



# Entrepreneurs' actions and venture success: a structured literature review and suggestions for future research

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Accepted: 23 May 2022  
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**Abstract** It is the actions of entrepreneurs that give rise to new organizations. However, a comprehensive understanding of what entrepreneurs do and what actually leads to venture success is currently lacking. To summarize existing research, we conduct a structured literature review including 59 empirical articles linking entrepreneurs' behavior to venture success. We define "actions" as discrete units of "doing" that can—potentially—be observed by others and "success" as firm-level success measured by firm status (e.g., firm survival) or performance (e.g., sales). More than half of the included articles are based on data from the Panel Study of Entrepreneurial Dynamics (PSED), but there are also important "stand-alone" studies. We analyze the "what," the "how," the "how much," and the "when" of entrepreneurs' actions that lead to venture success. In addition, we integrate the view of entrepreneurship as an evolutionary process. The analysis reveals that studies typically analyze "what" entrepreneurs but less often

"when" and "how much" and rarely "why," "how," and "what else" they do. Based on our findings, we develop a six-point research agenda. Specifically, we argue that future research should strive to understand the motives behind entrepreneurs' actions, consider how entrepreneurs conduct activities, and what kind of business ideas they are working on. Also, applying alternative measurements and capturing a more complete picture of what entrepreneurs do when starting a business but also aside from their venturing efforts might contribute to a better understanding of the relationship to venture success.

**Plain English Summary** Research linking the actions of entrepreneurs to the success of their venture is insufficient and can benefit from innovative research approaches. Though it is actions of entrepreneurs that give rise to new organizations, we still lack a comprehensive understanding of what entrepreneurs do that actually leads to venture success. To address this issue, we conduct a structured literature review of 59 articles. We find that studies typically analyze "what" entrepreneurs do, but less often "when" and "how much" and rarely analyze "why," "how," and "what else" they do. Based on our findings, we develop a six-point research agenda which recommends that future research should seek to understand why and how entrepreneurs take certain actions, and analyze the fit between the business opportunity pursued and the actions taken. Our study is intended to

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stimulate new theoretical developments and empirical research for a more comprehensive understanding of the relationship between actions and success.

**Keywords** Entrepreneurship · Actions · Behavior · Success · Systematic literature review

**JEL Classification** L25 · L26 · M13

“Given that entrepreneurs play an important role in new venture creation, just what is it that they do?”. (Baron, 2007, p. 168).

## 1 Introduction

Entrepreneurship is about actions based on promising business ideas and aspirations (Davidsson, 2015; McMullen & Shepherd, 2006). From the development of new products and services to the marshaling of the necessary resources and hiring new employees, it is actions that give rise to new organizations (Bird & Schjoedt, 2009). Understanding what entrepreneurs do and how their actions relate to successful new venture creation is therefore a central research topic in the field of entrepreneurship. The importance of the entrepreneur in the development of ventures is underscored by the following quote from Frese, van Gelderen, and Ombach (2000, p. 1): “The pervasive influence of founders on their firms and their dominance in making decisions make it possible to assume a high degree of equivalence between the individual and the organizational levels of analyses.” However, understanding the link between entrepreneurs’ actions and venture outcomes is challenging because it is not only entrepreneurs’ actions and strategies that determine the evolution of their ventures, but also the fit between what entrepreneurs do and the environment (Martinez et al., 2011).

The quest for systematically understanding business creation activities and their relation to business emergence started in the early 1990s. Following Gartner’s (1988) call, researchers increasingly investigated entrepreneurs’ behaviors to better understand what entrepreneurs do and what it is they do that makes ventures successful (e.g., Alsos & Ljunggren, 1998; Duchesneau & Gartner, 1990; Gatewood et al., 1995, for an overview of key developments in the

research on the new venture creation process, see Davidsson & Gruenhagen, 2021).

Broadly speaking, two streams of research emerged on entrepreneurs’ actions and their link to venture success. First, there are studies based on data from the Panel Study of Entrepreneurial Dynamics (PSED),<sup>1</sup> a large-scale, longitudinal research program to enhance our understanding of how people start businesses and similar studies that follow the PSED methodology (e.g., Brush et al., 2008a, b; Kim et al., 2015; Lichtenstein et al., 2007). Second, there is a more diverse set of “stand-alone” studies that analyze the link between entrepreneurs’ actions and success employing various research designs (Chandler & Lyon, 2009; Duchesneau & Gartner, 1990; Westhead et al., 2005). Both sets of studies have their advantages and disadvantages. Research following the PSED procedure entails random sampling of entrepreneurs and standardized interview techniques, including a pre-defined set of items used to capture specific actions. Studies based on this methodology greatly increased our understanding of “nascent entrepreneurship”, a phenomenon that was mostly uncharted territory before. For example, PSED-based studies disclosed the extreme heterogeneity of nascent entrepreneurship with huge differences regarding entrepreneurs’ characteristics, their actions, or duration of the venture gestation process (Davidsson et al., 2011). However, the focus on representative sampling, allowing generalizability at the level of the population, and the high quality of data in terms of research design, come at a cost: PSED samples of business founders are numerically dominated by a “modest majority” (that is a majority of nascent entrepreneurs aiming to start a small business or becoming self-employed, often lacking innovative business ideas or growth ambitions) and are characterized by great heterogeneity in terms of characteristics of the founders and their ventures (Davidsson & Gordon, 2012). Presumably, this heterogeneity is one of the reasons why PSED-type studies struggle to identify clear behavioral patterns leading to venture emergence or success (Arenius et al., 2017; Reynolds, 2016).

<sup>1</sup> Information about this research program, a documentation of the data collection, and the data sets can be found on the program homepage: <http://www.psed.isr.umich.edu/psed/home>. For an overview of PSED I and PSED II, see Reynolds (2007) and Reynolds and Curtin (2008).

In contrast, studies in the second group typically select a much narrower sample of new firms, suited to their specific research question. This allows more detailed and contextualized insights, for example, by closely examining how the knowledge-acquisition activities of venture team members are related to venture performance (Chandler & Lyon, 2009). However, the often smaller sample sizes and cross-sectional study designs typically limit generalizability and pose a greater risk of biased results.

While both sets of studies use different sampling approaches, they still investigate the same phenomenon: What do entrepreneurs do to make their business successful? Yet, a lack of convergence between these two research streams makes it difficult to identify common results. To increase our understanding of how entrepreneurs' behavior is linked to venture success, we conducted a structured literature review (SLR), including articles from both research streams mentioned above.

In our search for answers to the above questions, we proceed as follows. First, we briefly explain our view of entrepreneurs' actions and the evolutionary nature of entrepreneurship; a view that will inform our SLR throughout. Second, we discuss the origins of the behavioral approach to the study of entrepreneurship. We then summarize the current state of research on the relationship between entrepreneurs' actions and success by conducting an SLR following the procedure suggested by Tranfield et al. (2003) and Denyer and Tranfield (2009). We report what we know about the "what," the "how," the "how much," and the "when" of entrepreneurs' actions. Finally, we develop a research agenda to encourage new theoretical developments and empirical investigations that could lead the field to a more comprehensive understanding of the link between entrepreneurs' actions and success.

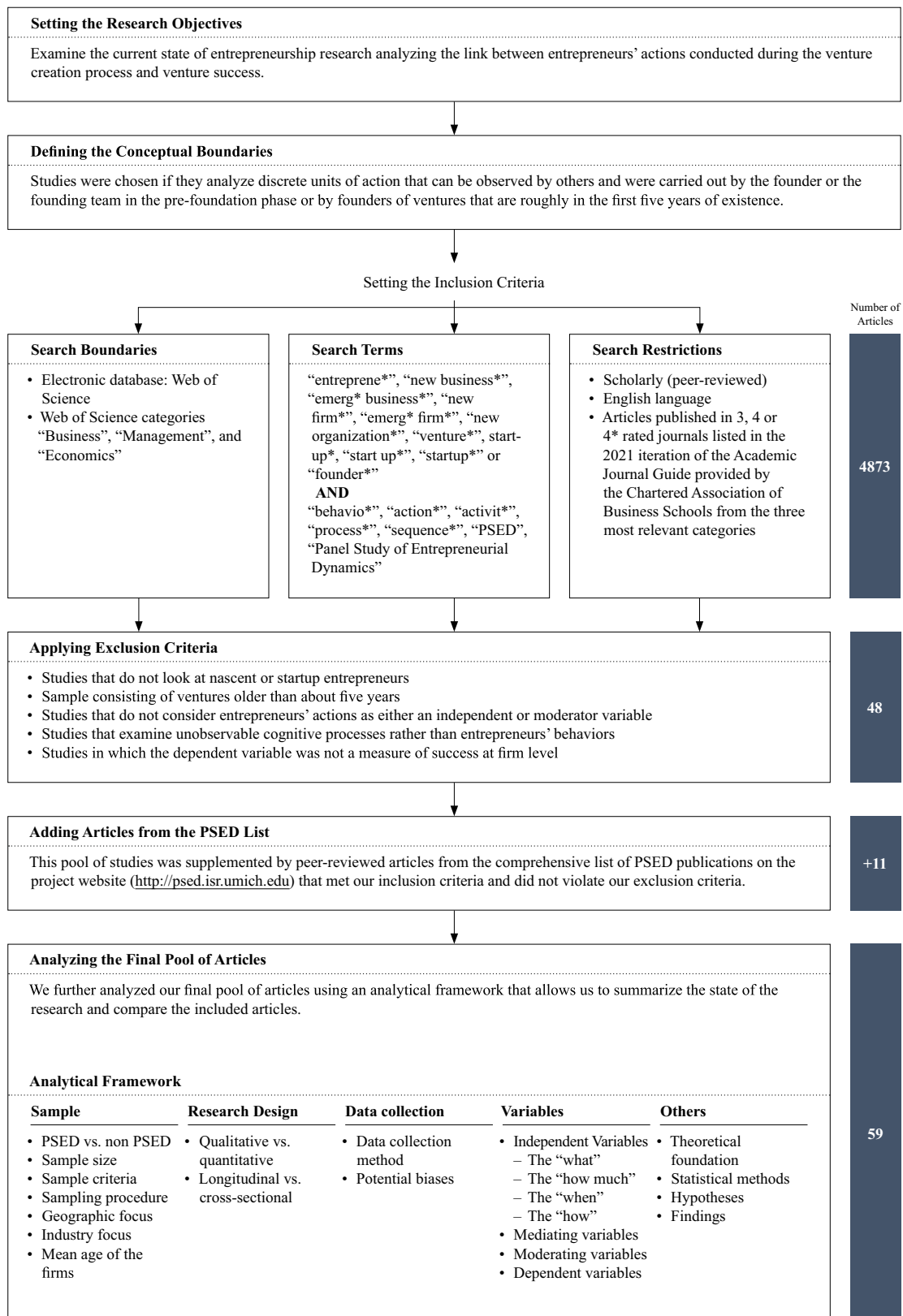
## 2 Theoretical foundations

Entrepreneurship involves "doing" and is fundamentally about the behavior of individuals (Gartner & Teague, 2020). Academic research on entrepreneurs' actions is concerned with the study of human behavior that involves creating and developing new venture organizations (Bird & Schjoedt, 2009). Within the scope of our study, we investigate individual-level

actions that are—at least theoretically—visible or auditory and can be distinguished from invisible cognitive processes. In the general theory of work psychology, entrepreneurs' actions have been defined as goal-oriented behaviors (Frese & Zapf, 1994). In research on entrepreneurs' behavior, the three terms—behavior, action, and activity—have frequently been used interchangeably (Bird & Schjoedt, 2009; Carter et al., 1996). Therefore, we consider all three terms when searching for relevant literature and also use the three terms interchangeably in this paper.

