenched entrepreneurs, or would-be entrepreneurs; they can also be academics. In fact, one of the major reasons that pushes such participants to join a startup competition is to bring an idea to the market (Watson, McGowan and Smith, 2015). In particular, academics seek to transform their research into entrepreneurial projects (Parente *et al.*, 2015). Furthermore, participating in startup competitions can be for the sake of testing and experiencing business ideas in the market (Cant, 2018; Kwong, Thompson and Cheung, 2012). Another important facet of startup competitions is rejuvenating networking (Watson, McGowan, and Cunningham, 2018) horizontally or vertically (Stolz, 2023). This is one of the shared aims of all participants, regardless of their career stage. In brief, participants can be driven to participate in startup competitions on account of several aims depending on their needs and careers.

As illustrated by the framework, the "aims of startup competitions' dimension" is a function of "actors involved in startup competitions." Clearly, it is possible to have a combination of

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actors that have complementary aims. For example, the government aims to create new jobs for fresh graduates who are seeking opportunities to obtain skills that enable them to create their own projects. However, this is not always granted. Occasionally, the actors do not share the same objectives; this can lead to an "unshared vision," which is defined as "differences in vision" (Masvaure, 2018). The literature on startup competitions has not yet investigated whether it is better to have a shared or unshared vision for better synergy among the actors involved in startup competitions.

Building upon these considerations, we suggest the following proposition: aims underlying joining or organizing a startup competition are influenced by the actors involved, where a combination of actors may have complementary or divergent aims, occasionally resulting in an "unshared vision."

3.4. Evaluation in startup competitions

Derived from the actors involved in startup competitions and the aims of startup competitions, this dimension brings together all the factors and players' characteristics involved in judging the outputs of startups and declaring competition winners. This dimension scrutinizes the procedural evaluation criteria, techniques, approaches, and the judges' characteristics. Judges play an important role in startup competitions, as they are in charge of judging the business ideas and selecting the winners based on a list of evaluation criteria that can be developed by venture capitalists, accountants, consultants, business executives, researchers at universities and the faculty members of universities (Cant, 2018). These criteria are not equally declared in all startup competitions. Some content declares only the general criteria, others declare complete detailed criteria, and others communicate only the most rigorous criteria (Passaro, Quinto and Thomas, 2017). These criteria are applied starting from the business idea summary (Watson, McGowan and Smith, 2015) to the serial pitch and presentation of the idea during the training period and the award ceremony (Tipu, 2019) to the formal written business plan (Kwong, Thompson and Cheung, 2012). The outputs of the startup competitions that are to be judged are crucial to define the startup competitions ("nature" as well as "characteristics and specifics of startup competitions" dimensions), as they present the factors necessary to determine the appropriate duration of the competition and, consequently, the required number of steps. Nevertheless, the possibility that participants could enhance their scores following these criteria, if they present in a specific order, has also intrigued certain scholars.

Evaluation techniques include the theories that underline presentation techniques and factors that are taken into consideration when evaluating (team size and score). The bounded rationality theory is linked with satisfactory behavior, and it encourages presenting first. in contrast, the range frequency theory is presented later because it keeps high expectations until the ending (Clingingsmith, Conley and Shane, 2021), contrary to those who argue that judges begin with a neutral point of evaluation scale (Clingingsmith *et al.*, 2021). Furthermore, the team size influences the evaluation, as it has an effect on diversity that, in turn, is manifested in task diversity that brings higher evaluations in contrast to non-task diversity (Der Foo, Kam Wong and Ong, 2005). Judges score the startup competitions based on the team characteristics, financials, business model, market attractiveness, technology/product, and presentation (Howell, 2021). In such competitions, the evaluation criteria and techniques are not always made public.

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Further, those who comprise the evaluating team for startup competitions are not always declared (Passaro, Quinto and Thomas, 2017). Judges come from both genders, different backgrounds and fields: bankers, financiers, consultants, business angels, experienced entrepreneurs, mentors, university staff, and venture capitalists (Stolz, 2020). Their differences enrich the feedback received by participants (Schwartz *et al.*, 2013). Thus, there is no common code to be respected when selecting a startup competition's evaluation committee.

