

Mapping the Field of Nascent Entrepreneurship: A PSED-Based Review and Research Agenda

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Abstract

The study of nascent entrepreneurship lies at the core of entrepreneurship scholarship, offering critical insights into how both entrepreneurs and ventures emerge through a contextually embedded process. This review synthesizes findings from 95 peer-reviewed articles that employ the Panel Study of Entrepreneurial Dynamics (PSED I and II), two comprehensive longitudinal datasets specifically focusing on nascent entrepreneurship. Using thematic analysis, we synthesize the literature into three core dimensions—the entrepreneur, the entrepreneurial process, and the venture—and emphasize the role of context. Although research on individuals and ventures is relatively well developed, the process dimension remains underexplored, and contextual influences warrant further investigation. We also identify key methodological challenges—particularly related to construct validity—as well as emerging methodological innovations. Finally, we outline promising directions for future research, underscoring the need for more large-scale initiatives and opportunities to re-engage with the PSED’s untapped potential to advance understanding of entrepreneurial emergence.

Keywords

Nascent entrepreneurship, panel study of entrepreneurial dynamics I & II, entrepreneurial process

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Introduction

Understanding nascent entrepreneurship—the study of individuals engaged in creating new ventures prior to their formal launch—is essential for advancing both entrepreneurship theory and economic development (Reynolds, 2009). Essentially, nascent entrepreneurship marks the transformation of entrepreneurial intentions into concrete actions, involving the critical decisions and challenges that influence whether and how ventures emerge. Insights from this phase help elucidate the underlying mechanisms of firm creation, guide the identification of enablers and obstacles in the entrepreneurial journey, and inform evidence-based policymaking aimed at fostering innovation and startup success (Lewis et al., 2024).

Empirical research on the nascent phase of entrepreneurship has historically faced significant methodological limitations. Traditional approaches—such as relying on established ventures or convenience samples—obscure early-stage entrepreneurial activities and introduce survival and hindsight biases (Gartner & Shaver, 2012; Johnson et al., 2006). To address such challenges, Paul Reynolds launched the Panel Study of Entrepreneurial Dynamics (PSED), the first longitudinal study designed to observe nascent entrepreneurs (NEs) in real time. PSED I (1998–2004) and PSED II (2005–2011) employed rigorous screening to identify individuals in the pre-launch phase of venture creation, thereby enabling systematic, prospective analysis of entrepreneurial behavior, decisions, and outcomes as they unfold (Reynolds & Curtin, 2011; Yang & Del Carmen Triana, 2019).

By capturing data from individuals prior to launching their businesses and tracking them over time, the PSED datasets provide unique, real-time insights into the entrepreneurial process (Curtin & Reynolds, 2018; Müller et al., 2023). A notable strength of these datasets is the nationally representative and generalizable sample of NEs; there are just a few publicly accessible datasets of this kind available (Ivanova & Tornikoski, 2022). As such, there has been a significant level of research conducted using the PSED, and these studies represent the bulk of research on nascent entrepreneurship for the past several decades. An overview of the dataset structures is provided in Table 1 and further detailed in Appendix A.

The study of nascent entrepreneurship represents a distinctive and foundational contribution of entrepreneurship scholarship, offering critical insights into how organizations are born. Given the theoretical and practical importance of this early phase, it is essential to take stock of accumulated knowledge, identify research gaps, and chart directions for future inquiry. This imperative is particularly pressing as our analysis reveals a declining use of PSED data in academic research over the past decade, despite its substantial, yet underutilized, potential to advance understanding in the field. Figure 1 shows a steady rise

Table 1. Summary of PSED I and PSED II.

