Framing startups survival research at the crossroad of entrepreneurship, strategy and business model: a literature review and a research agenda

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ABSTRACT

Startup survival depends on entrepreneurs' ability to create value by identifying and exploiting new opportunities while developing a viable business model. This article contributes to a body of fragmented research spanning three key domains—entrepreneurship, strategy, and business models—focusing on how startups leverage strategy and business models to be competitive. To this end, we conduct a systematic literature review on the identification and exploitation of opportunities by startups, as well as on the definition of their strategy and business model to survive in competitive markets. Our study provides an overview of the literature on the subject, identifying the main strands and their main findings, and promising avenues for future research to enhance both academic understanding and entrepreneurial practice.

1. Introduction

New ventures, or startups, are often defined as temporary organizations in search of a repeatable and scalable business model (Blank, 2007). These entities usually navigate an ambiguous, uncertain, and dynamic landscape since they are engaged in the challenging task of developing innovative products or services (Ries, 2011; Innocenti and Zampi, 2019; Rippa and Secundo, 2019). With a limited amount of economic, human and physical resources, startups must face conditions of very high uncertainty that embrace the market, the product and the competition, making it hard for founders to succeed in such a hostile arena (Bortolini et al., 2018). To further exacerbate this situation, startup entrepreneurs often lack the methods, processes and tools needed to effectively identify suitable markets, validate their ideas during the preliminary stage (Bortolini et al., 2018) and refine their prototypes through iterative customers' feedback.

For all these reasons, establishing a new company is a difficult, complex and highly risky process, which is reflected in the high failure rates of startups (Santisteban et al., 2021). In this context, startup entrepreneurs often come across the following questions: How can I envision my company's future? How should I design my company's business model? Are there entrepreneurial methods and approaches that might support me in driving my startup? What are the factors behind startups' survival? It thus emerges that for

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startups the quest for creation and survival hinges on their ability to create value by identifying and exploiting new opportunities while pursuing a viable business model. However, startups often struggle, with their limited resources, to formulate their strategy, and their initial business model is a rough idea of how to bring value to the customer (Teece, 2010).

On one side, equipping startup entrepreneurs with knowledge and insights on strategy and business modelling approaches that fit their uncertain and risky context might increase the chance of new ventures creation and survival, from the other side scholars (Balboni et al., 2019; Randhawa et al., 2021) recognize that academic literature remains fragmented, lacking systematic and structured knowledge in this domain. Indeed, as outlined by Ghezzi and Cavallo (2020), "the proliferation of different practices that can possibly help entrepreneurs in their innovation endeavors, together with the substantial lack of a clear and unified theory backing such practices, contribute towards creating a rather confusing setting that amplifies the problems that startups are already having to face, thus jeopardizing their quest for survival". In addition, the process by which startup entrepreneurs develop an effective business model, which is the foundation of value creation and market survival, is explored little (McDonald and Eisenhardt, 2020).

Recent entrepreneurial literature has begun to address these gaps, emphasizing the need to frame and systematize the startup business model design and validation processes, "so as to equip entrepreneurs with a quasi-scientific process for launching their ventures" (Silva et al., 2020, p 597). Building on these insights, we conduct a systematic literature review on the identification and exploitation of opportunities by startups, as well as on the definition of their strategy and business model to survive in competitive markets. Specifically, we aim to provide an overview of this fragmented literature, to depict its evolution, to identify its main strands and finally to detect promising paths for future research that can contribute to developing a more comprehensive body of knowledge. This article frames the analysis within the broader context of three key domains of knowledge—entrepreneurship, strategy, and business models—while focusing specifically on opportunity identification and exploitation, strategy and business model development. We believe that taking a multiple lens in investigating this phenomenon provides interesting insights to support startups' ability to navigate through a challenging landscape and deal with the related risk and uncertainty.

We expect several contributions from our research. First, this study diverges from previous ones by advancing our understanding of startups, framing the research topic discussion within the broader context of strategy, entrepreneurship and business model literature. In this way, we respond to the recent call of approaching startup business model design taking a strategic viewpoint (Guo et al., 2020) and, at the same time, analyzing entrepreneurial actions using a strategic perspective. Second, we outline gaps and future lines of inquiry scholars can take inspiration from; since startups represent one of the pillars of economic growth (Santisteban et al., 2021), making a step forward and further enriching the development of this field is highly important for economic and societal development. Finally, entrepreneurs, business angels, consultants, and policy makers, while reading the present article, can increase their awareness about the importance of taking a strategic and business modeling perspective and, at the same time, find useful practices and methods for figuring out the future of their companies.

In the remainder of the article, we first present the details of the methodology we use to select and analyze the articles included in our selection. Subsequently, after briefly describing the selected articles, we discuss our findings which recognize the field as structured around four main strands of research. In the last section, after outlining the key insights and questions to be further deepened and explored, we conclude with the academic and managerial implications.

2. Methodology

With the aim of advancing our knowledge on the topic, we decided to perform a systematic literature review on the identification and exploitation of opportunities by startups, as well as on the definition of their strategy and business model to survive in competitive markets. The literature review method is a well-recognized tool to provide a systematic picture of a research topic and in particular, as in our case, if it is fragmented and scattered across different disciplines. To perform our analysis, we took inspiration from Pittaway et al. (2004); we thus followed the steps they designed to provide a systematic and transparent literature review.

We performed the search in November 2024 in the database "ISI Web of Knowledge Core Collection". This database is recognized by the academic community as the most influential (Hota et al., 2020; Schröder et al., 2020) and widely accepted and utilized data base in the social science domain (e.g., Gurzki and Woisetschläger, 2017).

The search strategy was designed starting from our topic of interest, taking inspiration from previous literature reviews on strategic entrepreneurship (Schröder et al., 2020) and new ventures (Bortolini et al., 2018; Shepherd et al., 2021). We thus combined two groups of keywords (Group 1: "strateg*" or "business model*" or "entrepreneurship*"; Group 2: "new firm*" or "new venture*" or "new business*" or "startup*" or "start-up*" or "start up*"). In this way we intended to collect all the publications that deal with the identification and exploitation of opportunities and/or the development of the strategy and business model to survive in the market in the startups' context. In comparison to the recent literature reviews on strategic entrepreneurship (Schröder et al., 2020; Thomas et al., 2021), we added the key word "business model" since designing a business model is critical for startup survival (Guo et al., 2020). This search was performed in the title, according to the approach of previous literature reviews (e.g., Trulen et al., 2020). The search was limited to articles and reviews published in English language in the "Business" or "Management" categories of Web of Science. We selected only Journal articles, written in English, because only these can be considered "certified knowledge" that have undergone a rigorous review process (García-Lillo et al., 2017).

After applying these criteria, we came up with 520 articles. We read the abstract and we retained only articles that are focused on our topic of interest, which is the identification and exploitation of opportunities by startups, as well as the definition of their strategy and business model to survive in competitive markets. Thus, we excluded articles that deal with venture capitalists or business angels' financing approaches, knowledge transfer policies to foster the creation of academic spin-offs, entrepreneurship education or corporate entrepreneurship and internationalization. We also excluded articles where the term strategic or business model/new

business was used with a meaning which is not related to our focus (e.g., strategic partnership or new business ownership/product), as well as articles that are not focused on the startup's context (e.g., accelerators, incubators). We retained only articles that focus on new businesses defined as startups, while excluding those centered on the establishment of new ventures/businesses within existing companies. Three authors worked on the selection of pertinent articles, and they carried out a reliability analysis on a small set to test the coherence; the exclusion criteria were consistent and the discrepancies (discovered mostly at the beginning of the abstract reading) were due to some minor different views, which were solved after discussion and careful review of the article. After using these exclusion criteria, 170 relevant articles were identified. The subsequent reading of the full text led us to exclude 14 additional papers for the same exclusion criteria outlined above. We finally added 8 papers from the article's reference list as they are focused on the topic of interest. In the end, the final set is made up of 164 articles, which represent the basis of our review (see Fig. 1). This number is aligned with several prior systematic reviews (e.g., Lahiri, 2016; Zhaoor et al., 2020).

After identifying the pertinent articles, we read and analyzed them with the aim of mapping the main features of each article in a spreadsheet file. More specifically for each article, we considered the aim, theoretical reference, methodology, hypotheses and/or research questions, different roles of variables (dependent, mediating, moderating and independent), level of analysis, sample, approach used to examine the business model/strategy (if any) and main results.

However, our aim was not only to identify and describe the literature on our topic of interest, but also to provide a systematic and organized picture in order to support future research. Consequently, to organize this body of knowledge and shed light on the current theories and future areas of inquiry, the content of the articles, the variables that are investigated and the relationships between them were used to group the various articles into homogeneous strands. The findings derived from this analysis are reported in the next section.

3. Findings

This section first presents the descriptive findings on publication years, journal distribution, and the most relevant articles, followed by a comprehensive thematic analysis.

3.1. Descriptive analysis

Hereafter, we report some descriptive information on the set of 164 articles that constitute our reference body of knowledge. One way to describe a field is to look at its temporal evolution. Fig. 2 provides this view for our selected articles. It demonstrates that the field began to develop in early 1985, but has experienced continuous growth since 2013, indicating the increasing importance of the topic in recent years.

Table 1 provides the distribution of the journals included in our articles' selection, detailing their prevalence, quality, and discipline classification according to the ABS/AJG 2024 framework. The data show that the topic under consideration is framed at the crossroads of different bodies of knowledge. Indeed, journals are spread across several disciplines, embracing business/management, strategic management and entrepreneurship disciplines. Finally, there are some journals that belong to the marketing, operations and innovation categories, since finding and developing viable products/services to offer to the market is crucial for startups' survival and success.