Considering these factors, we elaborate on the following proposition: the success of a startup competition increases proportionally to the diversity among judges and the careful selection of the evaluation criteria when designing the program.

3.5. Nature of startup competitions

This dimension involves three second-order levels: the reciprocal terms to address startup competitions, the most commonly used definitions of startup competitions, and related literature. It seeks to clarify the nature of startup competitions as it demonstrates several semantic fragmentations. "Business plan competitions" and "pitch competitions" are examples of reciprocal terms coined in startup competitions. It is mainly about competitions, awards, contests, prizes, and cups (Li, 2016; Passaro, Quinto and Thomas, 2017; Tata and Niedworok, 2020). However, this is not the only observed fragmentation of startup competitions. Others include the definitions of startup competitions and related literature, which are discussed in the following paragraphs.

The definitions of startup competitions and the observed fragmentation, consist of the representations that scholars have adopted to label startup competitions. On the one hand, they can be considered "anchor events" (Stolz, 2020); on the other hand, they are described as both a direct and indirect "element of the entrepreneurial ecosystem" (Stolz, 2020), a "policy instrument" to help nascent entrepreneurs (Schwartz *et al.*, 2013), a causational "mechanism" for extracurricular entrepreneurship education, a "vehicle" of opportunities (Cant, 2018), a "window" (Parente *et al.*, 2015) to observe the real world and communicate with the actors of the ecosystem (actors involved in the startup competitions), a similar experience to that in the real world that prepares students to switch to being active actors in the entrepreneurial ecosystem (Watson, McGowan and Smith, 2015) or a "product of graduate entrepreneurship" (Watson, McGowan and Cunningham, 2018).

Through a cross-comparison across different countries, we observe that startup competitions have a few differences and similarities. On one hand, for example, due to the lack of financial resources (Tipu, 2019), increased rate of unemployment, complicated bureaucratic business settings (Tipu, 2019), outdated technology (Tipu, 2019), and educational deficiency (Tipu, 2019), startup competitions in emerging and developing countries play an important challenging role in supporting entrepreneurs (Tipu, 2019). On the other hand, developed countries still require startup competitions because of their characteristic of being "anchor events." For example, Germany is characterized by a mature entrepreneurial ecosystem, and experts explain their need for this type of support program to "force" participants to concentrate on entrepreneurship (Stolz, 2023). In Germany, geographical location plays a key role in individuals' decisions regarding whether to pursue an entrepreneurial career (Schwartz *et al.*, 2013). The majority of German startup competitions are organized by public entities and sponsored by a mix of public, semi-public, and private actors (Schwartz *et al.*, 2013, Stolz, 2023).

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Scholars have also examined Central America and found that participants without a business will likely launch their project and those already running one will expand it (Stolz, 2020).

Along with the literature, several themes are related to startup competitions (e.g., innovation, conflicts, diversity, and risks) (Brentnall, Rodríguez and Culkin, 2018; Der Foo, Kam Wong and Ong, 2005; Passaro, Quinto and Thomas, 2017; Wen and Chen, 2007).

Based on these considerations, we elaborate on the following proposition: startup competitions, with their elaborated configurations, assemble diverse actors who engage in varied interactions to obtain their personalized aims, which impact nascent entrepreneurs, startups, and entrepreneurial ecosystems.