Characteristic	PSED I	PSED II
Years	1998–2004	2005–2011
Initial screening sample	64,622 adults (aged 18–74)	31,845 adults
Data collection mode	phone and mail	Phone only
Final sample (wave I)	830	1,214
Including comparison group	✓	×
Oversample of women and minorities	✓	×
Number of waves	4	6
	(coded Q through T)	(coded A through F)

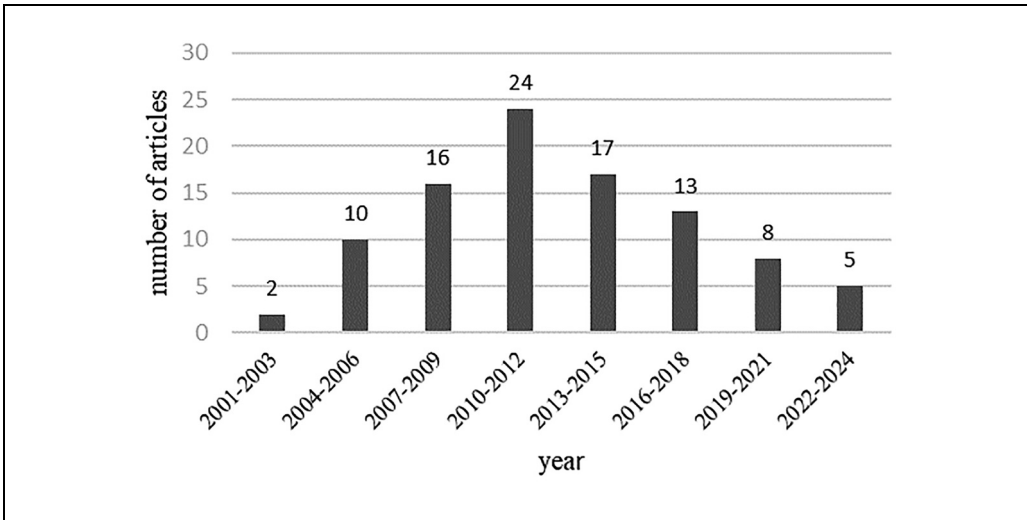


Figure 1. PSED-based studies over time.

in PSED-based research from 2001 to a 2012 peak—driven largely by a special issue on nascent entrepreneurship panel studies (Gartner & Shaver, 2012)—followed by a sharp decline in publication frequency.

Given the theoretical, methodological, and practical importance of studies utilizing the PSED, this review systematically examines 95 peer-reviewed articles published in top-tier journals that utilize the two datasets either together or separately. Using a structured process of study identification and thematic analysis, we identify key empirical findings and theoretical contributions related to the emergence of new ventures. The findings are organized around three interrelated core elements of the nascent entrepreneurship domain: (a) the entrepreneur, (b) the entrepreneurial process, and (c) the venture. We also give substantial attention to the role of context in influencing key relationships within each of these research domains. This thematic framework serves as both a conceptual model for organizing existing research and a foundation for future inquiry, offering a comprehensive perspective on the dynamics of venture emergence.

This review contributes to the entrepreneurship literature in three key ways. First, it introduces an integrative framework that outlines the core dimensions of nascent entrepreneurship and clarifies their interrelationships. This framework enables a systematic classification of prior research, integrates previously fragmented insights, and provides a coherent structure for evaluating the extent to which foundational questions have been addressed using PSED data (Gartner et al., 2004; Reynolds, 2000). Our review demonstrates that scholars have utilized the PSED to examine a broader range of theoretical questions than originally intended. Although the PSED was designed to answer, “Where do new firms come from, and through what processes?”, it has also informed important inquiries such as “Who becomes an entrepreneur, and why?”, “What do entrepreneurs do, and how?”, and “Does context matter, and in what ways?”. In addressing such questions, PSED-based research has substantially broadened and advanced entrepreneurship scholarship beyond its original scope.

Second, this review extends the entrepreneurship-as-emergence perspective by showing how the entrepreneur, the venture, and the entrepreneurial process co-evolve through dynamic, reciprocal interactions within uncertain and shifting contexts (Goldstein, 1999; Lichtenstein et al., 2007). Rather than treating these elements as distinct or sequential, we emphasize their mutual shaping through feedback, adaptation, and organizing behaviors. Our synthesis highlights how entrepreneurial identities, venture trajectories, and the unfolding process are deeply intertwined, each influencing and responding to the others over time. This integrative view moves beyond static models of venture creation to offer a more fluid, systemic account of how entrepreneurship emerges (Dimov, 2010; Morris & Webb, 2015).