Finally, we examined the most relevant articles in terms of both total number of citations and average number of citations per year retrieved in Web of Science, as depicted in Table 2. The analysis highlights the key pivotal articles, and the research strands they belong to, which will be introduced in the next section. In particular, while the indicator "Number of citations" reveals the foundational

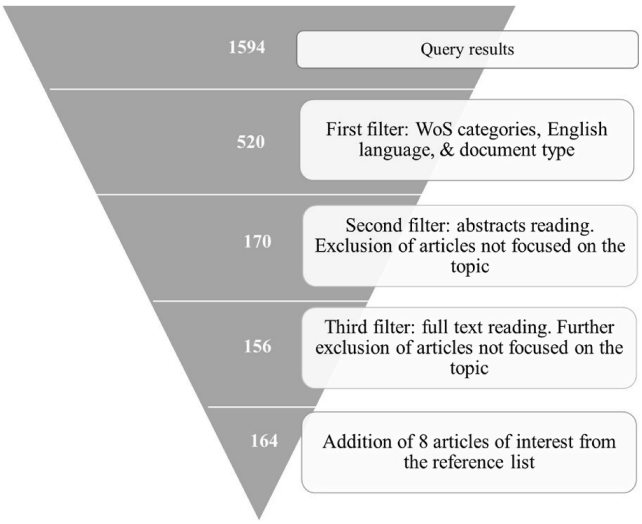

Fig. 1. Articles selection steps.

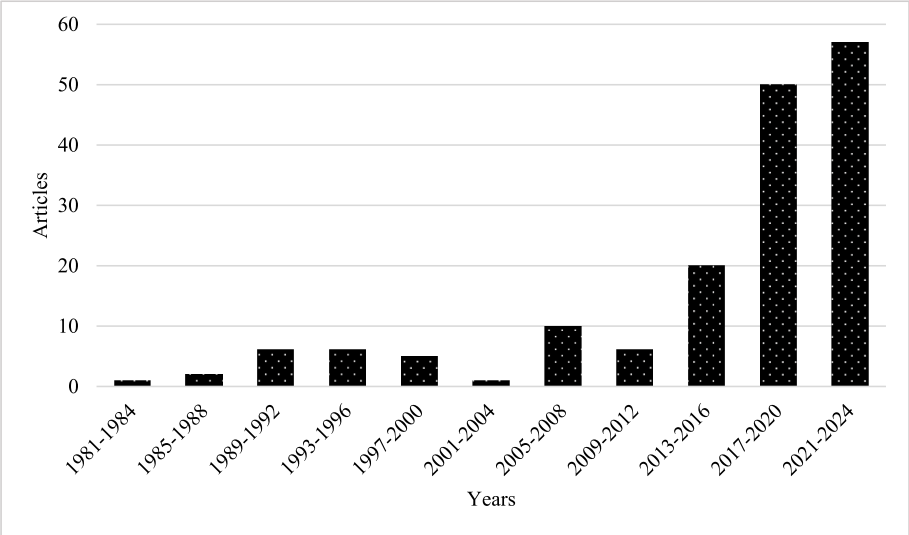

Fig. 2. Temporal evolution of research: four-year distribution of articles.

articles that indicate long-term recognition and relevance, the indicator "Average citations per year" is useful for identifying the most emergent articles that are shaping the field.

3.2. Thematic analysis

After carefully reading and coding the selected articles in our spreadsheet, we tried to cluster them into strands, which are substantially different among them in terms of content; at the same time, articles belonging to the same strand share similar content. In this way we identified four strands that in the end constitute our organization of the literature under analysis: 1) research on antecedents of startups' survival and success, 2) research on startups' archetypes, 3) research on startups' evolution and adaptation, and finally 4) research on entrepreneurial tools and methods.

For each strand, taking inspiration from Chaparro and de Vasconcelos Gomes (2021), we further distinguished whether the article examines aspects/variables that are related to the following four levels of analysis: 1) the *individual*, which refers to the single individual (i.e., the entrepreneur) or a group of individuals (i.e., top management team -TMT); 2) the *firm*; 3) the inter-organizational network (called *network* from now on), defined "as a set of direct and indirect relationships among organizations" (Agostini et al., 2019) and finally 4) the *macro environment*, which includes the demographic, economic and socio-political factors as well as industry characteristics.

Fig. 3 maps articles based on the strand they belong to and the levels of analysis they adopt.

3.2.1. Research on "Antecedents of startups survival and success"

Antecedents are conceptualized as something that happens before something else and thus, they point to the elements or factors that might affect startups' survival and success.

When considering the *individual* as the level of analysis, most of the papers emphasize the fundamental role the entrepreneur and the top management team play. In particular, as far as the former, both the founder's resources (human, social and financial capital) and his/her managerial experience and management and technological capability are deemed to have a positive relationship with the startups' financial performance or to determine an increase in the number of employees (McGee et al., 1995; Lin et al., 2006; Zhao et al., 2013; Debrulle et al., 2020). Concerning the latter, top management team organization as well as top management team processes are demonstrated to significantly influence the comprehensiveness and speed of strategic decision making in startups (Talaulicar et al., 2005).

When focusing on the *firm* level, the most investigated antecedents refer to startup's strategy, its capabilities and its business model. A higher number of articles concentrate on the impact that strategy might have on different performance indicators, considering the organizational strategy (Romanelli, 1989), Porter generic strategies (Dowling and McGee, 1994; Manev et al., 2015), or the technology and innovation strategy (Zahra, 1996; Zahra and Bogner, 2000; Cai et al., 2017). Within this stream, the positive impact of strategy and capabilities on startup performance is a well-established result. Indeed, studies consistently demonstrate the positive effects of strategic variables on outcomes such as survival rates (Chen et al., 2009) and economic or financial performance (Manev et al., 2015), both in terms of antecedents and mediators. Furthermore, the interplay between strategy, resources, and capabilities is a recurring theme.

Particularly noteworthy is the recent debate within this stream, which shifts the focus from the strategy to effectuation (Guo, 2018, 2019) and business model (Zhang et al., 2018; Slávik et al., 2019; Balboni et al., 2019), to signal the importance of figuring out how to execute the strategy. Business model is seen as a new source of value creation, and thus it is critical for startups' survival and growth. In particular, Balboni et al. (2019) examine how the initial business model, the subsequent changes in the design themes and the combinative effect of efficiency and novelty (contextual ambidexterity) impact a startup's growth performance. Different findings are

Table 1
Journals distribution.

Journal [Number of Articles, Classification in AJG 2024]	AJG Category (2024)	Number of Articles
Journal of Business Venturing [10, 4*], International Journal of Entrepreneurial Behavior & Research [7, 3], Journal of Small Business Management [5,3], Strategic Entrepreneurship Journal [4,4], Small Business Economics [4, 3], Entrepreneurship Theory and Practice [3, 4*], Entrepreneurship Research Journal [2, 2], International Entrepreneurship and Management Journal [2, 1], International Small Business Journal [1, 3], International Review of Entrepreneurship [1, 2], Journal of Entrepreneurship, Management and Innovation [1, 1], International Journal of Entrepreneurial Venturing [1,1]	Entrepreneurship and small business management	41
Journal of Business Research [8, 3], Management Decision [7, 2], Administrative Science Quarterly [2, 4*], California Management Review [2, 3], Journal of Management]1, 4*], Journal of Management Studies [1, 4], European Management Review [1, 3], Harvard Business Review [1, 3], Business Ethics the Environment & Responsibility [1, 2], Business horizons [1, 2], Global Business Review [1, 1], RAUSP Management Journal [1, 1]	General Management, Ethics, Gender and Social Responsibility	27
Technological Forecasting and Social Change [7,3], Journal of Product Innovation Management [3,4], Technovation [3,3], Creativity and Innovation Management [2,2], European Journal of Innovation Management [2,1], Technology Innovation Management Review [2,1], Research Policy [1,4*], Industry and Innovation [1,3], R&D Management [1,3], Innovation-Organization & Management [1,2], Research-Technology Management [1,2], International Journal of Innovation and Technology Management [1,1], Journal of Innovation & Knowledge [1,1]	Innovation	26
Strategic Management Journal [6,4*], Long Range Planning [6,4], Technology Analysis & Strategic Management [4,2], Journal of Competitiveness [1,2], Management Review Quarterly [1,1]	Strategy	17
Industrial Marketing Management [5,3], International Journal of Research in Marketing [2,4] Electronic Markets [1,2], Journal of Business & Industrial Marketing [1,2]	Marketing	9
International Journal of Technology Management [3,2], IEEE Transactions on Engineering Management [2,3], International Journal of Operations & Production Management [1,4] Business Process Management Journal [1,2], International Journal of Quality and Service Sciences [1,1], Journal of Manufacturing Technology Management [1,1]	Operations and Technology Management	9
Management and Organization Review [2,3], Asia Pacific Journal of Management [1,3], International Business Review [1,3], European Journal of International Management [1,2], Journal of Business Economics and Management [1,2]	International Business and Area Studies	6
Management Science [2,4*], System Dynamics Review [1,2]	Operations Research and Management Science	3
Information Systems and E-Business Management [1,2], Knowledge Management Research & Practice [1,1]	Information systems	2
Organization Science [1,4], Journal of Organizational Change Management [1,2]	Organizational Studies	2
Journal of Cleaner Production [2,1]	Public Sector and Health Care	2
Decision [1,2]	Psychology (General)	1
Administrative Sciences [3,-], Entrepreneurial Strategic Content [2,-], Entrepreneurship and Sustainability Issues [2,-], Access-Access to Science Business Innovation in the Digital Economy [1,-], International Small Business Journal-Researching Entrepreneurship [1,-], Journal of Global Entrepreneurship Research [1,-], Management & Marketing [1,-], MIT Sloan School of Management [1,-], Research in Transportation Business & Management [1,-], Polish Journal of Management Studies [1,-], Sustainability [1,-], The Journal of Strategic Information Systems [1,-] Technology, Innovation, Entrepreneurship and Competitive Strategy [1,-], The International Journal of Management Education [1,-]	Not listed	18

achieved by the article of Guo et al. (2020), which shows that even though technology and consumer orientations have a positive effect on startups' performance, achieving a balance between the two orientations in business model design seems to be counterproductive. It is also noteworthy that certain entrepreneurial approaches, such as bricolage, causation, and effectuation, come into play as mediation variables to signal the recent importance authors (Yuan et al., 2024; Li and Yu, 2024) attribute to them in order to explain the effect of the independent variables on startups survival. In parallel, recent studies (Donbesuur et al., 2022; Shao et al., 2023; Guckenbiehl et al., 2024) have increasingly focused attention on startup boundaries, particularly in terms of external knowledge flow and boundary-spanning search, signalling a shift in research attention from the firm level to the external environment. Indeed, among the few recent articles where antecedents are located at the *network* level (Zou et al., 2010; Muegge and Mezen, 2017; Xu et al., 2022; Chen et al., 2024), there is an interesting contribution (Muegge and Mezen, 2017), which relates startups ecosystem participation to new venture business model, showing that "more intense participation in the ecosystem is associated with higher business model differentiation, sophistication, and extent of change". Using a qualitative approach, Eftekhari and Bogers (2015) demonstrate that ecosystem collaboration, user involvement and an open environment positively impact new venture survival.