3.6. Conceptual framework

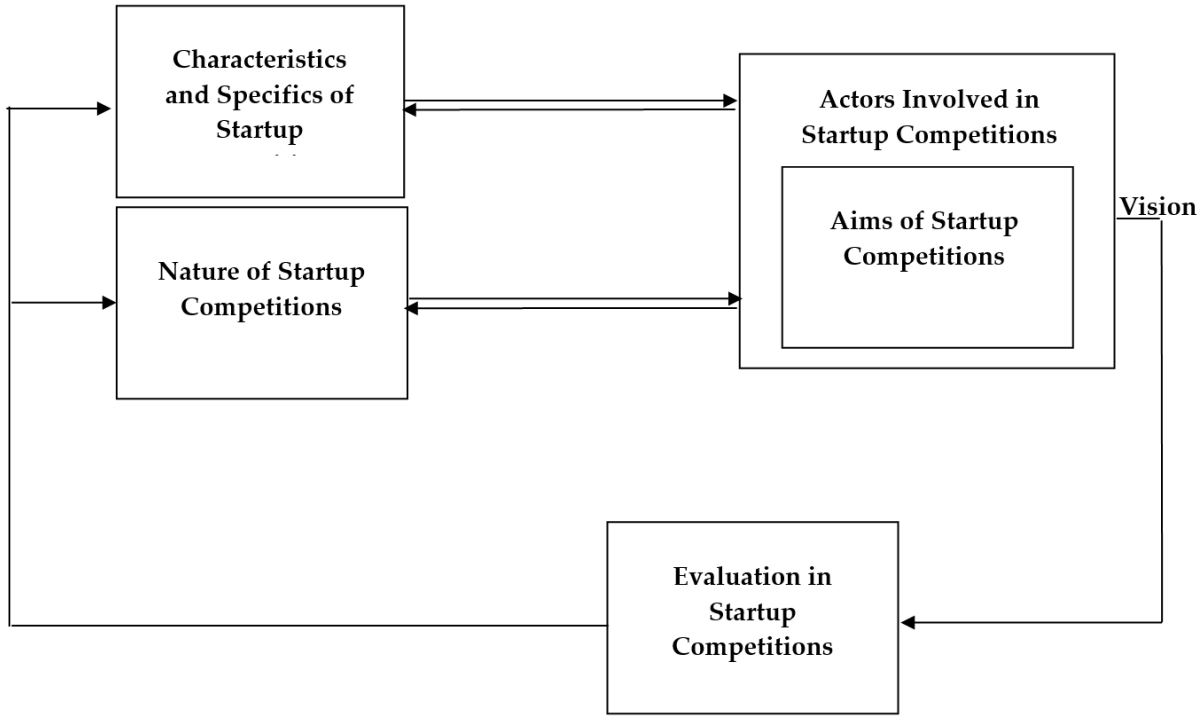

Figure 3. A conceptual framework of startup competitions

Drawing on a typological theorizing style (Cornelissen, 2017), this paper investigates and deconstructs the hazy nature of startup competitions (Cornelissen, Höllerer and Seidl, 2021). Based on the findings, we developed an integrative conceptual framework (Figure 3) that visually represents the dimensions that influence the architecture of startup competitions, thereby elucidating their organizational orchestration. The initiation and management of startup competitions encapsulate a dynamic, iterative process, with each opportunity design giving rise to subsequent designs for future competitions. On the left side of the framework, the "nature of startup competitions" dimension is addressed through reciprocal terms, commonly used definitions, and relevant literature and, thus, offers a comprehensive illustration of their nature. The involved actors have distinct aims ("aims of startup competitions") in these competitions. This typological framework illustrates how the "actors involved in startup competitions" dimension is interconnected with subsequent dimensions, as they differ depending on actors' viewpoints, and actors with diverse aims search for

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specificities tailored to their needs. In essence, their aims can differ from one to another. For example, while for fresh graduates, it is usually more important to obtain financing and coaching to refine their entrepreneurial skills, it is likely more useful for undergraduates to test and experience in order to ascertain whether entrepreneurship and self-employment suit them and that potential entrepreneurs with financial needs may prefer competitions that offer tangible rewards (e.g., cash). The process culminates with the evaluative dimension, primarily focused on evaluation criteria, approaches, and actors (judges); this involves the assessment of and reflection on the competition and startup ideas. This dimension enables actors to reassess their goals and needs, thereby setting the stage for future targets.