Third, this review draws on the integrative framework to advance a forward-looking research agenda. By highlighting underexplored intersections among the entrepreneur, the venture, the process, and the broader context, it promotes more cumulative, methodologically rigorous, and theoretically informed investigations that leverage the unique strengths and underutilized potential of the current PSED datasets, as well as advocating for similar large-scale data gathering efforts in the future. In addition, this review outlines practical implications for both entrepreneurial practice and policymaking.

Methodology

Following established guidelines for rigor, transparency, and replicability (Tranfield et al., 2003), we conducted our review using a multi-step process of data collection and analysis (e.g., Chase et al., 2025; Salvi et al., 2023).

Data Collection

Figure 2 illustrates the search and selection process used in this review. We conducted the initial search using the Web of Science and EBSCO databases, employing the keywords “PSED” or “Panel Study of Entrepreneurial Dynamics” across all fields. The search was limited to peer-reviewed journal articles published in English, with no restrictions on publication date. To ensure relevance and academic rigor, we further limited the scope to articles published in journals rated 3 to 4* by the Chartered Association of Business Schools (2021). After merging the search results and removing duplicates, we identified 192 unique articles. Each article was manually reviewed to confirm that it used PSED I and/or II data in its empirical analyses. Following this screening, 65 articles met the inclusion criteria. Finally, to enhance the comprehensiveness of our sample of articles, we employed a snowball sampling strategy (Littlewood & Khan, 2018), reviewing the reference lists—particularly the methods sections—of the initially identified 192 articles. This process yielded an additional 30 relevant studies, resulting in a final sample of 95 peer-reviewed publications.

Data Analysis

To ensure analytical rigor, all 95 selected articles were independently read and reviewed by two co-authors. Each article was analyzed with a focus on its research question, theoretical framing, key findings, and the constructs and variables utilized. Initial coding was conducted collaboratively using NVivo Windows (Release 1.7.2) to organize data and facilitate thematic synthesis. Discrepancies in coding were resolved through iterative discussion