Finally, there is a pool of papers where antecedents are focused at the *macro* level, considering the impact of different elements related to the environment, such as environmental uncertainty (Song et al., 2016), social development of a regional cluster (Larrañeta et al., 2012) or the industry characteristics (Zahra et al., 2005) on organizational, strategic and economic and financial performances.

Fig. 4 summarizes the most frequently investigated relationships within this strand. Notably, the vast majority of the articles adopt a quantitative methodological approach, mainly based on primary data collected through surveys, to test associations between antecedents, mediators, and moderators on certain outcomes.

Table 2
The most relevant articles.

Articles with the highest overall citations			Articles with the highest average citations per year			
Article	Number of citations	Strand	Article	Number of citations	Average citations per Year	Strand
Shepherd et al. (2000)	378	Antecedents	Ghezzi and Cavallo (2020)	312	62.40	Methods/Tools
Zahra and Bogner (2000)	377	Antecedents	Du and Kim (2021)	168	42.00	Archetypes
Sandberg and Hofer (1987)	327	Antecedents	McDonald and Eisenhardt (2020)	204	40.80	Methods/Tools
Ghezzi and Cavallo (2020)	312	Methods/ Tools	Randhawa et al. (2021)	103	25.75	Evolution Process
McDougall et al. (1994)	311	Antecedents	Ritter and Lettl (2018)	159	22.71	Archetypes
Zahra (1996)	265	Antecedents	Hartmann et al. (2016)	202	22.44	Archetypes
Covin and Slevin (1990)	252	Antecedents	Guo et al. (2022)	67	22.33	Antecedents
Romanelli (1989)	250	Antecedents	Garbuio and Lin (2019)	121	20.17	Archetypes
McDonald and Eisenhardt (2020)	204	Methods/ Tools	Bocken and Snihur (2020)	93	18.60	Methods/Tools
Hartmann et al. (2016)	202	Archetypes	Silva et al. (2020)	91	18.20	Methods/Tools
Hayton (2005)	200	Antecedents	Ghezzi (2019)	106	17.67	Methods/Tools
McGee et al. (1995)	176	Antecedents	McDonald and Gao (2019)	103	17.17	Evolution Process
Roberts and Berry, 1984	172	Archetypes	Felin et al. (2019)	99	16.50	Methods/Tools
Du and Kim (2021)	168	Archetypes	Shepherd et al. (2000)	378	15.12	Antecedents
Nicholls-Nixon et al. (2000)	163	Antecedents	Zahra and Bogner (2000)	377	15.08	Antecedents
Ritter and Lettl (2018)	159	Archetypes	Kulkov (2023)	29	14.50	Methods/Tools
McDougall and Robinson Jr (1990)	139	Archetypes	Zhang et al., 2021	55	13.75	Antecedents
Carter et al. (1994)	134	Archetypes	Guo et al. (2020)	66	13.20	Antecedents
Garbuio and Lin (2019)	121	Archetypes	Cosenz and Noto (2018a)	92	13.14	Methods/Tools
Velu (2015)	114	Antecedents	Mansoori and Lackeus (2019)	78	13.00	Methods/Tools

Note: Antecedents ("Antecedents of startups survival and success"); Archetypes ("Startups archetypes"); Evolution process ("Startups evolution and adaptation"); Methods/Tools ("Entrepreneurial methods and tools").

3.2.2. *Research on "Startups archetypes"*

The focus of the articles within this strand is on putting forward some general taxonomies or archetypes of new ventures, most of them based on the strategy and/or the business model pursued by startups. Apart from three papers (Tukianen et al., 2019; McGrath and O'Toole, 2021; Mosch et al., 2022), which take the network as a level of analysis and provide insights into how startups strategically engage with and leverage networks to support their growth and operational success, all the others are positioned at the firm level and consider either strategy or business model (see Table 3).

Within the strategy archetypes group, some studies focus on *entry strategies*, outlining how startups position themselves in the market upon entry. For example, McDougall and Robinson (1990) propose competitive strategy archetypes that vary based on distribution channels, product range, cost structure, and integration choices, while Cozzolino and Geiger (2024) explore how startups strategically position themselves within existing ecosystems, balancing disruption potential and regulatory constraints. Other contributions develop archetypes of *growth strategies*, examining how startups scale and develop over time. Carter et al. (1994) provide typologies based on segmentation scope, and product versus marketing emphasis, while Lee et al. (2024) examine user growth patterns in mobile application-based startups. Similarly, Kim et al. (2021) classify ICT startups based on their strategic focus, such as core technology development, portfolio efficiency, or product quality enhancement. Finally, a growing body of literature put forward archetypes of *strategic responses to crises or failure*. Guckenbiehl and de Zubielqui (2022) identify different archetypes of startups' responses to the COVID-19 crisis, ranging from resilience-oriented approaches to opportunity-seeking behaviors. Corvello et al. (2024) explore post-failure strategies, highlighting the processes of external monitoring, resource mobilization, and organizational learning. Additionally, Ismayil and Tuncalp (2024) review how startups employ nonmarket strategies, such as legitimacy building and socio-political networking, to navigate diverse economic and industrial contexts. This categorization highlights the evolving nature of startup strategy archetypes and their relevance in different phases of a startup's lifecycle.

Different from strategy-based archetypes, business model-based archetypes tend to be more *specific and context-dependent* compared to strategy-based archetypes. This specificity can be attributed to the inherent nature of business models, which are deeply intertwined with industry characteristics, technological frameworks, and value creation mechanisms. Indeed, there are only a few articles (e.g., Kesting and Günzel-Jensen, 2015; Slávik et al., 2020) that describe general archetypes, which focus on how startups structure value creation, value capture, and value delivery. The majority of contributions present industry/technology-specific archetypes, which emerge in response to the particular constraints and opportunities of a given sector or technology. For example, Palmié et al. (2021) map out distinct business models for startups in the energy sector, while Anton et al. (2021) focus on AI-driven business models in the electric power industry. Likewise, Tönnissen et al. (2020) identify business models specifically tailored to blockchain startups, considering unique elements such as token economics and network effects.

	Antecedents of Startups survival and success	Startups Archetypes	Startups Evolution and Adaptation	Entrepreneurial Methods and Tools
Individual	8, 13, 28, 32, 33, 39, 43, 61, 68, 84, 86, 87, 88, 98, 100, 104, 116, 132, 135, 137, 142, 153, 154, 161, 162, 163		3, 19, 65, 134	73, 93
Firm	2, 6, 7, 8, 9, 13, 14, 15, 16, 18, 21, 28, 32, 33, 35, 36, 38, 39, 41, 42, 43, 52, 54, 55, 56, 57, 58, 59, 61, 63, 66, 68, 71, 72, 74, 75, 77, 80, 81, 83, 84, 85, 86, 87, 88, 89, 90, 92, 96, 97, 98, 100, 103, 104, 105, 107, 113, 114, 116, 117, 118, 119, 122, 123, 124, 125, 126, 127, 128, 130, 131, 132, 133, 135, 136, 139, 141, 143, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164	4, 17, 24, 37, 45, 46, 53, 60, 64, 67, 69, 70, 78, 82, 95, 109, 111, 112, 125, 138	5, 34, 44, 48, 62, 65, 79, 94, 110, 134	10, 11, 12, 22, 23, 25, 26, 27, 30, 31, 40, 47, 49, 50, 51, 76, 91, 93, 101, 106, 115, 120, 121, 129, 144
Network	20, 39, 103, 143, 145, 150, 164	29, 99, 102, 136, 140	1, 79, 108	
Macro	14, 15, 16, 32, 33, 35, 38, 57, 59, 68, 71, 72, 77, 80, 81, 83, 96, 97, 114, 116, 117, 122, 131, 133, 143, 146, 147, 150, 151, 152, 154, 157, 158	37, 45		