The behavioral approach to the study of entrepreneurship was first promoted by Gartner (1988), who argued persuasively that, rather than looking for specific traits that distinguish entrepreneurs from non-entrepreneurs, research should focus on the process by which new organizations are created and, more specifically, on what entrepreneurs do. His article initiated a shift from a focus on the entrepreneur to an increased interest in behavioral and process-related aspects (Landström et al., 2012). However, the theoretical literature on entrepreneurs' actions and the founding process seems unbalanced. While there are a number of theoretical approaches which aim at explaining *why* individuals act on a perceived opportunity (e.g., Krueger et al., 2000; McMullen & Shepherd, 2006) and also numerous theories on the behavior and characteristics of existing firms and their relation to growth and success (Baum et al., 2001; Covin & Slevin, 1991; Nason & Wiklund, 2018), there is scant theorizing on what occurs in between, that is, what exactly entrepreneurs *do* and how these actions are related to the successful development of new firms. Such theorizing is challenging because it must establish a link between actions on the individual level and success on the level of new organizations (Davidsson & Wiklund, 2001).

What does exist are frameworks that describe what entrepreneurs do on a high-level of abstraction. For example, Katz and Gartner (1988) identify four properties of emerging organizations: entrepreneurial intention, assembling resources, creating organizational boundaries (for example, by establishing a corporation), and exchanges of resources across organizational boundaries. Their framework suggests that entrepreneurs must ensure that all four properties are sufficiently present to establish a new firm. Extending this framework, Brush et al. (2008b) argue that the resource dimension should also include intangible



◀**Fig. 1** Summary of the structured review process

resources, such as knowledge and social capital, and that (actions which lead to) organizational legitimacy should be added to the framework, quasi as a necessary fifth property. A further framework is provided by Shane (2003) in his “General Theory of Entrepreneurship,” in which he describes the entrepreneurial process in a linear way, whereby the decision to exploit an opportunity is followed by the acquisition of resources, the formation of an entrepreneurial strategy, and organizing activities. Yet, while all these frameworks provide an overall idea on the nature of the entrepreneurs' actions, few if any theorize on what exactly entrepreneurs do to successfully establish a new organization, that is, what is missing is an understanding of the micro-foundations of entrepreneurs' actions (Shepherd, 2015).

In addition, existing frameworks only partly capture the evolutionary nature of entrepreneurship. Entrepreneurship can be viewed as an evolutionary process; i.e., environmental conditions influence the relationship between entrepreneurs' actions and strategies and outcomes. Thus, it is not only what entrepreneurs do that determines the evolution of new ventures but “rather the fit between strategies and environments” (Martinez et al., 2011, p. 1). Ultimately, this view increases the demand for research in this area: “This added complexity means that we only achieve relevant and generalizable knowledge about entrepreneurial endeavors if investigators design research that takes account of the dynamic context in which entrepreneurial processes occur.” (Martinez et al., 2011, p. 1). To capture dynamic context, researchers can, for example, develop research designs that consider “time” (e.g., by accounting for period effects, age effects, or cohort effects), “space” (e.g., by distinguishing specific geographic units such as countries, regions, or communities) (Martinez et al., 2011), or the “environment” (e.g., by accounting for market dynamism or intensity of competition) (Gruber, 2007; Newbert, 2005) as contextual dimensions. In our literature review, we highlight existing research that succeeds in capturing the evolutionary nature of entrepreneurship.

### 3 Method

We conducted the structured literature review following the procedure suggested by Tranfield et al. (2003) and Denyer and Tranfield (2009), distinguishing six steps as described in Fig. 1.

#### 3.1 Establishing the pool of candidate papers

We selected articles analyzing the link between entrepreneurs' actions conducted during the venture creation process (individual level) and venture success (firm level). To identify relevant studies, we first established the conceptual boundaries of the phenomenon of interest: “entrepreneurs' actions” and “venture success.” Regarding “entrepreneurs' actions,” we followed Bird and Schjoedt's interpretation and focused on articles analyzing “discrete units of action that can be observed by others” (2009, p. 328). We included studies irrespective of the “hierarchical level” or “granularity” on which they captured actions. We selected studies that analyze actions carried out by the founder or the founding team of ventures that are not yet profitable or by founders of ventures that are roughly in the first 5 years of existence. While there is no objective criterion as to how long ventures can be considered as “new,” a period of (roughly) five years has been used in a number of previous studies (Brown & Hanlon, 2016; Hofer & Bygrave, 1992; Ireland & Webb, 2007). We assume that startups up to an age of five years share some properties of an emergent organization (e.g., ventures in both groups are frequently not yet profitable). In addition, we only considered articles that examine entrepreneurs' actions as either an independent or moderator variable.

Next, we established the boundary conditions for the term “success” in the context of new ventures. In recent years, entrepreneurship researchers have used a variety of different measures to evaluate new venture success. These range from objective firm performance and growth metrics to more subjective measures such as respondents' feelings about whether their start-up goals have been achieved (Frese et al., 2000). For the scope of our analysis, the dependent variable

had to be a measure of success at firm level.<sup>2</sup> This included variables indicative of performance on the market, such as venture emergence or persistence, sales, or profitability, while excluding intermediate successes or milestones, such as success in raising capital or launching a product innovation.

To identify relevant studies, we attempted to find a combination of search terms that included all three defining elements of our SLR: (a) entrepreneurs or firms in the pre-start up and startup phase, (b) concepts pertaining to actions, and (c) measures of success. Through an initial exploratory approach, we found that the terms used to describe the success of a firm vary widely. To minimize the risk of overlooking relevant articles, we decided to drop the third set of success-related keywords and instead conducted a manual selection process following the database search to ensure that we included all articles that make a connection between entrepreneurs' actions and firm success, as explained below. After several iterations, we were able to identify the most commonly used terms and combined them in the following Boolean search approach: "entreprene\*" OR "new business\*" OR "emerg\* business\*" OR "new firm\*" OR "emerg\*fir\*" OR "new organization\*" OR "venture\*" OR "start-up\*" OR "start up\*" OR "startup\*" OR "founder\*" AND "behavio\*" OR "action\*" OR "activit\*" OR "process\*" OR "sequence\*" OR "PSED" OR "Panel Study of Entrepreneurial Dynamics."

We used the terms "new/emergent business," "new/emergent firm," "new organization," "venture," and "start-ups" because they are commonly used in entrepreneurship literature to refer to early stage businesses (e.g., Duchesneau & Gartner, 1990; Newbert et al., 2013; Reynolds & Miller, 1992). To capture articles about actions, we also included "behavior" and "activity" as they are often used as synonyms (Bird & Schjoedt, 2009). We added "process" or "sequence" since articles aiming to link actions and success are often following a procedural view or focus on the chronological order of entrepreneurs' actions (Alsos & Kolvereid, 1998; Liao & Welsch, 2008). In addition, since studies based on the PSED

data set frequently capture entrepreneur' actions, we also included "PSED" and "Panel Study of Entrepreneurial Dynamics."

To conduct the search, we used the Web of Science field tag "topic" which includes titles, keywords, and abstracts. To ensure the search would result in a high quality of articles but would still be manageable, we restricted our search to articles published in journals rated 3, 4, or 4\* listed in the 2021 iteration of the *Academic Journal Guide (AJG)* provided by the *Chartered Association of Business Schools (ABS)*. We focused on ABS-ranked journals from three categories: (1) "Entrepreneurship and Small Business Management"; (2) "General Management, Ethics, Gender and Social Responsibility"; and (3) "Strategy." We found these categories comprised the most relevant journals for our research question. In total, we searched 34 journals, including leading entrepreneurship and management journals such as *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, *Small Business Economics*, *Journal of Small Business Management*, *Academy of Management Journal*, *Strategic Management Journal*, and *Journal of Management*. The search was refined by using the Web of Science categories "Business," "Management," and "Economics" and restricting document type to "articles" and "review articles." The result of the search was a list of 4873 articles. We excluded articles that were selected only because they contained the terms "interaction" or "organizational behavior." In order to cover all existing research, we did not limit our search by year of publication.

### 3.2 Establishing the final pool of articles

We then engaged in a screening process to identify the articles that established a link between entrepreneurs' actions (on the individual level) and success (on the firm level) as defined in our boundary conditions. To align and refine our understanding of the boundary conditions and exclusion criteria, three of the authors independently screened titles and abstracts of more than 200 articles in three rounds. In between rounds, we discussed discrepancies on the inclusion/exclusion criteria of articles and, in cases of doubt, examined the full text of the article. After this "training phase," each article was independently screened by two researchers. Again, we discussed and resolved discrepancies.

<sup>2</sup> We did not include articles that measure success at the individuals' level, for example, in the form of life satisfaction or job satisfaction.

We included articles that compare actions of different groups of entrepreneurs (e.g., first-time versus serial entrepreneurs) as “borderline cases,” since these studies allowed us to compare differences in action and success across different groups of entrepreneurs. Furthermore, studies that analyze entrepreneurs' action but did not link it to firm level success were excluded (e.g., papers linking actions to success in new product development). It was also important that the actions on which the article focused were theoretically observable. We therefore excluded articles that focus on cognitive processes such as decision-making. We also excluded studies that determine “general behavioral orientations” without reference to actual or observed behavior. For example, if entrepreneurs were asked to complete an effectuation scale designed to capture whether the entrepreneur *generally* used effectuation or causation principles, we excluded the paper. Since our study focuses on new venture creation, we also excluded articles for which the mean of the company age was above roughly five years. This elaborate selection process substantially reduced the pool of studies to 48 articles fitting our criteria.

This pool of studies was supplemented by eleven peer-reviewed studies from the comprehensive list of publications using PSED data published on the project website (<http://psed.isr.umich.edu>) that also analyze the relationship between entrepreneurs' actions and venture success. These articles were not identified in the main search either because they appeared in journals that were not part of our journal selection or because they did not include our search terms. For example, some authors mentioned the specific activity they focused their research on (e.g., “business planning”) but did not mention an overarching term such as “activity” or “action.” In addition, a lot of PSED-based studies did not include “PSED” in either the abstract or the keywords. Our final pool of papers comprised 59 articles.