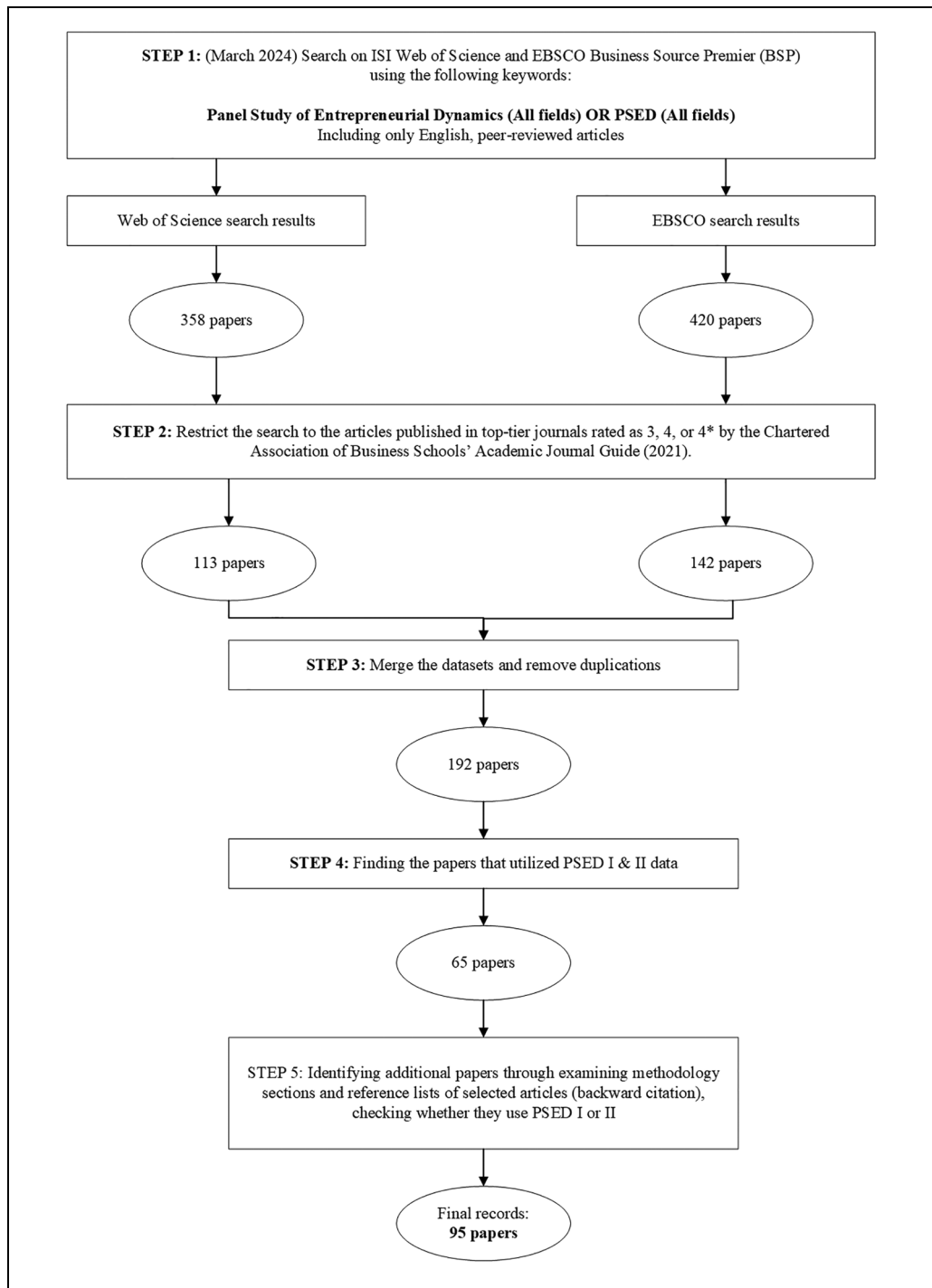


Figure 2. Search and selection process.

among all co-authors, enhancing inter-coder reliability and ensuring a trustworthy representation of the literature.

Although traditional academic reviews typically synthesize research around a core construct, theory, or phenomenon, this review takes a distinct data-centric approach by focusing on how the PSED I and II datasets have been used to investigate nascent entrepreneurship. This approach enables a detailed examination of the empirical foundations of nascent entrepreneurship through a common data source. Given this distinction, we employed a structured, two-stage analytical strategy to map the thematic scope and relational focus of PSED-based research, contributing to a more integrated and empirically grounded understanding of the nascent entrepreneurship literature (Cronin & George, 2023; Post et al., 2020). In the first stage, we identified and coded all variables examined across the sampled studies (e.g., self-efficacy, career motivations). These variables were then organized into broader conceptual categories and thematic clusters (e.g., traits and competencies, motivations), drawing on established qualitative synthesis methods (Gioia et al., 2013). The variable groups were further structured into the four overarching analytical domains: individual, process, venture, and context. This classification, presented in Table A1, highlights the breadth of phenomena investigated using PSED data and provides a foundation for the second-stage analysis.

In the second stage, we examined the directional relationships explored in each article using the variable groupings from the first stage. Each study was coded based on the type of relationship it investigated, within or across the four analytical domains: individual, process, venture, and context. For example, a study examining the relationship between an individual-level trait and a venture-level outcome was categorized under “individual-venture effects.” We developed first-order codes to capture each directional relationship and refined them into second-order themes through iterative co-author discussions. These themes were then organized according to the overarching theoretical questions the studies sought to address—questions that are central to the nascent entrepreneurship literature. The resulting framework of relational patterns is presented in Figure 3.