1	(Aaboen et al., 2013)	42	(Fiet & Patel, 2008)	83	(Li & Liu, 2013)	124	(Slávik et al., 2021)
2	(Almeida & Fernando, 2008)	43	(Friar & Meyer, 2003)	84	(Li & Feng, 2023)	125	(Slávik et al., 2020)
3	(Anagnou et al., 2019)	44	(Frigotto et al., 2014)	85	(Li & Yu, 2024)	126	(Slávik et al., 2019)
4	(Anton et al., 2021)	45	(Gans et al., 2018)	86	(Lin et al., 2006)	127	(Slavik et al., 2020)
5	(Balboni & Bortoluzzi, 2015)	46	(Garbuio & Lin, 2019)	87	(Liu et al., 2024a)	128	(Slávik et al., 2022a)
6	(Balboni et al., 2019)	47	(García-Gutiérrez & Martínez-Borreguero, 2016)	88	(Liu et al., 2024b)	129	(Slávik et al., 2022b)
7	(Bamford et al., 2009)	48	(Gegenhuber & Dobusch, 2017)	89	(Liu et al., 2022)	130	(Smith, 1998)
8	(Batra, 2016)	49	(Ghezzi, 2019)	90	(Manev et al., 2015)	131	(Song et al., 2010)
9	(Berbegal Mirabent et al., 2020)	50	(Ghezzi, 2020)	91	(Mansoori & Lackeus, 2019)	132	(Song & Jing, 2017)
10	(Bocken & Snihur, 2020)	51	(Ghezzi & Cavallo, 2020)	92	(Mazzoni & Innocenti, 2024)	133	(Song et al., 2016)
11	(Bortolini et al., 2018)	52	(Gil et al., 2006)	93	(McDonald & Eisenhardt, 2020)	134	(Street et al., 2018)
12	(Brecht et al., 2021)	53	(Guckenbiehl & Corral de Zubielqui, 2022)	94	(McDonald & Gao, 2019)	135	(Symeonidou & Nicolaou, 2018)
13	(Brinckmann et al., 2019)	54	(Guckenbiehl et al., 2024)	95	(McDougall & Robinson, 1990)	136	(Symeonidou et al., 2022)
14	(Bruneel et al., 2022)	55	(Gundry & Kickul, 2006)	96	(McDougall et al., 1994)	137	(Talaulicar et al., 2005)
15	(Cai et al., 2017)	56	(Guo et al., 2022)	97	(McDougall et al., 1992)	138	(Tönnissen et al., 2020)
16	(Cai et al., 2016)	57	(Guo et al., 2020)	98	(McGee et al., 1995)	139	(Tsai & Li, 2007)
17	(Carter et al., 1994)	58	(Guo, 2018)	99	(McGrath & O'Toole, 2021)	140	(Tukiainen et al., 2019)
18	(Chammassian & Sabatier, 2020)	59	(Guo, 2019)	100	(Mohand-Amar, 2024)	141	(Ullah et al., 2023)
19	(Chaparro & Gomes, 2021)	60	(Hartmann et al., 2016)	101	(Morecroft et al., 1991)	142	(Ulvenblad et al., 2013)
20	(Chen et al., 2024)	61	(Hayton, 2005)	102	(Mosch et al., 2022)	143	(Van Den Heuvel et al., 2020)
21	(Chen et al., 2009)	62	(Hentry et al., 2024)	103	(Muegge & Mezen, 2017)	144	(Varma & Dutta, 2022)
22	(Christodoulou et al., 2024)	63	(Huang et al., 2023)	104	(Newbert et al., 2007)	145	(Velu, 2015)
23	(Corbo et al., 2020)	64	(Ismayil & Tunçalp, 2024)	105	(Nicholls-Nixon et al., 2000)	146	(Von Gelderen et al., 2000)
24	(Corvello et al., 2024)	65	(Ivanova & Tornikoski, 2022)	106	(Nunes et al., 2022)	147	(Wang & Wu, 2024)
25	(Cosenz, 2017)	66	(Jiang & Murmann, 2023)	107	(Olson & Bokor, 1995)	148	(Wang et al., 2023)
26	(Cosenz & Noto, 2018a)	67	(Jorzik et al., 2024)	108	(O'Toole & McGrath, 2018)	149	(West & Bernhardt, 2009)
27	(Cosenz & Noto, 2018b)	68	(Keeley & Roure, 1990)	109	(Palmié et al., 2021)	150	(Xu et al., 2022)
28	(Covin & Slevin, 1990)	69	(Kesting & Günzel-Jensen, 2015)	110	(Randhawa et al., 2021)	151	(Xu et al., 2023)
29	(Cozzolino & Geiger, 2024)	70	(Kim et al., 2021)	111	(Ritter & Lettl, 2018)	152	(Xu et al., 2024)
30	(da Luz Peralta et al., 2020a)	71	(Kiss & Barr, 2015)	112	(Roberts & Berry, 1984)	153	(Yu et al., 2022a)
31	(da Luz Peralta et al., 2020b)	72	(Kiss & Barr, 2017)	113	(Romanelli, 1987)	154	(Yu et al., 2022b)
32	(Debrulle et al., 2020)	73	(Konietzko et al., 2020)	114	(Romanelli, 1989)	155	(Yuan et al., 2024)
33	(Debrulle et al., 2020)	74	(Konya-Baumbach et al., 2019)	115	(Ruggieri et al., 2018)	156	(Zahra, 1996)
34	(Dhir et al., 2024)	75	(Kuester et al., 2018)	116	(Sandberg & Hofer, 1987)	157	(Zahra & Bogner, 2000)
35	(Donbesuur et al., 2022)	76	(Kulkov, 2023)	117	(Sebaka & Zhao, 2023)	158	(Zahra et al., 2005)
36	(Dowling & McGee, 1994)	77	(Kumar & Das, 2020)	118	(Shao et al., 2023)	159	(Zhang & Song, 2024)
37	(Du & Kim, 2021)	78	(Kurpiela & Teuteberg, 2023)	119	(Shepherd et al., 2000)	160	(Zhang et al., 2024)
38	(Du et al., 2016)	79	(Laari-Salmela et al., 2019)	120	(Silva et al., 2021)	161	(Zhang et al., 2018)
39	(Eftekhari & Bogers, 2015)	80	(Larrañeta et al., 2012)	121	(Silva et al., 2020)	162	(Zhao et al., 2015)
40	(Felin et al., 2019)	81	(Larrañeta et al., 2014)	122	(Širec & Močnik, 2016)	163	(Zhao et al., 2013)
41	(Felzensztein & Bagheri, 2024)	82	(Lee et al., 2024)	123	(Slávik, 2019)	164	(Zou et al., 2010)

Fig. 3. Organizing the literature on the field.

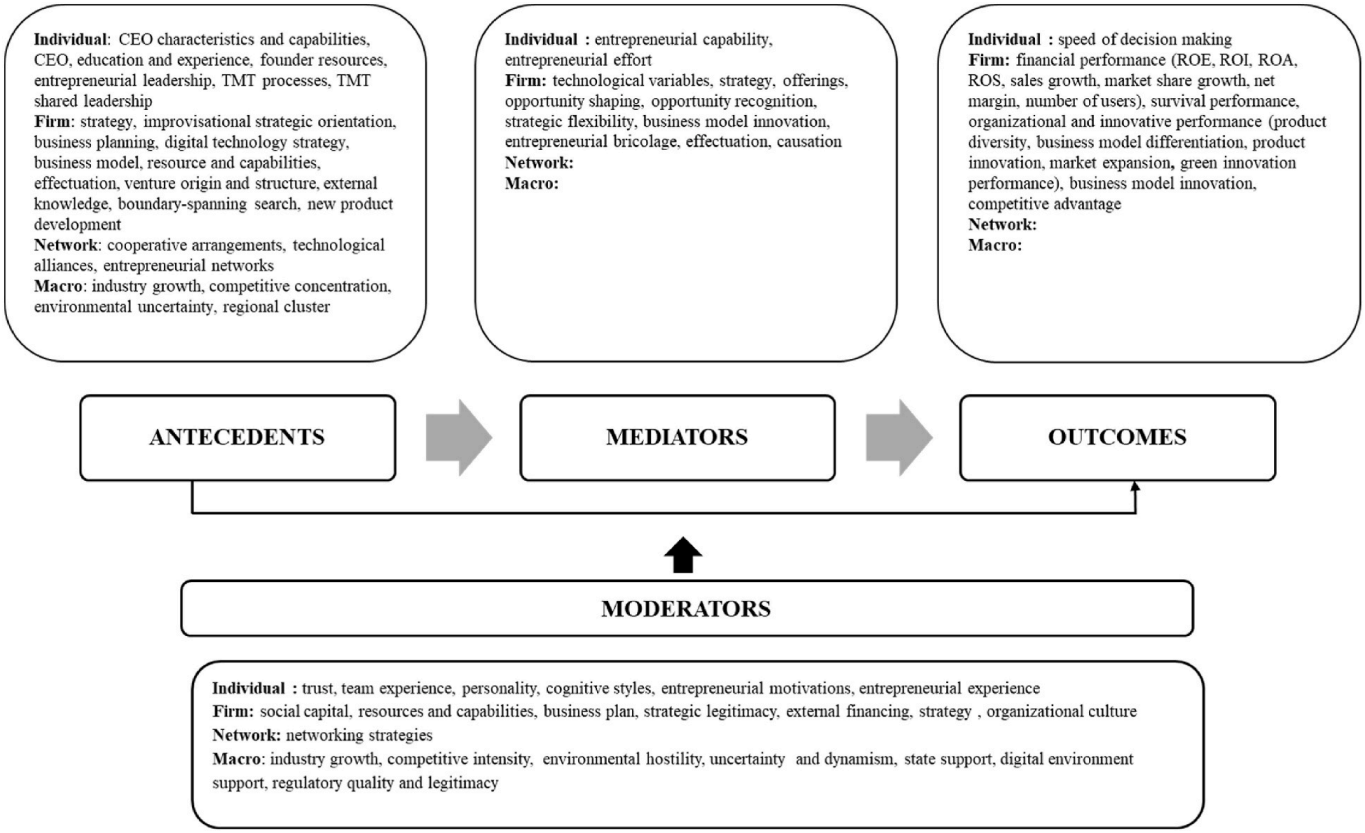

Fig. 4. The most investigated relationships within the research strand on "Antecedents of startups survival and success".

In conclusion, strategy-based archetypes tend to be more generalizable, as they focus on entry strategies, growth patterns, and crisis or failure responses. These approaches can be applied across various contexts, whereas business models must be tailored to industry-specific constraints. Startups cannot merely replicate generic business models; instead, they must adapt and refine them to fit their industry, technology, and competitive environment.

As shown in Table 3, scholarly interest in archetypes has grown in recent years, a trend also reflected in the citation analysis reported in Table 2. Although articles in this strand are fewer compared to those on Antecedents, they rank among the highest in average citations per year, indicating their significant recent influence in the ongoing discourse.

3.2.3. Research on "Startups evolution and adaptation"

Articles within this strand are the minority; they mainly adopt a qualitative methodological approach with a temporal perspective with the idea of investigating the development process of the startup over the years. In particular, *startup business model evolution* seems to attract the attention of some of these scholars: while Anagnou et al. (2019) focus their attention on the entrepreneur, demonstrating that effectuation and causation approaches to decision making are used simultaneously along business model development, Balboni and Bartoluzzi (2015) and Randhawa et al. (2021) take a broader perspective where business model adaptation and the capacity of innovating the initial business model also through the deployment of dynamic capability are recognized as fundamental for startups survival.

Along this line, understanding how new ventures *manage strategic reorientation and pivot decisions* is a hot topic: Chaparro and de Vasconcelos Gomes (2021) carry out a literature review on this issue, providing interesting insights, and McDonald and Gao (2019) shed light on how startup managers explain to different audience deviations from their original strategy to achieve a better fit between products and customers segments. More recently, Ivanova and Tornikoski (2022) explore the critical decision-making phase where nascent entrepreneurs choose between persisting or terminating their startup, highlighting how past goal-directed actions influence the likelihood and duration of this crisis.

Startups not only have to deal with adapting their business model and changing their decision along the course of action, but they also need a set of *inter-organizational relationships* to overcome their vulnerability and their lack of resources; this ecosystem of relationships is going to change along the new venture evolution. In this context, network development and network capability play a major role: startups develop through their formed collaborations, and they seem to purposefully use network capability in an intentional way (Aaboen et al., 2013; O'Toole and McGrath, 2018).