3.7. Toward societal challenges dimension

Although we have not included a specific dimension on grand challenges in our conceptual framework, our review reveals a clear shift in focus toward the pressing issues. Our review aimed to determine the general mechanisms driving startup competitions worldwide linking the unconnected streams in the ongoing academic debate. Nevertheless, it is essential to acknowledge that this emerging trend toward grand challenges is meaningful for society solutions and is drawing the attention of many startup competition designers. As a result, these competitions are increasingly incorporating societal challenges as criteria, often explicitly asking participants to find solutions for societal issues or providing them with a specific challenge to address.

Scholars have touched on the increase in the proliferation of innovation courses as a response to the COVID-19 pandemic (Chen and Roldan, 2021). In fact, the authors reflected on switching to online courses because of the pandemic context and the focus on social innovation to address challenges that the pandemic has sparked. In essence, they highlighted the importance of evaluating and transforming challenges into opportunities (Chen and Roldan, 2021). If one reflects upon it, one will notice that it is a loop; challenges disembark, startup competitions call for original ideas to solve them, and entrepreneurs seize the opportunity and launch their businesses. It is this way – by incentivizing solutions —entrepreneurial initiatives help address grand challenges. It is all about the visibility they offer to new ventures working on social entrepreneurship, sustainability, eco-friendly products, etc. Overall, startup competitions are in continuous interaction with the entrepreneurial ecosystem by prioritizing sustainability and inclusion, sometimes even imposing judging criteria of scalable diversified businesses to address a broader range of issues. Thus, those competitions keep pace with current trends in the sense that they impose the use of new technologies while exercising entrepreneurship in the universally agreed norms.

Some scholars examined case studies where participants were provided with a list of predefined societal challenges determined by the industry and academic experts as well as the sponsors of the initiative, and they asked them to come up with new research that can solve one societal or environmental challenge (Treanor *et al.*, 2021). In brief, the participants in this program need to think outside of the box and bring an original business idea to stop one of the selected issues and create one hypothetical venture that will be supported by weekly mentoring. Those challenges are later matched to industrial innovation entities that are into addressing grand problems and hosted at facilitators, like Stevenage Bioscience Catalyst and Unilever's Colworth Innovation Park in the UK (Treanor *et al.*, 2021). In an attempt to support other universities to start similar projects at their home institutions, researchers investigated

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the conditions a sustainable project needs to integrate to be considered within institutions of higher education (Daub *et al.*, 2020).

Furthermore, the proliferation of social innovation courses in universities is solid proof of the success of this kind of initiative in promoting a more inclusive and sustainable entrepreneurial education. Competitions with a social focus displayed a need and, thus, fit with the norms and ideal practices of entrepreneurship (Boysen, 2022). These competitions showed evidence that they act as a bridge between the academic and the industrial world as they involve entrepreneurial education and link the university library and business students. For instance, Wilfrid Laurier University considered startup competitions in the business school curriculum. Moreover, it helped students draft their business plans and prepared them to face the entrepreneurial world by offering them the needed skills such as refining the pitch and enhancing communication competencies. It also provides an adequate environment to test business ideas which is pertinent for all sectors, particularly for businesses with a focus on social and environmental enprints (Heimann, 2023; Li, 2016; Stolz, 2020; Tipu, 2019).

Startup competitions can also address grand challenges by raising public awareness of social, environmental, and economic issues. This is achieved through networking and collaboration platforms that involve industry leaders, field experts, and policymakers, who help profile market needs and detect original solutions. These ideas can then be accelerated by presenting them to venture capitalists and potential investors (Passaro, Quinto and Thomas, 2017; Treanor *et al.*, 2021). Hult Prize and MassChallenge are illustrative examples of competitions that yearly select a global massive challenge and issue a call worldwide to trigger potential entrepreneurs to start their businesses and make a change. Moreover, startuppers that win competitions addressing global challenges are an inspiration to other teams that aim to launch other businesses to follow the same trend of impact driven entrepreneurship and surpass thinking only about generating revenues. Peer interactions and cooperation have been highlighted in many papers, especially by Watson and McGowan (2020), who invited to consider participants as co-creators, not just rivals, which probably will boost sharing different solutions to challenges from different perspectives and backgrounds.