The four domains—the entrepreneur, the entrepreneurial process, the venture, and the context—are highly interconnected and often overlapping. Here, *process* refers to the sequence of behaviors and actions that unfold over time, whereas *context* encompasses the institutional, social, and economic environment in which entrepreneurship takes place. A unique feature of nascent entrepreneurship is the often-blurred boundary between the individual and the venture, which complicates the classification of studies. Nonetheless, drawing on established conceptual classifications and detailed examination of the components emphasized across the sampled studies, we developed an integrative framework (Figure 4) to visualize the observed relational patterns and their frequency in our sample.

As illustrated in Figure 4, *individual-venture effects* (31 studies) are the most commonly examined relationships, followed by *individual level effects* (25 studies), *process-venture effects* (19 studies), *individual-process effects* (16 studies), and *venture-level effects* (16 studies). In contrast, *process-level effects* (4 studies), *venture-process effects* (4 studies), *process-individual effects* (2 studies), and *venture-individual effects* (0 studies) have received considerably less attention. Similarly, contextual influences have remained relatively underexplored, with only a small number of studies examining *context-individual* (3 studies), *context-process* (4 studies), and *context-venture* (6 studies) effects. This framework effectively maps the broader landscape of nascent entrepreneurship research, highlighting both well-studied and underexplored relationships. We use this framework—together with our thematic analysis summarized in Figure 3—as the foundation for our synthesis of PSED-