Authors within this strand, when referring to the decision-making process, often use as synonymous the entrepreneur and the venture, thus blurring the boundaries between the entrepreneur him/herself and the company and making it hard to recognize the level of analysis. In this regard, Street et al. (2018) clarify that some scholars adopt the term "entrepreneurial behavior" with the

Table 3
Summary of the different archetypes put forward by the literature.

Article	Method	Archetypes	What the archetype is about
STRATEGY – BASED ARCHETYPES			
McDougall and Robinson (1990)	Quantitative (*Survey, primary data, 247 new ventures*)	1) Aggressive growth via commodity type products to numerous markets with small customer orders; 2) Aggressive growth via price competitive new products; 3) Aggressive growth with narrow, special products priced competitively to a few larger buyers; 4) Controlled growth with broad product range to many markets and expensive backward integration; 5) Controlled growth via premium priced products sold directly to consumers; 6) Limited growth in niches offering a superior product and high customer service; 7) Average growth via steady development of new channels, brand name, ID and heavy promotion; 8) Limited growth selling infrequently purchased products to numerous markets with some forward integration	Archetypes of competitive strategy for entry with both niche and broad strategies
Carter et al. (1994)	Quantitative *(Survey, primary data, 2578 new firms)*	1) Quality proponents; 2) Technology valuers; 3) Niche purveyors; 4) Equivocators; 5) Super Achievers; 6) Price competitors	Generic new venture strategy archetypes
Lee et al. (2024)	Quantitative *(InnoForest database, secondary data, 266 startups)*	1) Stealthy Influencer; 2) Rapid Scaler; 3) Late Bloomer; 4) Niche Dominator	Growth patterns of mobile application-based startups
Kim et al. (2021)	Quantitative *(Korea Information Society Development Institute (KISDI), secondary data, 1476 startups)*	1) Core Technology Strategy; 2) Efficient Portfolio Strategy; 3) Product Quality Strategy; 4) Balance Strategy	Classification of ICT startups based on the weight of each business strategy they employ.
Guckenbiehl and de Zubielqui, 2022	Qualitative *(CEOs and co-founders' interviews, primary data, 32 startups)*	1) Stable beneficiaries; 2) Business-as-usual continuers; 3) Digital adjusters; 4) Adversity survivors; 5) Opportunity graspers; 6) Lemonade makers	Start-up strategic responses to crisis (COVID-19 pandemic)
Cozzolino and Geiger (2024)	Qualitative *(Multiple case study, primary data, 6 startups)*	1) Dual constraint; regulatory-enabled orchestration; 2) Regulatory-constrained complementation; 3) Dual enablement	A strategic approach to positioning startups entrants in an existing ecosystem
Corvello et al. (2024)	Qualitative *(Multiple case study, primary data, 21 startups)*	1) External monitoring; 2) Internal evaluation; 3) Resource acquisition and mobilization; 4) Value creation and capture; 5) Team-level entrepreneurial; 6) Organizational learning	Responses to innovation failures adopted by the start-ups; strategies and practices they adopted after failures and their learning experience.
Ismayil and Tunçalp (2024)	Literature review *(Systematic literature review)*	1) Social signalling; 2) Socio-political networking; 3) Legitimacy building; 4) Balancing	New ventures' nonmarket strategies, a firm's strategic activities outside the market, in different economic and industrial contexts.
BUSINESS MODEL – BASED ARCHETYPES			
Kesting and Günzel-Jensen (2015)	Conceptual paper *(Conceptual reasoning and anecdotal examples)*	1) Uncover additional functions of your product; 2) Identify strategic benefits for third parties; 3) Take advantage of economies of scope; 4) Utilize cross-selling opportunities; 5) Involve users and the crowd	Business model sophistication strategies based on various examples including Google, Ryanair, the Super Girl Contest on Hunan TV, and Spreadshirt
Hartmann et al. (2016)	Quantitative *(AngelList and publicly available sources, secondary data, 100 startups)*	1) Free data collector and aggregator; 2) Analytics as a service; 3) Data generation and analysis; 4) Free data knowledge discovery; 5) Data aggregation as a service; 6) Multi-source data mash-up and analysis	Data-driven business model used by start-up firms that rely on data as a key resource for business
Garubio et al. (2019)	Qualitative *(CEOs' and entrepreneurs' interviews and Crunchbase and Angel.co, primary and secondary data, 106 startups)*	1) Promoter; 2) Discriminator; 3) Trusted broker; 4) Personal Health companion; 5) Specialized diagnostic; 6) Smart prevention; 7) Aggregator	Emerging business model archetypes for AI-driven health care startups
Chammassian et al. (2020)	Qualitative *(Multiple case study, primary data, 12 startups)*	1) Technology-driven; 2) Market-driven; 3) Exit-driven	Business model for technology startups (TSUs)
Tönnissen et al. (2020)	Mixed methods *(Literature review and Quantitative based on Crunch and Icobench databases and other publicly available sources, secondary data, 195 startups)*	1) Pioneering model; 2) Expansion model; 3) Authority model	Business model of real-world blockchain-based startups
Slávik et al. (2020)	Quantitative *(Interview based survey, primary and secondary data, 106 startups)*	1) Small range of processes; 2) Large range of processes; 3) Model with considerable differentiation; 4) Cultivating relationships with customers	Business model regardless of the specific industry
Jorzik et al. (2024)	Qualitative *(Multiple case study, primary data, 9 startups)*	1) Scalability of the business model; 2) Novelty of the sustainability solution; 3) Sustainable	AI-driven business model innovation in green technology startups

(*continued on next page*)

Table 3 (*continued*)

Article	Method	Archetypes	What the archetype is about
		earnings architecture design; 4) Immediacy of the sustainability impact; 5) Exertion of influence on the customer	
Palmié et al. (2021)	Qualitative *(Thomson Reuters I/B/E/S and Crunchbase databases, secondary data, 280 startups and incumbents)*	1) Monolithic Producer; 2) Generation Entity Manager; 3) Traditional (Local) Utility; 4) Gentailer; 5) Pro-Distributor; 6) Retailer; 7) Green Producer; 8) Green Gentailer; 9) Green Retailer; 10) Green Utility+; 11) Smart Energy Solution Specialist; 12) Energy Optimizer; 13) Smart Energy Service Provider; 14) Utility+; 15) Grid Developer And Operator; 16) Flexible Energy Provider; 17) Local4local; 18) Turn-Key Living; 19) Customer Empowerment; 20) Virtual Power Plant; 21) Platform Player; 22) Energy Consulting; 23) Hybrid Model; 24) Integrated Solar Solutions; 25) Off-Grid Solutions	Business models of startups and incumbents in the energy sector
Kurpiela and Teuteberg (2023)	Qualitative *(Crunchbase database and company websites, secondary data, 34 startups)*	1) Vehicle operation and availability; 2) Platform operation; 3) Sharing concepts; 4) Autonomous mobility concepts	Product-service system-oriented business models of startups in the mobility sector
Anton et al. (2021)	Mixed methods *(Structured literature review, Quantitative based on Crunchbase database and qualitative based on interviews, primary and secondary data, 71 startups and 12 experts' interviews)*	1) Independent energy supply; 2) Customers cost control and management; 3) Data analysis; 4) Market transparency; 5) Investment and trade; 6) Maintenance and safety; 7) Electromobility and battery management; 8) Smart building	Business model taxonomy for the electric power industry that encompasses technologies falling under the umbrella of AI (electric power industries that use AI technologies).
NETWORKS – BASED ARCHETYPES			
Tukianen et al. (2019)	Quantitative *(CEOs' and managers interviews, primary data, 43 startups)*	1) Single ecosystem strategy; 2) Multi ecosystem strategy; 3) Ecosystem creation strategy	Strategy within and between business ecosystems for technology startups
McGrath and O'Toole (2021)	Qualitative *(Multiple case study, primary and secondary data, 24 new ventures)*	1) Business-to-business network prospecting; 2) Co-branding/co-promoting activities; 3) From maker-mindset to adapting; 4) Social media platforming; 5) Recognition and activation of network role	Early-stage network engagement strategies that new ventures employ to build traction and enhance network capability development.
Mosch et al. (2022)	Qualitative *(Multiple case study, primary and secondary data, 23 startups)*	1) Enabler; 2) Extender; 3) Transformer; 4) Orchestrator	Network roles in which data-driven startups operate

intention of looking at the specific action of the entrepreneur and/or employees while others prefer the term "entrepreneurial action" to refer to the "behaviors through which firms recognize and exploit market opportunities through novelty in resources, customers, markets, or combinations of resources, customers, and markets" (Sambamurthy et al., 2003).

Table 4 summarizes the most important features of the articles within this strand, making it evident that most of the articles employ a qualitative approach to shed light on the "Startups evolution and adaptation".

3.2.4. Research on "Entrepreneurial tools and methods"

Articles belonging to this strand propose some tools, methods, and practical guidelines meant to support startup entrepreneurs who work in uncertain, dynamic and unpredictable environments to envision their future and shape their business model (see Table 5).

Within this strand, there is a set of articles that illustrate how system dynamics (SDs) modelling can provide a methodological guide to business model design: SDs methodology was developed in the late 1950s and early 1960s at MIT by Jay Forrester and it allows modelling and simulating complex social systems (Forrester, 1961). Along this way, SD can be used to model strategies for management and change based on a feedback view of business systems, seen as a closed boundary. Since these models may simulate alternative scenarios and "explore what might have happened – or what could happen – under a variety of different past and future assumptions and across alternative decision choices" (Cosenz, 2017), they offer valid support to the entrepreneurs' decision-making process as well as in figuring out their strategy and business plan. While the pioneering paper (Morecroft et al., 1991) uses this method to model growth strategy in a biotechnology startup firm, the most recent articles combine system dynamics modelling and business model design. In particular, the tool makes it possible to simulate different scenarios where the variables are the key elements of the business model that are put in a chain of causal interdependencies, thus generating a certain output (Cosenz, 2017; Cosenz and Noto, 2018a). In other words, SDs may offer "useful insights to start-up entrepreneurs by capturing, explaining and simulating how critical business model elements interact to produce enduring competitive advantages over time" (Cosenz and Noto, 2018b).