### 3.3 Data analysis

Based on the topics and types of variables found in the articles, we developed an appropriate framework to group and analyze the various aspects of each article, including the research objective, research design, data collection methods, variables, and other information. Figure 1 gives an overview of the analytical

framework. For each article, two of the authors independently completed the analytical framework. Discrepancies were then discussed and adjusted accordingly. In capturing the independent variables, our analytical framework distinguishes between studies that focus on the types of actions entrepreneurs conduct (i.e., the “what”), how they conduct them (i.e., the “how”), the intensity or duration with which they conduct them (i.e., the “how much”), and finally the timing (i.e., the “when”). We felt that this analytical framework was appropriate because most articles focus mainly on one of the above aspects. When reporting on the results, we tried to report carefully when the research included more than one focus. In addition, we have highlighted research that succeeded in accounting for the evolutionary nature of entrepreneurship by including aspects such as environment, context, or timing, and report on this in the following subsections.

The distinction between the “what,” the “how,” the “how much,” and the “when” is similar to the “5 W’s (and one H)”, commonly used in journalism to adequately describe a situation, which can be traced back to the seven circumstances (quis, quid, quando, ubi, cur, quem ad modum, quibus adminiculis) described by Aristoteles (Sloan, 2010).

## 4 Results

Table 1 provides an overview of all 59 articles included in the SLR, with the first articles appearing in the 1990s. The articles were published in sixteen different journals, with four journals publishing five or more studies: *Journal of Business Venturing* (16 studies), *Journal of Small Business Management* (eleven studies), *Small Business Economics* (nine studies), and *Entrepreneurship Theory and Practice* (six studies). Of the 59 articles, 34 are based on PSED-type data, while 25 are “stand-alone” studies. Thirty-nine articles, all PSED studies plus five other studies (Gatewood et al., 1995; Carter et al., 1996; Tornikoski & Puhakka, 2009; Benett & Chatterji, 2019; Walsh & Martin, 2021), are based on samples of nascent entrepreneurs only. All other studies are based on young business owners, a mix of nascent entrepreneurs and young business owners, or left the status of the entrepreneurs in the sample unclear. In terms of research design, 52 studies follow

**Table 1** Analyzing the link between entrepreneurs' actions and success: overview of studies

	What							How	How much	When				Success			Main findings
	Planning	Market	Legitimacy	Physical resources	Financial resources	Information resources	Network resources	Resources for product dev.	Total time	Time and effort (groups of actions)	# of actions	Timing (individual actions)	Sequence	Temporal Concentration	Survival / Disbandment	Emergence	
<b>1990s (10 studies)</b>																	
Duchesneau and Gartner (1990), <i>JBV</i>	•									○					■		Entrepreneurs that started successful new ventures were more likely to identify a business idea that is clear and broad, use a procedural and comprehensive planning process, spend more time planning, generate a broad plan which recognizes all of the functional areas, undertake market research, and seek professional advice.
Gatewood, Shaver, and Gartner (1995), <i>JBV</i>	○	○	○	○	○	○	○			•					■		Activities that focused on setting up business operations distinguished entrepreneurs who were successful at getting into business from those who were not.
Olson and Bokor, <i>JSBM</i> (1995)	•															■	The performance of small, rapidly growing firms is influenced by the interaction of planning formality and product/service innovation.
Zhao and Aram (1995), <i>JBV</i>							•			○						■	High-growth firms had a greater range and a greater intensity of networking than low-growth firms.
Carter, Gartner, and Reynolds (1996), <i>JBV</i>	•		○	•	•				○	•	•	•		■	■		Nascent entrepreneurs who were able to start a business undertook activities that made their businesses tangible to others.
Peters and Brush (1996), <i>JBR</i>					•	•										■	Differences in scanning behavior of the market environment is related to growth, especially in manufacturing firms.
Alsos and Ljunggren (1998), <i>JEC</i>	○	○	○	○	○	○				•	•	•		■	■		There are only few gender differences in the start-up process. Women do not have a lower start-up probability than men.
Alsos and Kolvereid (1998), <i>ETP</i>	○	○	○	○	○	○				•	○	•		■	■		Compared to novice and serial founders, parallel founders are more likely to start a business; they carry out more activities but take more time.
Gartner, Starr, and Bhat (1999), <i>JBV</i>	○	○		○	○	○				•						■	Devoting more effort to two activities was beneficial for venture survival: (1) working with established suppliers or subcontractors, (2) analyzing potential new entrants. Also, devoting less effort to determining the identity of the business was beneficial for venture survival.
Reid (1999), <i>SBE</i>	•				•				○	○						■	The rapid repayment of debt and the willingness to sacrifice short-run profit for growth are crucial actions to stay in business.
<b>2000s (24 studies)</b>																	
Frese, van Gelderen, & Ombach (2000), <i>JSBM</i>	○									•						■	The chosen action strategy predicts entrepreneurial success and failure, e.g., a reactive strategy was negatively related to firm success, a critical point strategy was positively related to firm success. A combination of critical point and opportunistic strategies seemed most successful.
Van Gelderen, Frese, and Thurik (2000), <i>SBE</i>	○									•						■	The chosen action strategy predicts entrepreneurial success and failure, e.g., reactive strategies lead to less success and failure leads to reactive strategies, thus creating a downward spiral.
Delmar and Shane (2003), <i>SJM</i>	•				○											■	Business planning reduces the hazard of new venture disbanding.
Delmar and Shane (2004), <i>JBV</i>	•	•	•	•	•		•									■	Two behaviors, establishing a legal entity and completion of a business plan, both lower the likelihood of venture disbanding.
Honig and Karlsson (2004), <i>JOM</i>	•															■	Writing a formal business plan has no statistically significant effects on whether a firm survives and becomes profitable.
Shane and Delmar (2004), <i>JBV</i>	•	•								○	•					■	Organizing efforts in which entrepreneurs completed business plans before talking to customers and beginning marketing or promotion had a lower hazard of termination than other organizing efforts.

a quantitative research design, four studies use a qualitative research design, and three studies follow a mixed methods approach. Forty-two studies are longitudinal studies (32 PSED, 10 non-PSED), and 17 are cross-sectional studies.

Figure 2 provides an overview of when the articles were published. It can be seen that the peak of publications occurred in the periods 2005–2009 and 2010–2014, with half of all articles published in these 10 years. Therefore, we believe that now is a good

time to take stock of what has been achieved and hopefully encourage some new research efforts in the field.

Below, we summarize the main results of these studies. When reporting results, we often mention the number of articles based on PSED data. Because PSED-based studies all use the same type of underlying data set—with its advantages and disadvantages—we believe that this information is relevant to the reader. Furthermore, if most studies on a given

**Table 1** (continued)

	What							How	How much	When	Success	Main findings					
	Planning	Market	Legitimacy	Physical resources	Financial resources	Information resources	Network resources						Resources for product dev.	Total time	Time and effort (groups of actions)	# of actions	Timing (individual actions)
Liao, Welsh, and Tan, (2005), <i>JHTMR</i>	●	○	○	○	○	○				●	○	●	●		■		Firm gestation is a complex, nonlinear process, in which developmental stages are hardly identifiable.
Newbert (2005), <i>JSBM</i>	●	○	○	○	○		○	○	○						■		Market dynamism affects the complexity and characteristics of the new firm formation process.
Nicholls-Nixon, Cooper and Wood (2000), <i>JBV</i>							○		●							■	Performance of young firms in less hostile environments is more likely to benefit from frequent strategic experimentation compared to young firms in more hostile environments.
Van Gelderen, Thurik, and Bosma (2006), <i>SBE</i>	●							○							■	■	The effect of writing of a business plan is different for those with limited and high ambitions.
Westhead, Ucbasaran, and Wright (2005), <i>JSBM</i>					●											■	Portfolio entrepreneurs were more likely to express dimensions of entrepreneurial behavior, though no difference in performance was found.
Ensley, Pearce, and Hmieleski (2006), <i>JBV</i>							●									■	Transactional leadership is less efficacious the more dynamic the environment. Transformational leadership behavior is more efficacious the more dynamic the environment.
Liao and Gartner (2006), <i>SBE</i>	●									○					■		Writing a business plan significantly increases the likelihood of venture persistence, irrespective of the venture context.
Menzies et al. (2006), <i>IEMJ</i>	○	○	○	○	○		○	○	○							■	There are few differences between male and female nascent entrepreneurs. The number of gestational activities completed is the largest predictor of operating success.
Parker and Belghitar (2006), <i>SBE</i>	●			○	●			○	○						■	■	Nascent entrepreneurs are much more likely to make a transition to actual entrepreneurship if they have established credit with suppliers and received some money from nascent operations already.
Gruber (2007), <i>JBV</i>	●	○				●		○								■	In highly (less) dynamic environments, entrepreneurs will get most value from planning when they focus on select planning activities, and speed up the planning task (pursuing a munificent approach).
Liao and Gartner (2007), <i>JSBS</i>	●									○	○				■	■	Engaging in business planning increases the probability of venture emergence, whereby the greater the degree of business plan formalization the more likely it is that the venture will emerge.
Lichtenstein et. al. (2007), <i>JBV</i>											●	●			■		Organizational emergence is associated with a higher rate of organizing activities, a lower concentration of organizing activities, and an average timing that was later in the overall process.
Tornikoski and Newbert, (2007), <i>JBV</i>	○	○	●	●	○	●										■	Legitimacy behaviors are more important than “conforming legitimacy” (educational and professional experience of the lead entrepreneur and the team) for venture emergence.
Brush, Edelman, and Manolova (2008a), <i>JSBM</i>							○									■	In the early stage, there are processes and routines that home-based businesses engage in that lead them to achieve first sales in a timelier manner than those businesses that are located away from home.
Brush, Manolova, and Edelman (2008b), <i>JBV</i>	○		○	●	●						○	○		■			All four properties of Katz and Gartner (1988) are necessary for firm survival in the short term. Organizing is not a pattern or linear process but rather is simultaneous, messy, and iterative.
Chandler and Lyon (2009), <i>ETP</i>				○	●											■	Participation in vicarious/search-and-notice knowledge-acquisition activities is strongly and significantly related to venture performance.
Ozcan and Eisenhardt (2009), <i>AMJ</i>						●				○						■	Executives are more likely to originate high-performing portfolios when they visualize their portfolios in the context of the entire industry as opposed to a series of single ties and when they simultaneously form ties with multiple partners.
Tornikoski and Puhakka (2009), <i>IJESB</i>				●		●			●	○						■	Only active behaviors make a statistically significant impact on firm emergence, while initial conditions do not.

topic are based on PSED data, this may help us identify relevant research gaps that may be filled by studies that look more closely at how or why entrepreneurs implemented certain actions.