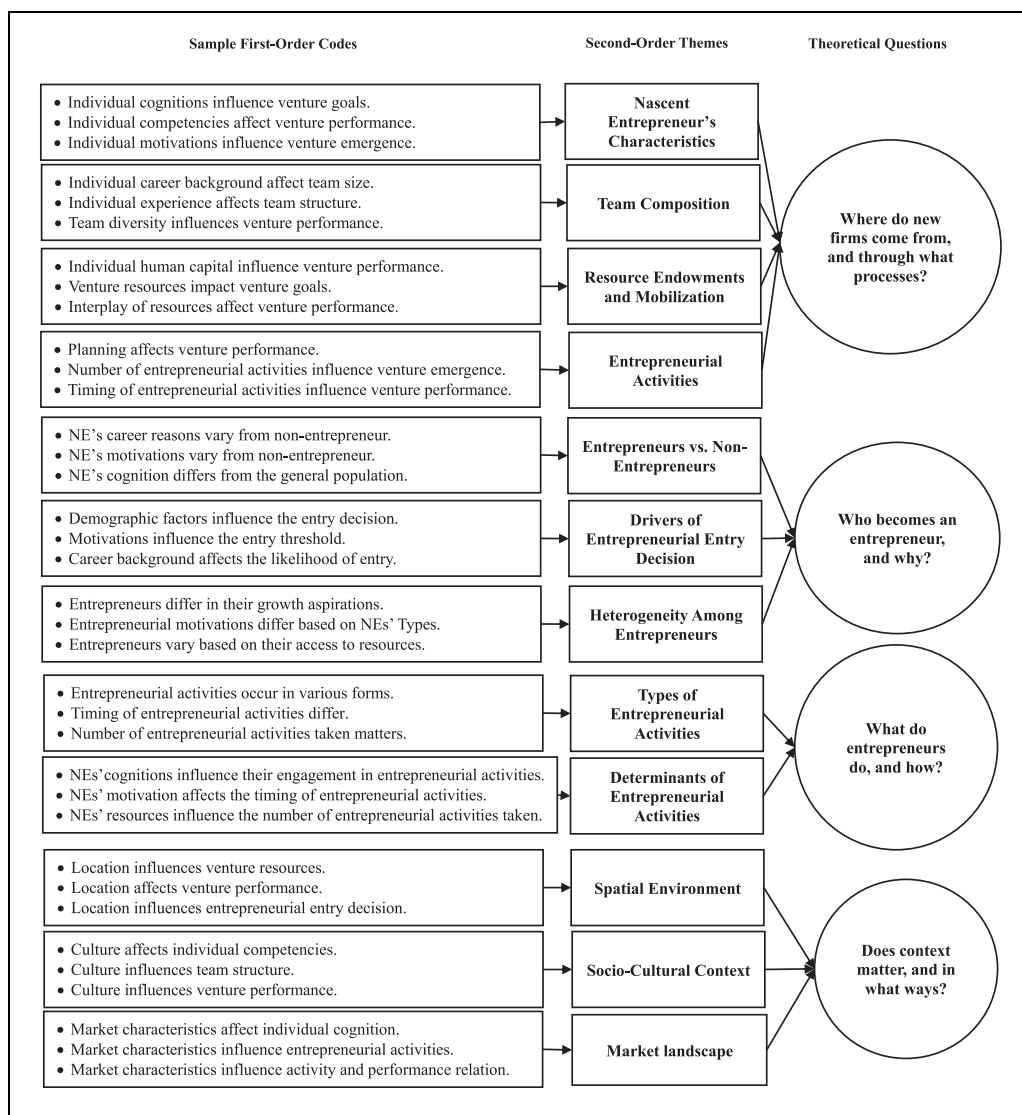


Figure 3. Thematic analysis.

based research and as a platform for proposing future research directions that leverage the untapped potential of PSED datasets.

Review Findings

Description of the Sample Articles

Table 2 shows the distribution of sampled articles across journals. Notably, PSED-based articles were published in 21 different journals, with four journals publishing 10 or more studies: *Small Business Economics* (20), *Journal of Business Venturing* (17), *Journal of Small*