Still focusing on the strategy and business model design, the larger block of articles within this strand proposes lean startup approaches (LSAs) as a comprehensive tool that combines "Lean Startup" and "Customer Development" methods (Ries, 2011; Blank, 2013). LSAs entail a quasi-scientific and systematic process where entrepreneurs translate their first business idea into falsifiable hypotheses, which are then tested through a series of minimum viable products (MVPs) experiments (Ghezzi and Cavallo, 2020); "Customer-originated feedback helps entrepreneurs understand if they should persevere with the business model, drop it altogether, or

Table 4
Summary of the articles belonging to "Startups evolution and adaptation" strand.

Article	Level of Analysis	Aim	Method
Aaboen et al. (2013)	Network	To identify patterns in the network development of new ventures and in how their strategizing relates to this development	Qualitative *(Multiple longitudinal case study, primary data, 3 new ventures)*
Frigotto et al. (2014)	Firm	To investigate (a) the evolution of exploration/exploitation, (b) changes in factors affecting their balance, (c) role of management control systems	Qualitative *(Single longitudinal case study, primary and secondary data, medium-sized IT Italian new venture)*
Balboni and Bartoluzzi (2015)	Firm	To explore connections between business model adaptation and new venture success	Qualitative *(Multiple retrospective case study, primary and secondary data, 3 new ventures)*
Gegenhuber and Dobusch (2017)	Firm	How do new ventures use open strategy-making as impression management over time?	Qualitative *(Multiple longitudinal case study, primary and secondary data, 2 startups)*
Street et al. (2018)	Individual	To investigate how entrepreneurial action shapes strategic alignment in new ventures	Qualitative *(Multiple retrospective case study, primary and secondary data, 2 new ventures)*
O'Toole and McGrath (2018)	Network	To examine strategic patterns of network capability development in new ventures	Qualitative *(Multiple longitudinal case study, primary data, 2 new ventures)*
McDonald and Gao (2019)	Firm	To shed light on how new ventures manage strategic reorientations	Qualitative *(Multiple case study, primary and secondary data, 2 new ventures)*
Anagnou et al. (2019)	Individual	To investigate how effectuation and causation shape business model elements in digital startups	Qualitative *(Expert interviews, primary data, 6 startups)*
Laari-Salmela et al. (2019)	Firm/ Network	How do start-ups strategize in an identity crisis within a network context?	Qualitative *(Multiple longitudinal case study, primary and secondary data, 4 startups)*
Chaparro and de Vasconcelos Gomes (2021)	Individual	To review literature on pivot decisions to identify conceptualizations, research streams, and theoretical building blocks	Literature review *(systematic literature review)*
Randhawa et al. (2021)	Firm	To investigate how SMEs' market orientation and dynamic capabilities relate to business model innovation	Qualitative *(Single longitudinal case study, primary and secondary data, online innovation intermediary SME)*
Ivanova and Tornikoski (2022)	Individual	To integrate persistence/termination decisions into new venture creation using Theory of Action Phases (TAP) and action crisis	Quantitative *(Longitudinal dataset from the Panel Study of Entrepreneurial Dynamics (PSED), secondary data, 2242 nascent entrepreneurs)*
Dhir (2024)	Firm	To understand how tech healthcare startups transitioned during COVID-19, emphasizing capabilities/resources in each phase	Qualitative *(Open-ended essay, primary data, 48 participants)*
Hentry (2024)	Firm	To examine challenges faced by startups, their recovery, and factors influencing turnaround strategies	Mixed methods *(Survey and key stakeholders and founders' interviews, primary data, 120 startups)*

"pivot" it – by keeping features that customers approved, while tweaking elements customers rejected" (Silva et al., 2020). While some articles (Bortolini et al., 2018; Felin et al., 2019; Silva et al., 2020; Da Luz et al., 2020b; Bocken and Snihur, 2020) carry out a literature review or develop a conceptual paper meant to provide a synthesis of the tools and concepts and to pave the way for future research, other articles (McDougall et al., 1992; Ghezzi and Cavallo, 2020; Konietzko et al., 2020; Ghezzi, 2020) apply the LSAs to a small number of startups cases, adopting a qualitative approach. There is only one paper (Ghezzi, 2019) that adopts a mixed method, also testing the LSAs on a large sample of digital startups.

The Lean Startup tool appears to be a well-established method, leaving room, recently, for new approaches and models that incorporate the sustainability agenda and place greater emphasis on business model development. Indeed, as sustainability has become a key priority for startups, scholars (Nunes et al., 2022; Christodoulou et al., 2024) have developed frameworks and tools to integrate this aspect into strategy and business model development. Along the same line, the urgency for startups to discover and validate their business models drives the advancement of experimentation frameworks (Brecht et al., 2021) and business model design elements (Kulkov, 2023) to signal the increasing interest towards this aspect. Indeed, McDonald and Eisenhardt (2020) put forward a framework called Parallel Play, and a set of principles (Konietzko et al., 2020), which model the decision-making process and the action followed by the entrepreneur in effectively designing business models.

A clear takeaway from this strand is the limited number of studies that integrate and combine multiple methods and tools to support startups throughout their journey and empirically test their effectiveness.

To conclude, we would like to point out that these articles are quite recent, to signal the importance that in the last decade academic literature has given to the application of these tools to support startup entrepreneurs in envisioning their future, thus increasing the chance of survival. This aligns with the data in Table 2, where articles from this stream appear only twice among the twenty most cited articles by total citations but appear much more frequently when considering those with the highest average citations per year. Indeed, according to Bortolini et al. (2018), equipping entrepreneurs with a structured set of practices useful to recognize their market, to find their customers and validate their business idea is fundamental, since this lack of knowledge and competence is recognized as one of the major causes of startups failure.

Table 5
Summary of the articles belonging to "Entrepreneurial tools and methods" strand.

Article	Tool/Method	Level of Analysis	Method
Morecroft et al. (1991)	System Dynamic Modelling	Firm	Qualitative *(Top management team discussion, primary data, 1 biotechnology startup)*
Cosenz (2017)	System Dynamic Modelling	Firm	Qualitative *(Single case study, primary data, Italian nascent company)*
Cosenz and Noto (2018a)	Dynamic Business Modelling	Firm	Quantitative (*Simulation based on a case study, secondary data, Italian start-up)*
Cosenz and Noto (2018b)	Dynamic Business Modelling	Firm	Quantitative *(Simulation based on fictional data)*
Ruggieri et al. (2018)	Canvas	Firm	Qualitative *(Multiple case study, primary and secondary data, 15 startups)*
Bortolini et al., 2018	Lean Approaches	Firm	Literature review *(Systematic literature review)*
Ghezzi (2019)	Lean Approaches	Firm	Mixed-method *(Survey and founders' interviews, primary data, 227 startups)*
Felin et al. (2019)	Lean Approaches	Firm	Conceptual paper *(Critical analysis and conceptual review)*
Ghezzi and Cavallo (2020)	Lean Approaches	Firm	Qualitative *(Multiple case study, primary and secondary data, 3 startups)*
Silva et al. (2020)	Lean Approaches	Firm	Literature review *(Systematic literature review)*
Da Luz Peralta et al. (2020a)	Lean Approaches	Firm	Mixed-method *(Survey and single case study, primary data, 1 Brazilian startup and 33 customers of the startup)*
Konietzko et al. (2020)	Lean Approaches	Individual	Quantitative *(Design science, primary data, 21 startups)*
Da Luz Peralta et al. (2020b)	Lean Approaches	Firm	Literature review *(Systematic literature review)*
Bocken and Snihur (2020)	Lean Approaches	Firm	Conceptual paper *(Conceptual reasoning)*
Ghezzi (2020)	Lean Approaches	Firm	Qualitative *(Multiple case study, primary and secondary data, 3 startups)*
Silva et al. (2021)	Lean startup tools	Firm	Qualitative *(Multiple case study, primary and secondary data, 9 startups)*
Mansoori and Lackeus (2019)	Multi-Tools/Methods	Firm	Conceptual paper *(Critical analysis and conceptual review)*
Corbo et al. (2020)	Continuous Validation Framework	Firm	Conceptual paper *(Conceptual reasoning)*
García-Gutiérrez et al. (2016)	Innovation Pivot Framework	Firm	Conceptual paper *(Conceptual reasoning and 1 illustrative application example)*
McDonald and Eisenhardt (2020)	Parallel Play	Individual	Qualitative *(Multiple case study, Primary and secondary data, 5 new ventures)*
Christodoulou et al. (2024)	A framework for integrating sustainability into business models	Firm	Qualitative *(Managers' interviews, primary and secondary data, 4 startups)*
Kulkov (2023)	Business model design farmwork	Firm	Qualitative *(Multiple case study, primary data, 9 startups)*
Slávik et al. (2022b)	Model of strategic balance	Firm	Qualitative *(Interview based survey, primary data, 147 startups)*
Varma and Dutta (2022)	Guidelines for startup survival	Firm	Qualitative *(Single case study, primary data, food-tech startup)*
Nunes et al. (2022)	Sustainable value exchange matrix	Firm	Qualitative *(Multiple case study, primary data, 2 startups)*
Brecht et al. (2021)	A framework that serves as a guideline for tailored business experiments	Firm	Qualitative *(Design science and single case study, primary data, German startup heliopas.ai.)*

4. Discussion and future research agenda

4.1. Key insights on the research strands

Our structured literature review on the identification and exploitation of opportunities as well as on the definition of the strategy and business model to survive in competitive markets in the startups' context made it possible to organize the literature along four main strands.

More specifically, the "Antecedents of startups survival and success" strand enhances researchers' and practitioners' understanding of the various factors influencing startup survival and success, with particular attention to their roles and interrelationships in shaping these outcomes. While this stream provides a deep and detailed analysis, capturing specific determinants and relationships affecting survival, it falls short of offering a comprehensive picture that connects these variables holistically. The second stream, "Startups archetypes," moves beyond fine-grained analysis and recognizes the existence of recurring patterns, understood as templates that represent typical startup business models and strategies. By offering a simplified depiction of the phenomenon, this stream provides practical insights that are more readily applicable. Whereas these first two strands tend to adopt a static perspective, the third stream, "Startups evolution and adaptation", introduces a temporal dimension, examining the developmental trajectory of startups over time. By considering strategy adaptation and decision-making processes throughout startup development, this approach offers a nuanced understanding of startup dynamics, helping them navigate uncertainty and evolve more effectively. While all three of these streams enhance our understanding of the topic, they do not offer direct application tools or methodologies for addressing specific challenges. In this regard, the final stream, "Entrepreneurial tools and methods", focuses on equipping researchers and practitioners with concrete frameworks, methodologies, and instruments to define startups' strategies and design their business models.