#### 4.1 The “What”

Our analysis begins with the type of entrepreneurs' actions. Following Delmar and Shane (2002) and Liao and Welsh (2008), we allocated the different

actions into four categories: planning, legitimacy establishment, market, and resource transformation.

##### 4.1.1 Planning

Planning refers to the strategic coordination of “activities at the early stage of venture creation” (Liao & Welsh, 2008, p. 105). In our SLR, 37 studies (including 25 PSED studies) investigate the influence of planning activities on venture success. Of these, 17

Table 1 (continued)

	What						How	How much	When	Success	Main findings						
	Planning	Market	Legitimacy	Physical resources	Financial resources	Information resources	Network resources	Resources for product dev.	Total time	Time and effort (groups of actions)		# of actions	Timing (individual actions)	Sequence	Temporal Concentration	Survival / Disbandment	Emergence
<i>2010s (22 studies)</i>																	
Dimov (2010), <i>JMS</i>	•													■	■		Opportunity confidence not only positively affects venture emergence but also mediates the effects of entrepreneurial experience and early planning on venture emergence.
Edelman and Yli-Renko (2010), <i>ETP</i>															■		Entrepreneurs' opportunity perceptions mediate between objective characteristics of the environment and the entrepreneurs' efforts to start a new venture.
Newbert and Tornikoski (2012), <i>SBE</i>							•	•		○					■		There is a positive and direct influence of the content and the governance of networking on venture emergence. There is no direct influence of supporter network size or the frequency of interaction.
Renko, Kroeck, and Bullough (2012), <i>SBE</i>									○	○					■	■	All types of valence, instrumentality, and expectancy are related to nascent entrepreneurs' intended effort; which is, over time, positively related to operative firm status.
Hechavarria, Renko, and Matthews (2012), <i>SBE</i>	•														■	■	Having a more formalized business plan and higher self-efficacy contributed to maintaining in a start-up effort versus quitting among nascent entrepreneurs.
Honig and Samuelsson (2012), <i>JSBM</i>	•											○				■	We found that neither formal planning nor changes in the business plan increased venture-level performance.
Katre and Salipante (2012), <i>ETP</i>	•	•		○	○	•	•								■		While the higher-level organizing tasks and activities of successful and struggling social ventures appear to be similar, fine-grained analyses show stark differences.
Manolova, Edelman, Brush, & Rotefoss (2012), <i>SBE</i>	○	○	○	○	○		○			•		•		■			The number and concentration of organizing efforts are positively associated with the likelihood of continuing the organizing effort. Also, three properties of emerging organizations (intentionality, boundary, exchange) had a positive effect on continuing the organizing effort.
Rotger, Gortz, and Storey (2012), <i>JBV</i>					•									■	■		Taking part in a guided preparation program contributes to the survival and size of new ventures, but its impact on growth remains less clear.
Newbert, Tornikoski, and Quigley (2013), <i>JBV</i>						○		•		○		•			■		The study finds that venture emergence becomes more likely the more heterogeneous the strength of a nascent entrepreneur's network of ties to supporters becomes over time.
Zhang et al. (2013), <i>SEJ</i>	•															■	Formal and informal planning can benefit new ventures, whereby informal planning seems to be more influential for new firm in emerging economics like China.
Hiatt and Sine (2014), <i>SJM</i>	•							•							■		Higher levels of incremental planning did not positively affect firm survival, but comprehensive planning did, however, with a marginally declining rate. Effects of entrepreneurial planning on venture survival is contingent to violence and the resulting uncertainty and environmental change.
Honig and Samuelsson (2014), <i>JBV Insights</i>	•	○	○	○	○										■		Business planning has no relation to survival over five and ten years. Instead of planning helping venture development the causality is reversed: well advanced firms undertake formal planning.
Hopp and Sonderegger (2015), <i>JSBM</i>										○	•	•			■		A later temporal timing (but not rate or concentration) of organizing activities enhances the probability of successfully founding.
Kim, Longest, and Lippmann (2015), <i>JBV</i>										○	•					■	Leisure-based founders were slower to accomplish activities early on but exhibited steady progress and were more likely to achieve revenues and profitability.
Brown and Hanlon (2016), <i>JSBM</i>	○	•		•	•	○	○			○						■	Nine behavioral dimensions were identified, all of which could be clearly linked to the performance of firms.

examine the specific action of preparing a business plan, while the remaining 20 examine business planning as a broader construct. Moreover, four studies examine the timing of planning activities and another three relate planning to a specific venture environment. Thus, some of this research recognized that entrepreneurship is an evolutionary process in which the environment and context plays an important role.

**Preparing a business plan** Preparing a business plan is one of the most frequently investigated and widely endorsed determinants of startup planning in academic research (Honig & Karlsson, 2004). However, in the empirical studies in our sample, what is considered a “business plan” varies widely, ranging from a mental idea to an elaborate physical document (Katre & Salipante, 2012; Zhang et al., 2013).

**Table 1** (continued)

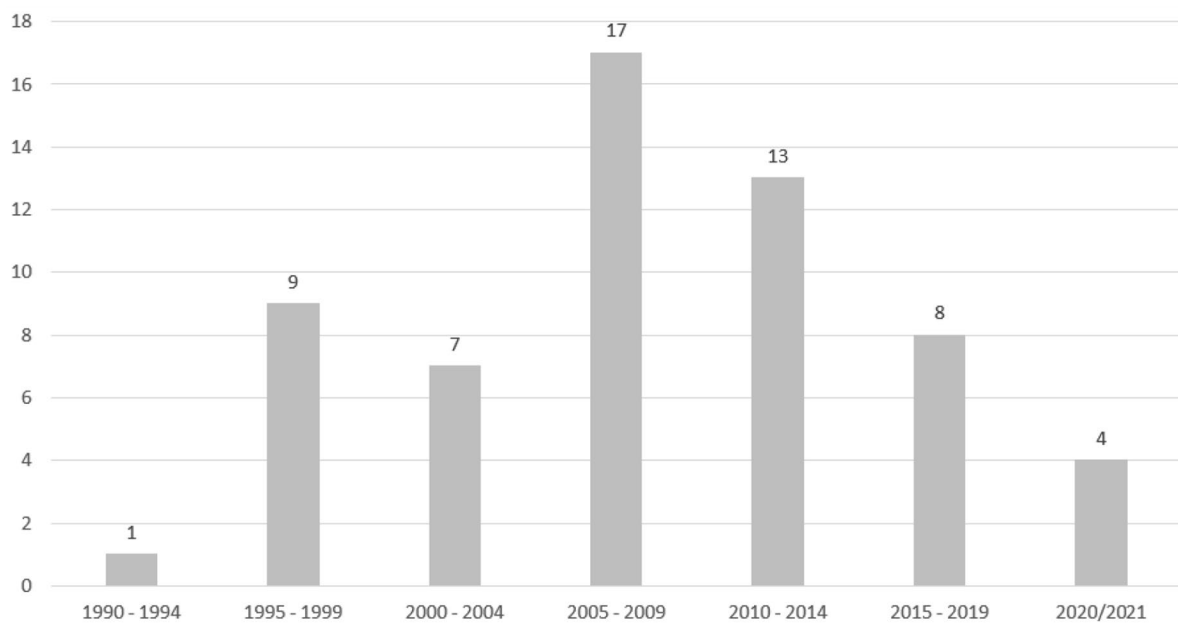
	What								How	How much			When			Success			Main findings
	Planning	Market	Legitimacy	Physical resources	Financial resources	Information resources	Network resources	Resources for product dev.	Total time	Time and effort (groups of actions)	# of actions	Timing (individual actions)	Sequence	Temporal Concentration	Survival / Disbandment	Emergence	Performance		
Arenius, Engel, and Klyver (2017), <i>JBV Insights</i>	○	○	○	○	○							●					■	No particular gestation activities are necessary. Only a low number of gestation activities is necessary for reaching initial profits.	
Greene and Hopp (2017), <i>SEJ</i>	●								●								■	Founders are more likely to achieve venture viability if they formally plan.	
Hopp and Greene (2018), <i>JMS</i>	●									●		●	○				■	A plan completed early in new venture development increases venture viability. The relationship is contingent on plan duration and synchronization with other activities.	
Bennett and Chatterji (2019), <i>SMJ</i>	○	○	○		○	○	○	○				●					■	Exploration of an idea was more commonly stopped because of difficulties of obtaining financing or challenges to profitability than because of information about competitors or own skills.	
Tian, Yang, and Wei (2019), <i>JSBM</i>			●									●					■	The relationship between speed to register a business and nascent ventures' performance is best reflected by an inverse U-shape, i.e., nascent entrepreneurs suffer from being either too fast/early or too slow/late in legal registration.	
<b>2020s (4 studies)</b>																			
Klyver and Arenius (2020), <i>ETP</i>							●	●		●							■	Frequent networking with close social ties increases (decreases) entrepreneurs' chances of business launch when they have high (low) social skills. Networking with weak ties increases chances of business launch regardless of social skills.	
Hmieleski and Cole (2021), <i>JOM</i>																	■	We find that the relationship of intrateam abusive behavior (i.e., "hostile" verbal behaviors) with new venture performance is mediated by new venture team thriving.	
Walsh and Martin (2021), <i>JSBM</i>							○	●									■	Relational leadership allows social capital development which enhances persistence among very early-stage nascent entrepreneurs.	
Yang, Hughes, and Zhao (2020), <i>JSBM</i>				●													■	Applying an effectuation approach to conduct resource combination activities positively influences new ventures growth.	
<b>Total number</b>	37	17	15	19	19	14	13	8	9	7	12	16	13	9	6	23	25	23	
<b>Focus of study</b>	24	4	3	7	6	5	8	2	9	0	6	6	8	5	5				

○ Items included but not focus of the study ● Focus of the study ■ Chosen success measure

**Journal abbreviations:** *AMJ* = Academy of Management Journal; *ETP* = Entrepreneurship Theory & Practice; *IEMJ* = International Entrepreneurship and Management Journal; *IJESB* = International Journal of Entrepreneurship and Small Business; *JBR* = Journal of Business Research; *JBV* = Journal of Business Venturing; *JBV Insights* = Journal of Business Venturing Insights; *JEC* = Journal of Enterprising Culture; *JHTMR* = The Journal of High Technology Management Research; *JMS* = Journal of Management Studies; *JSBM* = Journal of Small Business Management; *JSBS* = Journal of Small Business Strategy; *JOM* = Journal of Management; *SBE* = Small Business Economics; *SEJ* = Strategic Entrepreneurship Journal; *SMJ* = Strategic Management Journal

In addition, there is a heated debate about whether or not writing a business plan is conducive to venture success (Delmar & Shane, 2003; Honig & Karlsson, 2004). While the value of writing a business plan is often taken for granted in entrepreneurship education literature (Edelman et al., 2008), our literature review provides a more nuanced picture and shows that whether writing a business plan is beneficial to venture emergence or venture success is contingent to certain factors. Of the 17 (13 PSED) studies investigating the relationship between writing a business plan and venture success, seven (6 PSED) find a positive relationship to venture success, one PSED article finds opposing correlations depending on the ambition level of the entrepreneur, and nine find no correlation (8 PSED). The study design of PSED may be one of the factors that accounts for these inconclusive results. Firstly, given that the PSED sample data set

includes all types of entrepreneurial activities from part-time hobby entrepreneurs to highly motivated entrepreneurs with a growth aspiration, having a business plan may be a proxy for entrepreneurs' commitment, rather than real value being derived from the business plan (van Gelderen et al., 2006). Second, since PSED studies typically use business emergence as a measure of success, one should consider the possibility that writing a formalized business plan is merely an indicator of legitimacy (e.g., entrepreneurs might write a business plan when applying for a bank loan or competing for an award) and thus a prerequisite for venture emergence. In addition, four studies (out of seven examining the concept) find that more than just having a business plan, the degree of formalization of the business plan is important (Greene & Hopp, 2017; Liao & Gartner, 2007; Olson & Bokor 1995; Zhang et al., 2013). This suggests that it not



**Fig. 2** Number of published papers over time

only matters whether or not entrepreneurs engage in writing a business plan but also *how* they go about it. In addition to the “how” of business planning, the “why” may also be of interest. As suggested previously, while having a general sense of direction is important to venture success, writing an elaborate business plan to solely satisfy the needs of potential investors may not necessarily improve the probability of venture success (Honig & Karlsson, 2004).