Entrepreneurship education often emphasizes a competitive mindset aligned with neoliberalism (Boysen, 2022). However, the "fake it till you make it" mentality cannot be sustained in those competitions. Potential entrepreneurs are closely supervised by the organization team throughout the program and have access to expert mentoring, which helps them finalize crucial milestones such as conducting market research and preparing the business plan. In this sense, startups have an interest in seizing this opportunity and investing their efforts and time to fully realize their businesses. Besides, entrepreneurs are motivated to be real in order to maximize their winning chances as these competitions are concluded by a final event where the winner(s) will crown the hard work. Moreover, these modern initiatives do not adhere to the "winner-takes-all" principle, instead offering multiple awards, coaching, or incubation opportunities to various startups (Passaro, Quinto and Thomas, 2017; Schwartz *et al.*, 2013). They divide the award into slices to ensure the survival and transformation of potential ideas into viable businesses. Some competitions even expand across multiple levels (i.e., national and supra-national levels) (Cant, 2018). These strategies are evidence that competition designers aim to promote a supportive mindset and incentivize participants to be authentic, as success is not limited to a single winner.

In all, this review shows that there is no fit-all model for design startup competitions. However, all of them transform challenges to at least one opportunity that will be financed by

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the award granted at the final ceremony of the competition and chances to be adopted by potential investors. Having that been said, the literature still needs to fill many gaps in future studies to help raise the competition's design awareness.

4. Future research

It has been noted that, despite the widespread presence of entrepreneurial support organizations and startup competitions, the research in this area remains heterogeneous and at a preliminary stage. Future research must be conducted to use this framework, and we encourage scholars to empirically validate and refine the proposed framework in diverse settings. We suggest three main avenues for future research. First, we propose examining whether actors in a startup competition with shared or unshared visions yield better results and how the final outcomes and structure of startup competitions are determined in the latter case. In this case, the following question might arise: if each one of the actors participates in these competitions with specific aims ("aims of startup competitions"), and vision—which is not shared with the others—who decides on the achieved aims and structure of the final startup competition? In case of an unshared vision, the leader of the startup competition will probably decide on behalf of the team. One could argue that investors will impose their viewpoint because they are in control of money. Thus, the other actors ("actors involved in the startup competitions" dimension) will align with their aims to be sponsored and launch the call. In the case of competitions that have actors with shared vision, ranging from investors to participants, the synergy will be better as the startuppers will be motivated to work hard for the same aims as the organizers. This emphasizes the importance of a successful casting to select the appropriate participants who will achieve optimal results by the end of the startup competition. Further research on startup competitions should empirically exploit whether it is better to have actors with a (an) (un)shared vision within the same competition.

The second avenue for future research is related to investigating pre- and post-differences related to participants and the aims of winners and losers in startup competitions. With regard to the first aspect, the investigation could focus on differences in terms of their intentions, career preferences, and the factors influencing these changes, such as business opportunity recognition. In this connection, Watson, McGowan, and Cunningham (2018) started the debate by investigating the change in the participants' perceptions of the business plan during and after participation in a program. With regard to the second aspect, further investigation could explore factors influencing the continuation of business ideas post-competition and the role of mentors in supporting participants. Scholars have called for eventual studies on winners and losers across startup competitions (Stolz, 2020). It is interesting to investigate whether it is more probable to continue operating after winning a startup competition and starting own business. It is also appealing to investigate the factors that impede the evolution of business ideas after startup competitions. Furthermore, the role of mentors after startup competitions must be explored. An intriguing research direction could explore the willingness of mentors to support participants after the competition (Tipu, 2019). It is useful to ask the following question: Do these competitions satisfy the expectations of the participants and organizers? (Schwartz *et al.*, 2013). Do they, in certain cases (i.e., losers), think of participating in other startup competitions? In case they do, do they change the targeted aims ("aims of startup competitions" dimension) or continue to pursue the same ones? This is one of the limitations

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of the study because of the research methodology. Thus, we call for future research to explore this aspect by conducting a longitudinal study and testing the framework.