Fig. 5 integrates the main findings of the structured literature review. Overall, insights from our literature review, on the one hand,

might support entrepreneurs on their venture creation and subsequent survival, and on the other hand, they offer scholars an overarching picture, research can depart from to further deepen the quest of startup creation and survival.

4.2. Research direction opportunities to be deepened and explored: an overarching perspective

Analysing the temporal evolution of the four strands (Fig. 6), it emerges that the "Antecedents of startup survival and success" strand is the oldest and most dominant, with a steady increase over the years. In contrast, the "Entrepreneurial methods and tools" strand saw a significant rise between 2017 and 2020, driven particularly by the emergence and application of the Lean Startup method. More recently, the 'Startups archetypes' strand has flourished, gaining considerable momentum. Finally, the attention to "Startups evolution and adaptation" process seems quite stable since 2013, despite the limited number of total contributions.

Indeed, this last strand seems to deserve more attention, as startups face fundamental challenges related to envisioning their future, creating and capturing value, and continuously adapting their strategy and business model over time. The proposed tools and methods can be applied at various stages of startup development or combined throughout this journey, depending on the specific challenges and needs startups encounter. For example, the prescriptive approach of Lean startups, the flexibility of effectuation, or the structured and creative planning of design thinking can be particularly suited to different steps of startup development, sometimes suggesting an alternative approach and other times a combined one. We believe there is ample opportunity to further explore these issues.

The singling out of distinct research strands paves the way for a clearer positioning of future research, aiming to build a more robust, tightened, and coherent body of knowledge within each strand. However, this also opens new research perspectives, particularly that of cross-strand research. Our considerations outlined above have highlighted the strengths of each strand. By combining research methods and research questions typical of each strand, we can achieve more comprehensive research efforts. For example, researchers could investigate whether and how the combined use of entrepreneurial methods impacts startups' survival and growth and explore the design of new solutions and methods to address practical problems in the field, using a "design science approach" and drawing on results on antecedents while adopting an evolutionary perspective. Furthermore, to advance management theory and its practical applicability, we believe that applying a design science approach as a methodology might be beneficial since it can merge relevance and rigor and thus bridge the gap between theory and practice. Design science aims to develop knowledge that can be used in designing solutions to solve practical problems in the field in question: artifacts and general prescriptions for a class of practical problems can be advanced by studying the intended context of application. We expect that developing "scientific knowledge to support the design of interventions or artifacts by professionals" (Aken, 2004) might contribute to making progress in the management theory in the context of startups and at the same time provide a huge contribution to the managerial environment.

When looking at the level of analysis (Fig. 7), it emerges that most of the articles are focused on the firm level. Articles, which adopt a multi-level perspective mainly, belong to the strand "Antecedents of startup survival and success", suggesting that similar approaches remain underexplored in other strands. Finally, network-level analysis appears less common, with only a limited number of studies focusing exclusively on this level or integrating it with others.

Given the fundamental role that the network or ecosystem of relationships established by the entrepreneur or top management team plays in equipping new ventures with the resources and knowledge they need, there are still a number of open questions that deserve further investigation (Aaboen et al., 2013; McGrath et al., 2021). In particular, it remains to be explored how new ventures engage in network development, how startups perceive their network contexts and consequently behave, and specifically how they interact with external actors in order to "get up and running." Moreover, it is important to investigate whether the role a startup plays within the ecosystem influences its chances of survival, as well as how the configuration of the ecosystem in which the startup is embedded impacts its business model design and subsequent changes. In addition, the few articles that focus on networks tend to adopt

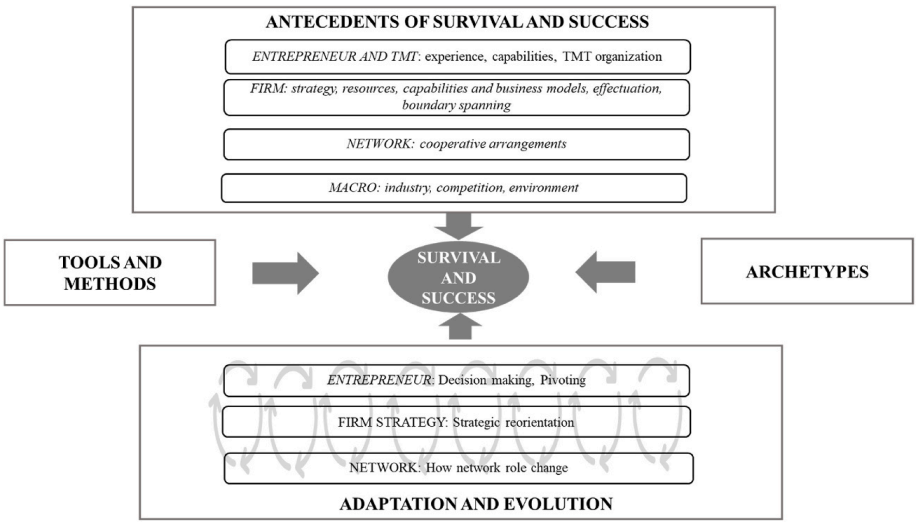

Fig. 5. Summary of the main findings of the literature review.

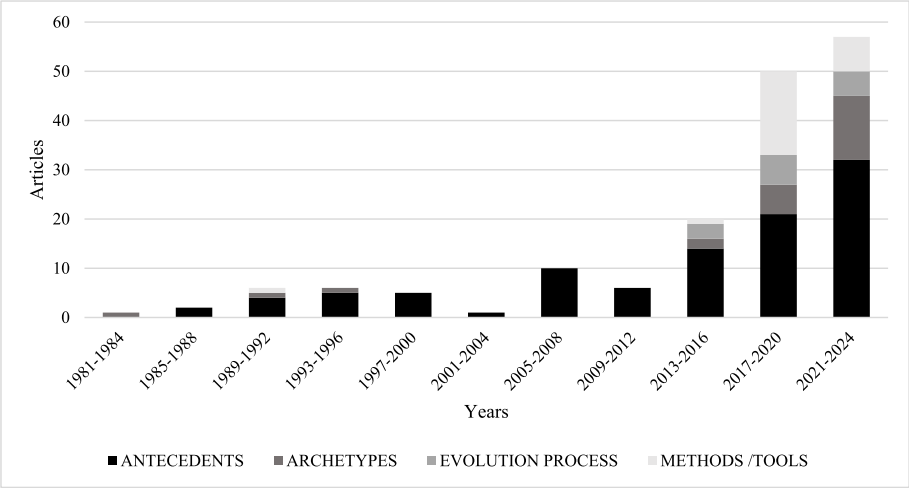

Fig. 6. Temporal distribution of the four identified strands.
Note: ANTECEDENTS ("Antecedents of startups survival and success"); ARCHETYPES ("Startups archetypes"); EVOLUTION PROCESS ("Startups evolution and adaptation"); METHODS/TOOLS ("Entrepreneurial methods and tools").

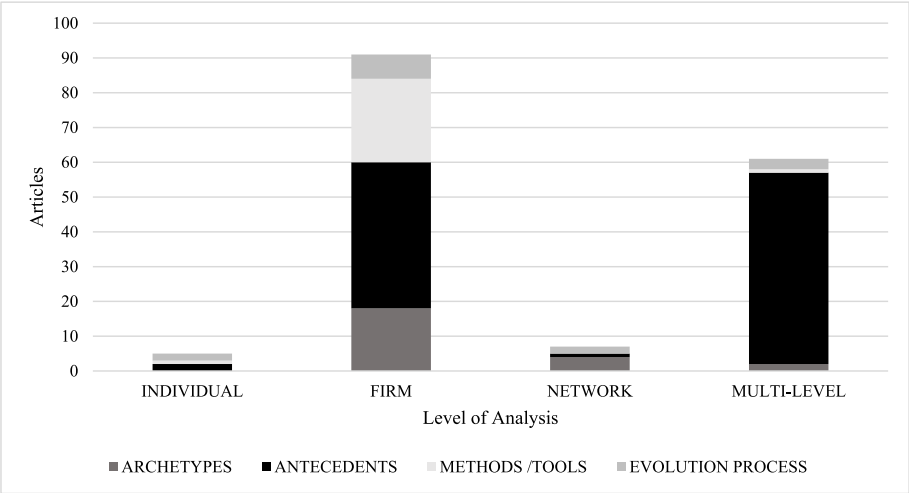

Fig. 7. Articles' distribution based on strand and level of analysis.
Note: ANTECEDENTS ("Antecedents of startups survival and success"); ARCHETYPES ("Startups archetypes"); METHODS/TOOLS ("Entrepreneurial methods and tools"); EVOLUTION PROCESS ("Startups evolution and adaptation").

the startup as the primary unit of observation, rather than the ecosystem or the network itself, thus providing only the startup's perspective; future research might broaden the scope by giving voice to each actor involved.

4.3. Deeping the current debate and opening new research directions: a within strand perspective

In this subsection, for each of the identified strands we first unveil the research opportunities to be deepened and then the unexplored areas that deserve investigation.

Within the strand of "*Antecedents of startups survival and success"*, there are few papers that clearly declare the phase (formation, founding, and growth) when startups' data are collected; since the new venture development, particularly in the case of technological startups, might last several years, temporal conditions place limitations on the generalizability of the tested propositions. In addition, as emerged from Fig. 3, there are few studies that deal with the role of networks and ecosystems in the survival and growth of startups.

In terms of overlooked areas of investigation, the specific changes in startups' strategy, organization and business model could be more accurately captured by longitudinal surveys (rather than cross-sectional). Indeed, according to Whetten (1989), we encourage scholars "to think about whether their theoretical effects vary over time, either because other time-dependent variables are theoretically important or because the theoretical effect is unstable for some reason". On the same line, there is room to further identify combinations of variables leading to high growth and high profitability, combinations leading to low growth and low profitability, and combinations stimulating one (growth or profit) at the detriment of the other (Debrulle et al., 2020).

Regarding articles focused on *startups archetypes*, in the past years, there has been a significant effort in proposing business strategy,

business model and network strategy archetypes. In addition, literature on the theme still falls short of putting forward taxonomies at the level of network, depicting the role the new venture might play in it. This theme may be particularly relevant for technological startups, as they often depend on resources within their ecosystem. This is especially true for digital platform business models, where value creation occurs beyond firm boundaries and emerges through the facilitation and management of exchanges among various actors.