**Timing** There is some evidence to suggest that the timing of business planning activities may be important (Carter et al., 1996; Hopp & Greene, 2018; Liao et al., 2005; Shane & Delmar, 2004). For instance, Shane and Delmar (2004) suggest that completing a business plan before talking to customers and beginning marketing or promotion efforts decreases the hazard of termination. Hopp and Greene (2018) find that there is an inverse u-shaped relationship between new venture viability and the length of time spent on a formal business plan and Carter et al. (1996) find that entrepreneurs still in the process of starting their business dedicate more time to preparing a plan as opposed to those who stated that their venture had already emerged, suggesting that too much

planning potentially has an adverse effect on venture emergence.

**Environmental context** In addition to the timing of planning activities, the environmental context is an important mediator to consider when examining the relation between planning behavior and venture success. For example, the findings of Gruber (2007) and Newbert (2005) provide partial support for the hypothesis that at high levels of market dynamism (i.e., the frequency to which technologies change in the market) nascent entrepreneurs successful in creating new firms are more likely to write a business plan. Similarly, Liao and Gartner (2006) find that early planning increases the likelihood of new ventures persistence in situations with perceived high financial or competitive uncertainty, while the opposite is true in situations of perceived high financial and competitive certainty.

We conclude that while much research has been done to explore the relationship between business planning and venture success, the results do not provide a uniform picture. Instead, the results suggest that the benefits of business planning depend on aspects such as timing, quality, motivations, and circumstances. This confirms previous research findings

suggesting that contextual factors significantly influence the planning-performance relationship (Brinckmann et al., 2010). Thus, investigating *how* and *why* entrepreneurs write a business plan and how the environment and timing of activities may affect the relationship are promising research approaches (Carter et al., 1996; Gruber, 2007; Honig & Karlsson, 2004).

#### 4.1.2 Legitimacy

Nascent entrepreneurs who are about to start a company carry with them a “liability of newness” (Stinchcombe, 1965). Actions signaling that the new venture is legitimate (e.g., applying for and receiving an award or a patent; business registration) can change the perception of external actors and help overcome this liability. Fifteen studies, twelve of which were PSED studies, include items linked to legitimacy. However, most of these studies treat legitimacy only in passing. Only three articles put legitimacy behavior into the focus of their theoretical reasoning and analysis, with one of them showing a positive relationship to venture emergence (Tornikoski & Newbert, 2007) and the other showing that legitimacy behaviors lower the likelihood of venture disbanding (Delmar & Shane, 2004). The third study (Tian et al., 2019) suggests that—at least in the Chinese context—there is an optimal time for entrepreneurs to register their business. Overall, however, there are few studies that put legitimacy at the center of their analyses. Therefore, a lack of knowledge on how legitimacy-related actions may influence venture success remains.

#### 4.1.3 Market

Market-related actions (e.g., marketing or promotional efforts) are a precondition for convincing others to buy the new venture's products or services and generate revenue (Delmar & Shane, 2004), and for obtaining feedback from potential customers. Of the seventeen articles (11 PSED) that included items to capture actions related to market products or services, only four explicitly focus on this topic, while it is more of a marginal topic in the other articles. Two of the studies analyze the relation between market-related actions and venture termination (Delmar & Shane, 2004; Shane & Delmar, 2004) and two analyze the relationship between market-related actions

and startup success (Brown & Hanlon, 2016; Katre & Salipante, 2012). All studies but one show a positive effect of engagement in market-related actions. This study finds that starting with marketing increases the hazard of venture disbanding by 86% (Delmar & Shane, 2004). One explanation could be that customer feedback leads to “disillusionment” with the business idea, a possibility that could be interpreted as a positive outcome, as it could save the entrepreneur a lot of resources. Due to the small number of articles and the relatively broad concepts of market-related actions used in the respective studies, it is again difficult to draw overarching conclusions.

#### 4.1.4 Resource transformation

As outlined by Liao and Welsch (2008), “resource transformation is related to activities that acquire and combine human, financial, physical (and) technological resources” (p. 106). Thirty-two articles (18 PSED) include items to capture behaviors related to resource transformation (i.e., resource acquisition and utilization), of which seven do not focus on resource-related behaviors in their analyses. Most studies in this category analyze the effects of one or more individual actions, while four articles build a construct to capture resource transformation behavior and analyze the success relationship at the construct level. These four studies find a positive relationship between different types of resource transformation behaviors and venture success (Brown & Hanlon, 2016; Brush et al., 2008b; Manolova et al., 2012; Yang et al., 2021). Aside from these overarching constructs, there are five different types of specific resources for which related behaviors are frequently examined: physical resources, financial resources, information resources, and network resources, as well as resources used in product development.

**Physical resources** Four out of seven studies on this topic find a significant positive relationship between behaviors related to the acquisition and transformation of physical resources and venture success (Carter et al., 1996; Delmar & Shane, 2004; Tornikoski & Newbert, 2007; Tornikoski & Puhakka, 2009). Although four studies is a rather small number, the existing empirical research suggests that gathering or combining physical resources is an activity that is positively correlated with future venture

success. However, although the empirical evidence points to a positive correlation, no conclusions can be drawn regarding causality.

**Financial resources** Six studies examine the relationship between the acquisition of financial resources and venture success. Three of these articles (Carter et al., 1996; Delmar & Shane, 2004; Parker & Belghitar, 2006) find that seeking and gaining financial resources is significantly positively associated with venture emergence and reduces the hazard of venture disbanding. Seen from the opposite perspective, understanding the difficulty of obtaining financing or becoming profitable might lead people to abandon entrepreneurial efforts (Bennett & Chatterji, 2019). Contrary to these results, Reid (1999) finds a negative relationship between receiving a bank loan and the probability of future venture survival.

**Information resources** Four studies establish a positive relationship between information acquisition activities and venture success. While Chandler and Lyon (2009) find participation in knowledge-acquisition activities to be positively related to venture performance, Peters and Brush (1996) conclude that high-growth ventures gather more information about competitors' strategies and products/services. This suggests that it is not only important whether or not information is being gathered but also that the type of information gathered matters. Besides analyzing the type of information acquired, it can be interesting to consider *how* information is being gathered. Following this line of thought, two studies conclude that venture success is increased when primary and secondary sources of information are used in marketing planning (Gruber, 2007) and when ventures receive guided preparation through counseling (Rotger et al., 2012).

**Network resources** In terms of networking behavior, Tornikoski and Puhakka (2009) find that enlarging networks has a negative effect on firm emergence, while Newbert and Tornikoski (2012) conclude that network growth is positively associated with organizational emergence. This difference may be explained by the different ways in which entrepreneurs network. Newbert and Tornikoski's (2012) research not only examined network growth but also considered the structure, content, and various aspects of networking

governance. Two other studies also investigate the form of networking and show that it plays a role. Zhao and Aram (1995) show that more external relationships and more intense contacts distinguish high-growth from low-growth firms, and Klyver and Arenius (2020) showed that frequent networking with social ties increases the chances of business launch only if entrepreneurs have high social skills. Therefore, *how* entrepreneurs network (i.e., the governance and content of a supporter network) may be much more important for venture success than network size. Two conclusions can be drawn from this line of research: Four studies in our sample show a positive relationship between networking behaviors and success (Katre & Salipante, 2012; Newbert & Tornikoski, 2012; Ozcan & Eisenhardt, 2009; Peters & Brush, 1996), and the quality of networking, i.e., the "how" of networking, matters.

**Product development** The process of transforming resources into a more valuable form is referred to as "product development" (Delmar & Shane, 2004, referring to Nelson & Winter, 1982). Not all companies need to develop a new product; some can rely on an established product offering. But for some companies, a unique product offering is the key to success. Therefore, it seems intuitive to consider product development as an activity relevant to the success of many new ventures. Nevertheless, we identified only eight studies (5 PSED) that included items on product development.

Of these, only two studies place product development at the center of their analysis (Delmar & Shane, 2004; Katre & Salipante, 2012). Katre and Salipante (2012) conclude that successful social entrepreneurs differ from less successful social entrepreneurs in that the former remain actively involved in the development and delivery of products/services to ensure customer satisfaction. Emphasizing a different aspect, Delmar and Shane (2004) postulate, but without being able to prove, that a firm's survival is improved by the speed with which it completes new product development. They further investigate product development as a dependent variable and find a clear indication that completing a business plan and becoming a legal entity increase the likelihood that a venture will complete product development (Delmar & Shane, 2004).

Overall, the “what” section can be summarized as follows: Articles analyzing the effect of behaviors related to legitimacy, the market, and resource transformation on the one side, and venture emergence or venture success on the other, generally find a positive relationship. In contrast, the results of articles analyzing the relationship between planning and success are mixed. Presumably, the results are less clear with respect to planning since planning is usually carried out at an early stage of venture formation. Planning activities could then reveal that an entrepreneur’s venture idea is not as promising as originally anticipated, leading the entrepreneur to abandon the venture. In contrast, activities related to legitimacy, marketing, and the acquisition and combination of resources are usually conducted after an entrepreneur is already reasonably certain that the venture idea is promising. In addition, some of the articles have included the context and environment in which entrepreneurs operate in their studies and have been able to show that this matters (e.g., Gruber, 2007; Newbert, 2005). Other studies were also able to acknowledge an evolutionary- and process-oriented view of entrepreneurship and show that timing matters (e.g., Carter et al., 1996; Hopp & Greene, 2018).