The third direction for future research is understanding the obstacles that hinder actors in startup competitions from achieving their goals and establishing performance indicators for startup competitions to identify successful profiles. Occasionally, the reasons that push the participants of startup competitions not to continue in entrepreneurship would shed light on certain aspects of the literature on startup competitions. It is important to recognize the performance indicators of startup competitions (how many new startups are created, market share of the startups, startups' survival rate, etc.) to develop a framework that helps in identifying the profile of the most successful startup competitions (Passaro, Quinto and Thomas, 2017). Moreover, a few questions have been raised concerning coopetition among startup competitions (Watson and McGowan, 2020). It is also interesting to perform a few empirical studies to deepen the knowledge on whether startup competitions stimulate only the participants' intentions to compete or also to cooperate.

Further research opportunities also include exploring the impact of team diversity on startups, examining the effects of upgrading technology through startup competitions, and understanding the influence of startup competitions on participants' entrepreneurial learning processes. As startup competitions have a highly interactive environment, scholars have examined the impact of team diversity on the external evaluation of business ideas (Der Foo, Kam Wong and Ong, 2005). The organizers of startup competitions have recognized diversity as an important factor; thus, they have begun including this in the "aims of startup competitions" (to have mixed teams from different countries for the competition, to have partnerships among startup teams from different countries within the competition, etc.). Future research may consider how diversity influences the creation of startups and startup competitions that are organized on international levels. With regard to technology, it has been mentioned in the literature that startup competitions improve technology transfer. Examining the effects of upgrading technology on startup competitions would be of added value to the literature. In terms of the participants' learning process, empirical studies that enlighten the modalities in which technology is improved owing to those competitions and examine if technological advancements and startup competitions have a mandatory interdependent relationship in both ways would present important implications. There are also opportunities to investigate the impact of startup competitions on participants' entrepreneurial learning processes and the creation of new startups (Passaro, Quinto and Thomas, 2017).

Last but not least, scholars have determined that the role of entrepreneurship in solving grand challenges is continuously progressing and has the potential for further development (Ricciardi, Rossignoli and Zardini, 2021). This review concluded that policymakers and startup competition organizers are considering these entrepreneurial initiatives as a key that can address unemployment, health problems, etc. They constrain startuppers to bring business ideas that help society but also bring the attention of investors to provide funding that will make them win besides saving people's lives. The academic discussion is getting more and more interesting with the declaration of the United Nations' Sustainable Development Goals (SDGs) as scholars are calling for radical transformations in the entrepreneurship field, adopting new ways of doing things. However, we need to know more in light of the global impact of those initiatives toward challenges (Huster *et al.*, 2017). We are in this together, and only if we spend efforts collectively and adequately that we can minimize or stop those challenges that are impacting our lives, if not the future generations. For instance, it would be

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important to study the influence of the ESG (environmental, social, and governance) goals on the design of these competitions, how organizers incentive future entrepreneurs to create businesses with a focus that addresses those challenges and not solely on generating profit, and how this is affecting also other existing enterprises to modify their business strategies and be more sustainable and offer a social value. Previously, scholars have been interested in studying social marketing as a subtopic of social entrepreneurship and innovation (Holweg and Lienbacher, 2011), as well as its relationship with shareholder value (Maltz and Pierson, 2022). It would be similarly important to analyze whether startup competition designers and investors behind those programs are truly into addressing challenges or they have other hidden purposes. Furthermore, we still call for attention to studying these events using robust methodologies to measure the long-term influence of startup competitions on addressing grand challenges. While many competitions claim to support social innovations and sustainability, empirical studies on outcomes—such as job opportunities, environmental advancements, or social upgrades—are scarce.

5. Conclusions and implications

5.1. Conclusions

Given the importance of addressing grand challenges by transforming them into opportunities, in this study, we asked which key components and mechanisms characterize the functioning of startup competitions endorsed by entrepreneurial support organizations. To address this question, we undertook a systematic review of scholarly literature on startup competitions, one of the most prominent initiatives supported by entrepreneurial support organizations. As part of this process, we proposed a conceptual framework that characterizes startup competitions as interactive environments that serve as focal points where various actors and entrepreneurial ecosystems come together to pursue specific aims. *Startup competitions* can be defined as integral events organized within entrepreneurial support organizations and universities, that are shaped and orchestrated according to the interplay of their characteristics and specifics, involved actors, aims, evaluation, and nature of startup competition dimensions. Thus, it is this multidimensional nature of startup competitions that dictates the involvement of suitable actors who collaborate on information sharing and make concerted efforts to achieve predefined (un)shared aims and tackle grand challenges.