What seems to be missing are archetypes that simultaneously integrate strategy, business model aspects, and network elements. We encourage scholars to explore this topic and to empirically assess whether the archetypes proposed in the literature are truly helpful in supporting startup entrepreneurs in envisioning their future. The practical utility of these archetypes in entrepreneurial action, together with their industry specificity, are crucial aspects that deserve further exploration.

The same holds true when we come to the strand focused on network *startups evolution and adaptation*: As for the other articles within the evolution stream, most of them show that business model adaptation, pivoting and strategic re-orientation are crucial to enabling these new companies to survive in extremely dynamic environments; often the boundaries between the entrepreneur and the company are blurred as in these contributions the issue of entrepreneurial action and new venture strategic re-orientation are jointly discussed. There is still room to further deepen this area, developing a multi-level analysis that considers both the entrepreneur/top management team and the new venture. From a methodological point of view, we encourage scholars to adopt a multi-level perspective, which embraces the entrepreneur's action, as well as the firm and the network level. Finally, there are few papers within this strand that examine the use and the efficacy of different entrepreneurial methods (effectuation vs causation logic) along startups' development process; future research might shed light on this issue, showing for example whether and how the different methodological approaches might differ in the different life stages, between technological and non-technological startups, explorative and exploitative projects. In this perspective, Aaboen et al. (2013), for example, focus on the adoption of effectuation and causation approaches in different development stages of different startups; future research might deepen this issue by adopting a longitudinal perspective. Furthermore, analyzing whether the use of effectuation and causation logic, even combined, alongside the venture development stages influence startups' survival is worth investigating.

As regards underexplored areas of investigation, shedding light on how new ventures perceive their network context and how they interact over time with the various counterparts (Aaboen et al., 2013) as well as how their network, both from a structural, cognitive and relational point of view, changes along time is paramount. Of particular benefit would be longitudinal analysis of how strategy and business model co-evolve along the opportunity discovery, ideation and enactment phases; providing an overview of how entrepreneurs deal with seeking and exploiting opportunities, while strategically orientating and aligning the business model, would contribute to link the current fragmented streams of research. All in all, we encourage scholars to deepen the theory of change in the context of startups, paying attention to the following elements (Parastuty et al., 2015): elements that lead to change (what), the relationship between these factors (how); the explanation about these relationships (why) and finally the temporal (when) and contextual factors (where, who) which "set the boundary of generalizability" (Whetten, 1989). According to Parastuty et al. (2015), the established theories of change that might support scholars in their investigation refer to the following: Institutional theory, Contingency theory, Strategic choice theory, Resource dependency theory, Behavioral theory, Organizational learning theory, Resource based theory, Evolutionary theory. From this perspective, several challenging issues emerge related for example to how entrepreneurial learning progressively shapes and transforms the entrepreneur's approach to strategy and business modelling. In addition, research should explore the potential impact of dynamic capabilities and ambidextrous orientation on the overall development process of startups, as these elements may significantly influence their adaptability and long-term success.

Coming now to the last strand of *entrepreneurial methods and tools*, as stated by Silva et al. (2020), lean startup approaches "gained significant momentum within the entrepreneurial community at a global level, and to date, it is by far the most widespread approach to pragmatically support startup development". However, there is still room for deepening certain aspects such as implementation issues, barriers to use, boundaries and contextual conditions. There are only scant guidelines to support entrepreneurs in the application of LSA tools in their daily work, but also there are a set of methods that, even mention, they are not deepened. Future research can also investigate how the different methods frame and apply in different industries and contexts, characterized by different levels of uncertainty.

As regards new research opportunities, this body of knowledge is almost silent about design thinking and discovery-driven planning, even though they can offer interesting applications in the uncertain context of startups. In addition, Mansoori and Lackeus (2019) suggest that "to advance beyond the current state of entrepreneurial methods, researchers need to recognize entrepreneurial methods as a legitimate field of scholarly inquiry". In this perspective, the author suggests adopting an integrated approach, where different methods are put together into "more comprehensive meta-methods" that "are both theoretically-driven and empirically-tested" (Mansoori and Lackeus, 2019, p. 812). We think that the integration of different methods and tools is an interesting and promising issue that might support startups in their journey and increase their chance of survival; it could offer an opportunity to make the entrepreneurial process more unambiguous, understandable, teachable, and successful.

Table 6 summarizes the key insights, along with the research areas that require further investigation or that present new and still underexplored directions, both at the overall level and within each specific research strand.

5. Conclusions, implications and limitations

The review of the literature carried out by this article can bring a contribution to the recent debate on startups' survival, which has captured the attention of both academic scholars and practitioners. As stated in the introduction, we look at the phenomena, framing the discussion within the broader context of three key areas of knowledge: entrepreneurship, business strategy, and business models. A

startup could be thought of as an atomic unit seeking to create and capture value, developing a product, service or solution addressing a complex market need (Silva et al., 2020). Typically, entrepreneurs venture with some rudimentary concepts in mind and with a rough idea of the business model, as well as limited resources to deal with (Bortolini et al., 2018). In this context, even though entrepreneurs have their deliberate strategy in mind, while experimenting with the business model, they redirect their initial strategy also based on the results of the business model testing. Business model is not seen as a static configuration of organizational elements and activity characteristics, but it evolves quickly along startups' development. Business model and strategy are strongly intertwined in this context: the former defines the organization's configurational enactment of a specific opportunity, while the second refers to the process of optimizing the effectiveness of that configuration (George and Bock, 2011), and both dynamically and fast change along the first years of startups development. The entrepreneur simultaneously exploits the opportunity while trying to search and establish a competitive advantage. From a theoretical point of view, this article contributes to organizing and framing the multidisciplinary, fragmented and scattered literature on the field. We think that providing an overarching picture of the topic from one side prevents future research from the risk of proceeding in different silos and, and from the other side, encourages scholars to contaminate different bodies of knowledge and their main theories. In this way, we answer the recent call of Guo et al. (2020) and McDonald and Eisenhardt (2020), who outline the need in the startup context to adopt a strategic view of business model design, which is critical for their survival.

Table 6
Summary of the key insights and research directions.

Strands	Core insight	Questions to be deepened	Questions to be explored
Overall view	Extensive and fine-grained understanding of the specific elements that influence startups' survival. Initial understanding of the evolution and adaptation process of startups and their entrepreneurs. Growing attention to archetypes and entrepreneurial methods and tools to support startups in defining their strategy and business model. Most of the articles are focused on the firm level (often investigated with other levels)	• How do startups perceive their network contexts and consequently behave? In particular how do they interact with the external actors in order to "get up and running"? • How does the configuration of the ecosystem in the startup impact its business model design and change?	• To what extent can cross-strand research be conducted to leverage the strengths of each strand? • To what extent can new solutions and methods be designed to address practical problems in the field by adopting a design science approach that builds on literature findings on antecedents and incorporates an evolutionary perspective?
Antecedents of startups survival and success	Understanding of the various factors and determinants influencing startup survival and success, with particular attention to their roles and interrelationships in shaping these outcomes.	• Are the results generalizable across the startup's evolution phases (formation, founding, or growth)? • How do networks and ecosystems influence startup survival and growth, and what specific mechanisms play a critical role in this process?	• Do the theorized relationships between antecedents and outcomes vary over time, either due to the influence of time-dependent variables or because the theoretical effects are inherently unstable? • What combinations of antecedents and contextual factors drive high-growth versus high-profitability trajectories in startups, and to what extent do trade-offs emerge between the two?
Startups' archetypes	Identification of recurring patterns, understood as templates that represent typical startup business models and strategies	• What is the specific utility of archetypes for entrepreneurial actions? How can this utility be augmented? • Are there any specific startup networks and/or ecosystem archetypes?	• Are there specific archetypes based on the interplay between strategy and/or business model and/or network? • How do the industry specificity issues matter the generalizability and applicability of archetypes?
Startups' evolution and adaptation	Understanding the evolution trajectory of startups over time, with particular reference to strategy adaptation and decision-making processes throughout startups development	• To what extent do effectuation and causation approaches differ in their impact across the various stages of startup development, and how do these differences manifest between different contexts? • How do business model adaptation, strategic reorientation, and entrepreneurial action interact across individual, firm, and network levels to influence the startups' evolution?	• How do startups' interactions with their networks co-evolve with their strategic choices and business model configurations throughout the entrepreneurial process? • How can the theory of change be integrated in this strand?
Entrepreneurial methods and tools	Equipping researchers and practitioners with concrete frameworks, methodologies, and instruments to define startups' strategy and design their business model	• How is design thinking used to figure out startup's strategy? • How do barriers, boundaries, and contextual contingencies affect the implementation and strategic relevance of Lean Startup approaches across different entrepreneurial environments?	• To what extent is the integration of different methods useful for figuring out startups' strategy and business model and what methods' combination is the most supportive for their survival and growth? • How can methods be integrated into a comprehensive, theoretically grounded and empirically validated framework to better support startup development?

We finally identify promising paths for future research considering each single strand and at the overall level; we expect that being focused on startups, which are characterized by liabilities of newness and limited resources, this study can valuably contribute to the creation of a consistent body of knowledge specifically dedicated to these companies that have different problems and behaviors in comparison to incumbents.

This study has also some interesting practical implications. The key message of embracing both the strategic and business modeling perspective while figuring out business opportunities might be of interest for different actors, such as entrepreneurs, business angels, and policy makers. At the same time, the article offers entrepreneurs a representation of the startup journey, which is far away from being a sequential and linear path that leads to success, but it is a hard and intricate path, studded from pivoting decisions, where archetypes and entrepreneurial methods and tools might come to support.

Finally, this article has some limitations. First, the large number of articles, while allowing us to frame and organize the literature on the field, prevents us from a deep investigation of each single strand. Further studies can deepen single strand, such as for example the entrepreneurial tools and methods in the context of startups, whose systematization and integration can provide entrepreneurs with enhanced means to increase startups' survival chance. Second, due to the focus on this article, we excluded articles that deal with startup financing and internationalization; future studies might integrate these issues with the identified strands.

Ethics Statement

Not applicable because this work does not involve the use of animal or human subjects.

Declaration of competing interest

The authors declare no conflict of interest.

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