#### 4.2 The “How”

Nine papers in our sample place a focus on the “how,” that is, the manner or the quality in which the respective action is conducted to analyze the link to success. Seven of the papers deal with the “how” of a certain type of activity, namely networking (Klyver & Arenius, 2020; Newbert & Tornikoski, 2012; Newbert et al., 2013), leadership (Ensley et al., 2006; Walsh & Martin, 2021), and planning (Greene & Hopp, 2017; Hiatt & Sine, 2014), while two papers analyze behavioral strategies that can be used more generally to deal with uncertainty (Frese et al., 2000; van Gelderen et al., 2000).

Of all the articles capturing networking behavior, only three analyze *how* networking is done and all find that the “how” actually matters (Klyver & Arenius, 2020; Newbert & Tornikoski, 2012; Newbert et al., 2013). Two articles deal with the “*how*” of leadership behavior. One of them finds that transactional leadership is less efficacious and transformational leadership behavior is more efficacious in more dynamic environments (Ensley et al., 2006).

The other finds that applying relational leadership in developing social capital sources can increase persistence in nascent entrepreneurship via garnering relevant social capital resources (Walsh & Martin, 2021). Two studies deal with the “how” of planning. Hiatt and Sine (2014) show that political and civil violence increases the benefits of incremental (operational) planning and decreases the benefits of comprehensive (strategic) planning. Greene and Hopp (2017) show that formal planners (opposed to informal planners) are more likely to achieve new venture viability.

Two studies address behavioral strategies that can help entrepreneurs cope with uncertainty. Van Gelderen et al. (2000) and Frese et al. (2000) analyze the chosen action strategies and were able to show that the chosen action strategy predicts entrepreneurial success and failure. Both studies show, for example, the negative influence of a “reactive strategy” (being guided by the situation and showing little proactive behavior) on firm success and the positive influence of a “critical point strategy” (starting with the most important point, and planning and acting from this point). Interestingly, the longitudinal nature of van Gelderen et al.’s (2000) study allowed the researchers to suggest which behavioral strategies might be more beneficial at which stage of a company’s life.

Four findings in the studies relating to the “*how*” are worth mentioning. First, the articles show that merely doing something does not necessarily influence venture emergence or success. For example, while, by and large, engaging in networking seems to be beneficial, *how* networking is done can make a significant difference (Newbert & Tornikoski, 2012; Newbert et al., 2013). Second, the “*how*” can be analyzed on different levels. Researchers can either analyze how a certain function is conducted (e.g., how networking or marketing is done), or they can analyze behavioral strategies that can be potentially applied *across* different functions. Third, the fact that only nine studies in our SLR focus on the “*how*” suggests that this aspect of entrepreneurs’ actions is currently still neglected, a point we return to in our research agenda. Fourth, the “*how*” can have different effects in different settings as Ensley et al. (2006) show with regard to leadership behavior and the level of environmental dynamism and Hiatt and Sine (2014) with regard to planning in unstable environments, a finding emphasizing the importance of contingency.

### 4.3 The “How Much”

A further aspect of how actions might influence venture emergence and success is the intensity or duration with which those actions are carried out. Twenty-eight papers in our literature review deal with the link between the “how much” of activities and venture success, either as a main focus of the analysis or as an important control. We identified three different ways in which studies look at this relationship: number of conducted gestation activities, total amount of time spent on startup activities, and time or effort spent on groups of activities. In this section, we do not address research that investigates the “how much” of *individual* activities, as these have already been discussed in the section on the “what” (chapter 4.1).

#### 4.3.1 Number of conducted activities

Due to the considerable diversity of firm gestation processes and the mixed results of studies analyzing the effect of only one or few specific startup activities, as discussed in the previous sections, studies have turned to investigate the relationship between the number of accomplished activities and venture success. The basic idea of counting events in the business gestation process goes back to Reynolds and Miller (1992), who considered four “key events”—principal’s commitment, initial hiring, initial financing, and initial sales—and their prevalence and temporal pattern in the new firm gestation process. The authors show the great diversity in the order or sequence of events and propose first sales as an appropriate indicator of firm birth (i.e., as an outcome variable). Subsequently, the PSED projects considered a much longer list of possible gestation activities, collecting detailed information about whether and when nascent entrepreneurs accomplished them. For most articles in this section, such PSED-type data forms the basis for counting accomplished activities and analyzing the relationship to venture emergence. The unanimous result of these studies is that the number of activities and venture emergence is positively related, independent of the concrete activities included in the summative index. For example, authors stress that the number of completed gestational activities is the “largest predictor of operating success” (Menzies et al., 2006) and “activities play differentiating roles in affecting firm formation” (Liao

et al., 2005, p. 17). Because of the strength of this relationship, subsequent studies frequently include the number of already conducted activities as a control for the amount of effort invested in the new venture (Hopp & Sonderegger, 2015; Kim et al., 2015; Shane & Delmar, 2004). Taking a slightly different approach, the only non-PSED study in this section (apart from Carter et al., 1996) provides a similar result: Tornikoski and Puhakka (2009) analyze participants in a French business plan competition and conclude that the time and effort spent on gestation activities—rather than initial conditions, like competitive advantage or human capital—lead to firm emergence.

Importantly, for nascent entrepreneurs, conducting many gestation activities is not only positively related to firm emergence but also to abandonment when compared to the “still trying” category. Carter et al. (1996, p. 163) argue that “a certain level of effort and activity is necessary to determine success or failure in starting a business.” Therefore, conducting gestation activities is not only helpful in establishing a new venture but also in identifying business ideas that may not be worth pursuing. While the previously discussed literature suggests that “more is better,” Arenius et al. (2017) take the opposite perspective and analyze whether there is a minimum number of gestation activities needed to achieve initial profit. They show that none of the individual 18 gestation activities investigated is a necessary condition for achieving profit 24 months after entry and that even two or three activities can be sufficient to achieve profitability. This finding underlines the large heterogeneity of ventures investigated in PSED-based studies.

#### 4.3.2 How much time in total

Because simply counting accomplished activities is an imprecise measure of “how much” founders do, seven studies consider the amount of time founders invest in their startup—in some cases measured only roughly in terms of differentiating between working full-time or part-time for the venture. Research suggests a positive relationship between starting to work full-time for the business and emergence (Carter et al., 1996; Newbert, 2005; van Gelderen et al., 2006). Interestingly, the relationship between starting to work full-time and business emergence becomes stronger the less time there is between the measurement of the two variables (van Gelderen et al., 2006),

suggesting that the two events frequently take place simultaneously and that the causality behind this relationship is unclear. In other words, nascent entrepreneurs might only decide to fully commit to their new venture and give up other employment when sales or profitability are in sight. Almost all these studies are based on PSED-type data and, thus, investigate nascent entrepreneurs who are working on their venture project but might not be fully committed yet. In this stage, committing fully to the new venture seems to be linked to venture emergence, irrespective of the underlying causality. In contrast, studies that measure the number of hours people invest in their venture do not find a positive link to emergence or success (Reid, 1999; Renko et al., 2012). In the case of Reid (1999), the reason for this “non-finding” might be that he investigates startups at a stage when founders are, by and large, already fully committed; the average working time of the investigated entrepreneurs is already 57 hours per week.

#### 4.3.3 Time spent on groups of activities

This topic is closely related to the “what?” question that we already addressed in a previous section. Here, we focus on groups of activities (instead of single activities). The necessity to group activities into clusters or categories to better understand the entrepreneurial process was recognized early on: As one of the foundational studies of startup behaviors, Gatewood et al. (1995) generated a list of 29 separate activities and grouped them into five categories derived from theoretical considerations. An important result is that entrepreneurs who have been successful in getting into business and those who have not, spend equal amounts of time on activities in the categories of “gathering information,” “estimating profits,” “completing know-how,” and “structuring the company.” However, successful individuals take the next step and spend significantly more time on activities from the category “setting up business operations.” This finding is clearly linked to other research which suggests that discovery activities, relating to the conceptual side of the venture, should be distinguished from exploitation activities, relating to behaviors taken to establish the venture as a real entity (Gordon, 2012, p. ii). Studies suggesting that exploitation activities rather than discovery activities are positively related to venture emergence indeed

exist (Newbert, 2005; Tornikoski & Puhakka, 2009). Yet, Gatewood et al., (1995, p. 386) stress an important point: “Because both successful and unsuccessful entrepreneurs devote nearly the same amount of time to exploring an opportunity (...) the critical difference between success and failure at getting into business, might be the nature of the opportunity itself.” By exploring the idea, some entrepreneurs are able to identify what they perceive as promising opportunities or opportunities that match their skills and abilities, which they then implement by conducting exploitation activities. Thus, conducting exploitation activities might only be sensible if they are based on a promising and tested business idea; or seen from another perspective, success may depend as much on entrepreneurial action as on the underlying business idea entrepreneurs have decided to act on. The results of Gatewood et al. (1995) imply a temporal sequence of types of activities which will be discussed in the next section.

In summary, the articles in the “how much” section suggest that conducting more activities and fully committing to the venture are positively related to venture emergence. Exploitation activities seem to be more important than discovery activities. For most papers in this section, however, the causality between these relationships is unclear because we do not know *why* people choose to fully commit or foster exploitation activities at a given point in time.

#### 4.4 The “When”

In this section, we analyze how the timing, sequence, or temporal concentration of entrepreneurial actions affect venture emergence and success. Studies dealing only with the timing of individual activities are not discussed here, but in the “What” section. Almost all of the investigated 19 papers are based on PSED-type data or the precursor study by Carter et al. (1996). The apparent absence of articles based on other data suggests that detailed information on the timing of activities is a feature of PSED-type data and is available only here. For quite some time now, researchers have tried to identify certain patterns or sequences of individual activities that lead to firm emergence or

firm abandonment. While one of the oldest studies in our sample, based on a rather small number of observations, identified and described differences in the sequence of events between successful entrepreneurs and others (Carter et al., 1996), later studies struggled to identify clear patterns. For example, Liao et al. (2005) failed to uncover any strong relations between the temporal patterns of particular activities and first sales. They only find weak relationships concerning activities relating to “intentionality” and resource acquisition. Overall, they conclude that “firm gestation is a complex, nonlinear process, rather than a simple, unitary accumulation of sequential events” (Liao et al., 2005, p. 17).

Three papers compare the business gestation process between different groups of entrepreneurs. Alsos and Ljunggren (1998) find only few differences in the timing and sequence of activities between men and women and no difference in the probability of succeeding. Parallel founders, who still own another business they have founded before (Alsos & Kolveid, 1998) and leisure-based founders (Kim et al., 2015) conduct only few activities initially but progress steadily and are more likely to be able to start their business than others. Assuming that parallel founders (because of their broader experience) pursue ideas of a higher quality than other founders and that leisure-based founders (because they are doing something they really like) are more committed than others, these results suggest that the type of venture idea pursued also affects the business gestation process and its outcome.