Overall, the framework offers a tool for future research to analyze the relationships among the dimensions of startup competitions, thereby assisting competition designers, entrepreneurial support organizations, practitioners, and policymakers in decision-making processes. This review elucidates these competitions as an increasingly growing phenomenon in order to help the entrepreneurial ecosystem actors in harnessing their collaborative power, designing adequate, effective initiatives to tackle societal problems, and thus aligning business with societies' needs. While the study is subject to limitations, such as potential omissions due to the selected methodology, it lays a foundation for comprehensive exploration and understanding of startup competitions in the entrepreneurial landscape. The limitations are related to the sample, which may not encompass certain records that were absent from the online repository due to missing or varied keywords. Despite the authors' diligent individual selection, comparison, and discussion of results with the team of independent researchers, the potential for such omissions persists and necessitates careful attention. Another limitation is

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that the sample involves only English peer-reviewed publications, which implies that a few potential articles that explore startup competitions may be lost when filtering for publication types and language. Future research could further extend this work by examining grey literature and broadening the scope beyond English peer-reviewed publications.

5.2. Implications

Considering the amplified interest in startup competitions (Dana *et al.*, 2023; Passaro, Quinto and Thomas, 2017), the conclusions derived from the systematic review bear notable implications for practitioners, entrepreneurs, and policymakers who are part of the business ecosystem. An in-depth understanding of the emergence and dynamics of startup competitions can substantially impact their strategic initiatives and decision-making protocols.

Practitioners across various domains—including venture capitalists, startup mentors, and industry experts—can leverage the insights from this systematic literature review to refine their investment strategies and mentorship approaches. Understanding the differences between startup competitions helps coaches and organizers tailor a suitable design for startup competitions, taking into consideration all the dimensions of such competitions—ranging from actors, success factors, spaces in which they take place, and evaluation criteria to specific outcomes. This review responds to the need to understand the instrumental policies that support the creation of startups and balance innovation with broader societal benefits, thereby fostering an ecosystem that not only encourages the emergence of new ventures but also ensures positive economic, social, and entrepreneurial outcomes. Competition designers, entrepreneurial support organizations and universities could use this study to guide nascent and current entrepreneurs to effectively select programs and competitions to enroll in and organizers to determine which actors to involve when designing startup competitions. In other words, applicants need to decide whether to invest their time and efforts in specific startup competitions with a distinct design that matches their needs and values (economic, social, environmental, etc.). It is equally advantageous for organizers aiming to attain their pre-set aims with minimized losses of resources (money, effort, and time).

Further, the framework serves as a beacon, offering guidance and support to startups as they navigate market choices and seek to efficiently seize opportunities. It reveals the relationship among the different dimensions that define startup competitions. Furthermore, the implications drawn from this systematic literature review extend beyond individual practitioners and policymakers, thereby enveloping the broader entrepreneurial landscape. By leveraging these insights, stakeholders can collaboratively endeavor to forge a more vibrant, inclusive, and sustainable environment that is conducive to the growth and innovation of startups.

Theoretically, this study contributes significantly to the understanding of startup competitions endorsed by entrepreneurial support organizations by (1) presenting a unique definition of startup competitions as integral events in entrepreneurial support organizations; (2) establishing a comprehensive conceptual framework that links the specifics and characteristics of, involved actors in, targeted aims of, evaluation of, and the nature of startup competitions; and (3) offering future insights for theoretical development.

Submitted 13/09/2024 – Accepted 08/11/2024

Keywords

Startup competitions, entrepreneurial support organizations, startup events, startup contests, systematic literature review, grand challenges

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