Building on complexity science, two studies investigate the patterns of startup activities of nascent entrepreneurs, specifically their rate, concentration, and timing. Based on PSED I<sup>3</sup> data, Lichtenstein et al. (2007) are able to confirm the hypotheses that firm emergence is more likely when (a) the rate of startup activities is high, (b) startup activities are spread out over time, and (c) startup activities are concentrated later rather than earlier over time. In contrast, based on PSED II data, Hopp and Sonderegger (2015) only find support for the hypothesis concerning timing, that is, a positive effect of a late temporal concentration of activities. The difference in the results might

arise from the fact that Hopp and Sonderegger (2015) but not Lichtenstein et al. (2007) included the total number of conducted activities as a control variable, which is correlated with the rate of activities. The effect of a late temporal concentration of activities could be due to the fact that, at a certain point in time and for various possible reasons, some entrepreneurs start to perceive their business idea as more promising than other entrepreneurs who are not yet fully committed and start to exert more effort, leading to a higher likelihood of firm emergence. Therefore, this result again raises the question of causality.

## 5 Key observations and research agenda

Our analysis of 59 articles has shown the importance of entrepreneurs’ actions for the successful creation of new enterprises. By and large, studies suggest a positive relationship between the conduct and intensity of different types of start-up activities and start-up success. Yet, our analysis has also indicated areas where existing research is only partly coherent and where a comprehensive picture is missing. Also, causality is a major issue for the majority of research in this field. With regard to the coherence of the current body of research, we were able to identify patterns of actions that seem to be conducive for success in some situations or contexts but not in others. For example, most studies in our SLR showed that engaging in resource acquisition is positively related to venture success (albeit, the direction of causality is mostly unclear). However, with regard to business planning, for example, the current state of research does not allow us to identify clear patterns. Regarding comprehensiveness, most studies select certain actions that they examine. Of course, all research has to define what is in its focus. However, considering the complexity of an entrepreneurial endeavor, it is quite reasonable to conclude that, so far, research has been looking at selected pieces of the puzzle, while the big picture is still missing. Sometimes, we might not even know the size of the selected puzzle piece (if we do not know how much time the entrepreneur has invested in the particular activity compared to the total time invested in the venture) or what the puzzle is even about (if the business idea is unknown). Regarding causality, in almost every subsection of our results, we have encountered problems with causality:

<sup>3</sup> For an overview of PSED I and PSED II, see Reynolds (2007) and Reynolds and Curtin (2008).

Is it really entrepreneurs' actions that lead to success? Or do they engage in these actions because past successes have convinced them to commit more fully to the venture? In sum, the situation is rather unsatisfactory: for researchers seeking to advance theory, for practitioners engaged in policy making, and for entrepreneurs looking for advice on what they should do. To move research forward, we propose a six-point research agenda that we hope provides a platform for promising research linking entrepreneurs' behavior and success (see Table 2 for an overview).

### 5.1 Understanding the motives behind entrepreneurs' actions

While many articles in our analysis are able to identify significant relationships between specific activities and venture success, it is frequently unclear what the underlying causality is. For example, are entrepreneurs more successful because they invest more time into their venture or do they invest more time

because first signs of success are showing? We argue that one reason why studies permit no inferences on causality is that we typically do not know *why* people conduct certain activities and why they do so at a certain point in time and not earlier or later. We have defined action as goal-oriented behaviors (Frese & Zapf, 1994), and all actions that our investigated studies look at are directed at starting a new business. However, to better understand the effect of actions, it is important to consider that there is a hierarchy of goals and that actions might be conducted to achieve certain subgoals in the process of starting a successful business (Frese & Zapf, 1994). For example, when founders write a business plan, this action might be geared towards different subgoals. While some argue that entrepreneurs write a business plan on their own initiative (Shane & Delmar, 2004), others argue that they only do so to satisfy institutional demands or to obtain finance (Honig & Karlsson, 2004). A better understanding of the subgoal of conducting a specific action might help to better understand the relationship

**Table 2** Summary of suggested future research

<b>Understanding the motives behind entrepreneurs' actions</b>	<b>Considering how entrepreneurs conduct actions</b>	<b>Acknowledging the "opportunity-action fit"</b>
<p>Research aiming to clarify the causality between entrepreneurs' actions and success by considering why actions are conducted. For example:</p> <ul style="list-style-type: none"> <li>• Investigate why entrepreneurs do what they do</li> <li>• Investigate how reasons for engaging in a particular behavior moderate the behavior-success relationship</li> </ul>	<p>Research aiming to capture the manner or quality of action implementation. For example:</p> <ul style="list-style-type: none"> <li>• Identify how entrepreneurs conduct "overarching" or cross-functional behaviors or critical events</li> <li>• Investigate how entrepreneurs should conduct specific activities depending on the respective context</li> <li>• Consider how entrepreneurs deal with uncertainty, critical incidents, and turning points</li> </ul>	<p>Research considering the fit between ideas and actions as well as between ideas and the entrepreneur. For example:</p> <ul style="list-style-type: none"> <li>• Consider how the opportunities entrepreneurs work on moderate the behavior-success relationship</li> <li>• Study how the fit between entrepreneurs and their ideas influence the link between entrepreneurs' actions and success</li> </ul>
<b>Capturing a complete picture of what entrepreneurs do</b>	<b>Applying alternative measurements to capture entrepreneurs' actions</b>	<b>Considering what entrepreneurs do next to starting a business</b>
<p>Research aiming for a more comprehensive and holistic picture of entrepreneurs' actions. For example:</p> <ul style="list-style-type: none"> <li>• Consider taking a grounded theory approach (opposed to using predefined items) to discover behaviors currently neglected</li> <li>• Apply research methods helping to uncover behaviors that have been neglected so far</li> <li>• Pay attention to what <i>not</i> to do</li> <li>• Capture how much time entrepreneurs spent on certain actions</li> </ul>	<p>Research considering how actions and venture success are being captured. For example:</p> <ul style="list-style-type: none"> <li>• Consciously choose the "molarity" of behaviors</li> <li>• Pay attention to the "extremes": the micro-foundations of entrepreneurs' actions as well as the overarching behavioral strategies</li> <li>• Consider a wider variety of success measures to better understand which behaviors are important to reach specific success goals</li> </ul>	<p>Research aiming to capture what entrepreneurs do <i>besides</i> starting their ventures. For example:</p> <ul style="list-style-type: none"> <li>• Pay attention to whether entrepreneurs have another employment and how this might benefit or harm venture development</li> <li>• Distinguish between "committed nascent entrepreneurs" and "exploratory nascent entrepreneurs."</li> </ul>

to venture success. Yet, with the exception of Honig and Karlsson (2004), no study in our sample explicitly captures *why* entrepreneurs engage in business planning. Moreover, no study examines how these different reasons moderate the business planning-success relationship.

The *why* question relates to the cognitive basis of entrepreneurs' activities (Grégoire et al., 2011) and may provide important insights into key aspects of the entrepreneurial process (Baron, 2004). While a number of researchers have theorized on what motivates entrepreneurs to start a venture (for example, Cooper et al., 1989; Reynolds & Miller, 1988; Scheinberg & MacMillan, 1988; Woo et al., 1991), as of yet, no one has established a link between what motivates entrepreneurs, what actions they choose to execute, and, subsequently, whether they are able to establish a successful venture. Also, reasons or motives are not measured on the level of individual actions. This could be done by using measures that enable researchers to distinguish the specific purposes of an activity. Possible research questions could be as follows: *How do the reasons entrepreneurs have for engaging in business planning behaviors (or other behaviors) influence venture success? Is activity X, conducted for the purpose of Y, related to venture success?*

## 5.2 Considering how entrepreneurs conduct actions

Our review indicates that very few studies have investigated *how* entrepreneurs conduct certain actions, that is, the manner or quality of action implementation. We believe that this gap offers important research opportunities. Undoubtedly, there are some straightforward administrative tasks such as registering a business or opening a bank account where the manner in which they are conducted is not crucial for venture success. However, as soon as task demands become more complex and more ambiguous, it seems unlikely that *how* a certain task is conducted (for example, how someone approaches a potential customer) should not play a role. We find three strategies of applying the *how* particularly promising. First, researchers could aim to identify behaviors that are overarching or reoccurring in venture creation and are useful with regard to multiple business functions (e.g., across sales, marketing, and finance). Examples of such overarching behaviors could be

“convincing others”, “negotiating” or—as suggested by Dew et al. (2018)—“asking others.” Questions that could be investigated include the following: *How do entrepreneurs successfully convince stakeholders in the early phase of venture creation? How do entrepreneurs of high-performing ventures negotiate deals with partners? How do entrepreneurs succeed in obtaining resources from others?* By focusing on select, cross-functional behaviors that are important throughout the entrepreneurial process, the variety of competences entrepreneurs need becomes more manageable. One outcome of such a comprehensive and holistic picture could be the identification of higher-level behaviors that span functions and application areas. Second, researchers could investigate the “how” with regard to different behaviors and—to address contextuality (Martinez et al., 2011)—link it to the nature of the environment or industry. Interesting research questions include, for example, *In order to be successful, how should entrepreneurs conduct marketing in highly competitive industries? Or How do biotech entrepreneurs successfully engage in product development?* Third, to address the issue of uncertainty that is inherent in entrepreneurship, researchers could aim to identify the “hows” that are specifically valuable in dealing with uncertainty. Among many other questions, researchers could ask *How do entrepreneurs successfully deal with critical events? How do entrepreneurs successfully master pivots of their business model?*

## 5.3 Acknowledging the “Opportunity-action Fit”

With few exceptions (e.g., Duchesneau & Gartner, 1990), the type or nature of the business idea was not considered in the analysis of the action-success link in our pool of articles. While some studies do control for the industries in which ventures operate (e.g., Newbert, 2005; Peters & Brush, 1996), even within the same industry, the type and nature of business ideas may vary widely. Hence, the research in our pool of papers is almost exclusively detached from the business idea the entrepreneurs work on. This can be problematic for two reasons.

First, without considering the idea (for example, by selecting a sample of entrepreneurs working on a similar type of venture idea), it will be difficult to reach detailed knowledge about what kind of actions are beneficial for venture success. Think of

an entrepreneur working to develop a new hydrogen vehicle versus an entrepreneur starting a business selling a car subscription service; both ideas could be innovative and growth-oriented, but they will involve very different startup behaviors. Different modes of action will be needed for exploiting these two opportunities. For example, one could distinguish between tech- and non-tech-ideas, apply typologies of business ideas, or distinguish between innovative and imitative new ventures (Samuelsson & Davidsson, 2009). Then, researchers could aim to identify beneficial actions for specific business ideas and ask questions such as *What type of actions enhance venture success for imitative new ventures in the restaurant industry? What types of actions enhance venture success for software-as-a-service startups?*

Second, the fit between the idea and the entrepreneur, a constellation that Shane and Venkataraman (2010) described as the “individual-opportunity nexus,” might make a big difference in entrepreneurs' success. For example, an entrepreneur who previously worked in a certain industry and already has relevant contacts should be more likely to establish partnerships or find employees. We therefore suggest that future research captures the characteristics of the business idea people work on as well as the fit between the individual and the perceived opportunity for a better understanding of the action-success link. Among a wide range of possibilities, future research studies could examine questions like the following: *How does the fit between the individual and the business idea influence the link between entrepreneurs' actions and success?*

#### 5.4 Capturing a complete picture of what entrepreneurs do

The majority of the studies included in our SLR are of a quantitative nature, examining behaviors on the basis of predefined action items (exceptions are Brown & Hanlon, 2016, Frese et al., 2000, and van Gelderen et al., 2000). While this approach has the advantage of a better comparability of the results, it also comes at a cost: behaviors that have received little attention so far might be overlooked, even though they contribute to venture success. Simply put, if we only capture what we *think* entrepreneurs typically do, we might disregard the heterogeneity of entrepreneurs' behavior and currently unknown influencing

factors. Thus, a complete picture of what entrepreneurs do and how this is related to venture success is currently missing. We suggest that researchers try to capture entrepreneurs' behaviors in a more holistic way by applying research methods that allow the discovery of behaviors that have been neglected so far. This could include practice-based studies that aim to capture behaviors in real-time through observations (Thompson et al., 2020), observational studies capturing entrepreneurs' daily behaviors (Mueller et al., 2012), or diary methods (Weinberger et al., 2018). Behavioral constructs could then be inductively developed based on the collected empirical data. This type of research might help to fulfill the call for “a more complete understanding of the firm creation process [that] would result” from “a more complete description of how the nascent entrepreneur or startup team pursued the business opportunity” (Reynolds, 2016, p. 532–533). Such research approaches would also allow studies to capture the amount of time spent on the respective actions, information that would likewise lead to a more comprehensive picture of the entrepreneurial process. Possible research questions could be as follows: *Besides previously examined activities, what other activities or combinations of activities contribute to venture emergence and venture success? Which behaviors distinguish entrepreneurs who successfully launched their venture from entrepreneurs who did not launch their venture?* While the second research question has been asked before, addressing it with methods capturing entrepreneurs' actions in a more comprehensive manner might lead to new research results. Such research designs would also allow researchers to identify whether spending too much time on certain actions harms venture emergence and success, rather than contributing to it. Following this line of thought, an interesting question could be as follows: *Which actions should entrepreneurs not spend too much time on?*

#### 5.5 Applying alternative measurements to capture entrepreneurs' actions

The 59 studies in our sample examine a large number of different behavioral constructs that are widely divergent with regard to the size, that is, the “molarity” of behavioral units. Although proposals for distinguishing different levels of molarity have been

made (e.g., Bird & Schjoedt, 2009), to our knowledge, research has not picked up on these frameworks. While in our pool of papers researchers frequently record data on individual actions to form overarching behavioral constructs, they seldom provide reasoning for the level or size of the “chunks” they are using in their analyses, which is also because frequently pre-defined action items are used, as discussed above. We suggest that choosing the “size” of actions more consciously could contribute to a more coherent and comprehensive understanding in the field. Looking at the “size” of actions, we found that most studies either examine specific action items (e.g., whether a business plan has been written) (van Gelderen et al., 2006) or larger behavioral constructs, generally composed of several specific action items (e.g., planning behavior) (Dimov, 2010). None of the studies collected behavioral data of entrepreneurs on a truly atomic level, for instance, examining the different necessary tasks required to complete a business plan (for example, defining customer segments, establishing a value proposition, or making financial projections). A more fine-grained approach aiming to capture the micro-foundations of entrepreneurs’ actions might help to resolve part of the inconsistent findings. For instance, one might find that only specific actions that are part of writing a business plan enhance venture success. Among other questions, researchers could ask the following: *Which aspects of writing a business plan influence venture success?* Moreover, we find that there seems to be little consistency in how actions are allocated to “overarching” behavioral constructs by different researchers. For example, Alsos and Ljunggren (1998) allocate the acquisition of facilities and equipment to the category of business planning behavior, while Tornikoski and Newbert (2007) operationalize it as a dimension of legitimacy behavior, and Tornikoski and Puhakka (2009) consider it to be a resource combination behavior. This makes it difficult to compare research findings across studies and draw conclusive insights about the entrepreneurs’ behavior-success relationship in general. An interesting theoretical contribution here could be—on the basis of past research and entrepreneurship theories—to develop a theoretically founded framework of entrepreneurs’ behaviors that can be used as a guide and reference in future research.

Finally, it is important to recognize that “success” can take different forms, such as business survival or

profitability. Given that different behaviors are likely to be relevant for the respective success measures (e.g., actions leading to persistence might be quite different from actions leading to profitability), it is important to examine how behaviors affect different dimensions of success. In our study, applied measures of success also vary widely across studies. Most studies focus on only one measure of success and few consider multiple measures, with Brown and Hanlon (2016) being an exception, as they consider 12 different success measures. Future research should consider this heterogeneity, for instance, by asking *How does business planning impact venture emergence, venture growth, and venture performance, respectively?* This may allow entrepreneurs and scholars alike to pinpoint more specifically what behaviors are relevant to achieving specific performance goals and which behaviors to focus on in the different phases of venture emergence.

#### 5.6 Considering what entrepreneurs do next to starting a business

While researchers investigate what entrepreneurs do in the process of starting a business, they often do not consider what entrepreneurs do *besides* starting a business. Considering that most entrepreneurs start as hybrids, i.e., part-time entrepreneurs pursuing other endeavors alongside their startup venture (Folta et al., 2010), it is a clear shortcoming to disregard these other endeavors. Information on these other endeavors can be very important because the time entrepreneurs’ commit to their startup venture can range from anything between one and 60 or more hours per week, as suggested by Gatewood et al. (1995). How much effort and time entrepreneurs are willing to put into their startup is a reflection of commitment and motivation, which is strongly related to how they view their opportunity (Gatewood et al., 1995) and to what they do next to starting a new business. Reynolds (2016, p. 529) makes the distinction between “committed nascent entrepreneurs” and “exploratory nascent entrepreneurs,” who seem to be attracted to the idea of firm creation but are not quite ready to go “all in.” Thus, our first recommendation for future studies would be to distinguish between the two types of entrepreneurs. For exploratory nascent entrepreneurs, one could ask the following: *Why is it that entrepreneurs are not fully committed yet? What kind of actions help them to decide whether they should become more committed?* Analyzing the relationship between what exactly founders are

doing, that is, the type and sequence of gestation activities and successful firm emergence, as several articles in our sample have done, only seems sensible for committed nascent entrepreneurs. As a second recommendation, for both groups of entrepreneurs, understanding what else entrepreneurs are doing could be insightful to understand venture success. Some entrepreneurs might be engaged in other jobs or endeavors that could actually help them in launching their business, for example, due to the contacts and networks that they might be able to access. Research studies could examine questions such as the following: *How do other engagements of entrepreneurs impact the venture creation process? What "type" of other engagements are conducive or detrimental to venture success?*

## 6 Limitations

Like any structured literature review, our study also has some limitations. First, when screening the databases for studies on the relationship between entrepreneurs' activities and venture success, we had to agree on and apply certain search terms to identify relevant studies. While we followed a comprehensive and structured approach, we might have still missed studies which use terminology that is different from our search terms. For example, we might have missed studies that only mention specific activities, such as networking, without using the general terms "action" or "activity" in their keywords. Overall, the aim of our study was to analyze the relationship between different types of activities and venture success. Including specific search terms, such as "networking," would have been arbitrary and would have shifted the focus of our analysis.

Secondly, because of including and discussing a broad spectrum of different activities in our review, our findings and conclusions might—in some instances—appear somewhat general. Again, this limitation is a result of the aim of our study which was to analyze the relationship between entrepreneurs' activities and venture success in a broad sense. We do not aim to replace literature reviews on the effect of specific activities on venture success but to gain insights into the general relationship between actions and success. We encourage review studies on the effect of particular activities and venture success.

## 7 Conclusion

Our aim in conducting this literature review was to take inventory of the current state of research regarding entrepreneurs' actions and venture success. To do so, we considered not only articles based on PSED data but also "stand-alone" studies based on other data. Given that successfully starting a new venture is at the core of entrepreneurship, the number of studies published in highly ranked journals that analyze the relationship between entrepreneurs' activities and venture success appears rather limited. Our analysis revealed that studies typically analyze the "what," less so the "when" and "how much," and rarely the "why," "how," and "what else." Based on our findings, we developed a six-point research agenda.

From a theoretical perspective, we see an opportunity for researchers to reconcile the study of effective entrepreneurs' actions with the nature of entrepreneurship which—being characterized by heterogeneity, complexity, contextuality, and uncertainty—limits "generalizability" and the search for "successful activities that are applicable to all specific situations" (Gartner & Teague, 2020, p. 3) with new research questions and innovative research designs. From a methodological standpoint, we suggest that research would benefit from further developing measurement approaches and techniques to capture entrepreneurs' actions. We encourage researchers to more consciously align how they capture entrepreneurs' actions (With which method? In which "chunk" size? In which comprehensiveness?) with the research questions at hand. While a broad stream of research has used the freely available PSED data to study entrepreneurs' action, it is time again to move forward and collect new data about entrepreneurs' actions. Lastly, we suggest that investigating specific themes and topics (e.g., considering what *not* to do, capturing the time spent on certain activities, identifying behavioral strategies for dealing with cross-functional behaviors or critical events) could advance research in our field. While most of our recommendations relate to the empirical side of analyzing the action–success relationship, we also emphasize that it is challenging from a theoretical point of view to explain why an activity on the individual level should be linked to success on the organizational level. Entrepreneurs are the driving force of venture creation, yet, such cross-level research is demanding because of the multitude of factors that influence venture success (Martinez et al., 2011). Research may need to scale back its ambitions and focus

initially on the success of specific entrepreneurial actions (such as successfully acquiring capital, navigating a team conflict, or launching a product) rather than the success of the entire company. Once the connection between actions and specific outcomes is established, we could then start to cluster action outcomes and see how these aggregated actions link to success. It is our hope that innovative approaches in entrepreneurship research will facilitate future innovative actions of entrepreneurs.

**Funding** Open access funding provided by Bern University of Applied Sciences

**Data availability** This is a literature review and we included a table showing the overarching results. Also, we indicated all papers used in our analysis in the reference list.

#### Declarations

**Ethics approval** Our work is a literature review. Thus, the research did not include any human experiments or interviews.

**Consent to participate** Not applicable.

**Consent for publication** The authors give their consent for publication.

**Conflict of interest** The authors declare no competing interests.

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**1 Note.** We used an asterisk to highlight literature that is part of the pool of articles from the SLR

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