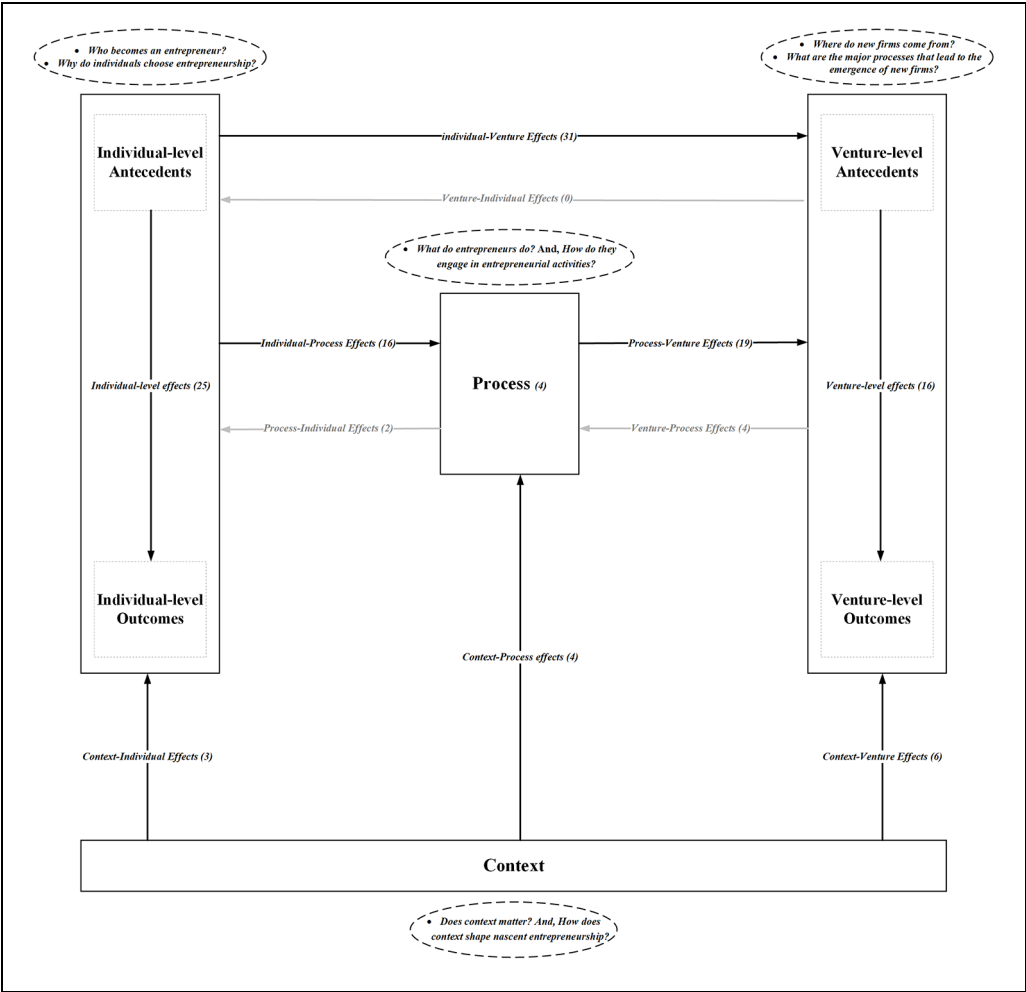


Figure 4. An integrative framework of nascent entrepreneurship.

Business Management (14), and *Entrepreneurship Theory and Practice* (12). In terms of dataset utilization, PSED I was the most frequently employed, appearing in 52 studies, followed by PSED II in 34 studies. Eight articles used both the PSED I and II. Furthermore, eight studies incorporated supplementary datasets alongside PSED to enrich the analyses.

The scholarly impact of PSED-based research is clearly demonstrated by citation metrics from Google Scholar, with approximately 26,000 total citations as of April 26, 2025, which equates to 275 citations per article.¹ When examining only publications with at least 5 years of citation history, the average citation per article rises to 309, reflecting enduring academic value. Furthermore, with an annual citation rate of 21 per article, which is substantially higher than typical social science expectations (Aksnes et al., 2019), and with 66% of all studies and 73% of mature studies (5 + years) surpassing 100 citations, it is clear that research utilizing PSED data has made exceptional contributions to nascent entrepreneurship literature.

Table 2. Number of PSED-Based Studies Published in Top-Tier Journals.

Journal	Number of articles
<i>Small Business Economics</i>	20
<i>Journal of Business Venturing</i>	17
<i>Journal of Small Business Management</i>	14
<i>Entrepreneurship Theory and Practice</i>	12
<i>Entrepreneurship & Regional Development</i>	5
<i>Strategic Entrepreneurship Journal</i>	4
<i>International Journal of Entrepreneurial Behavior & Research</i>	4
<i>International Small Business Journal</i>	3
<i>Journal of Business Research</i>	3
<i>American Sociological Review</i>	2
<i>Strategic Management Journal</i>	1
<i>Journal of Management</i>	1
<i>The Accounting Review</i>	1
<i>Academy of Management Learning and Education</i>	1
<i>Journal of Management Studies</i>	1
<i>Journal of Economic Behavior and Organization</i>	1
<i>Strategic Organization</i>	1
<i>European Accounting Review</i>	1
<i>Journal of Public Policy & Marketing</i>	1
<i>Work and Occupations</i>	1
<i>Nonprofit and Voluntary Sector Quarterly</i>	1
Total	95

An Integrative Framework of Nascent Entrepreneurship Field

Building on our thematic analysis, this section synthesizes the literature to advance our understanding of how PSED research has contributed to the nascent entrepreneurship field. To organize this synthesis, we categorize studies based on their primary outcomes of interest (i.e., dependent variables). First, we review *venture-focused studies* that seek to explain venture-level outcomes. Next, we turn to *individual-focused* and *process-focused studies*, which examine outcomes at the level of the entrepreneur or the entrepreneurial process, respectively. Finally, we review research on *contextual influences*, synthesizing how external factors shape venture, individual, and process outcomes.

Venture-Focused Studies

A majority of studies utilizing the PSED data focus on two foundational research questions originally posed by the initiative's originators: *Where do new firms come from?* and *What are the key processes that lead to their emergence?* Collectively, this body of research demonstrates that new ventures emerge through a complex interplay of (a) characteristics of the NE, (b) team composition, (c) resource endowment and mobilization, and (d) entrepreneurial activities undertaken during the process.

NE Characteristics. Venture performance—including disengagement, cash flow, operational status, organizational emergence, and sales—is influenced by the characteristics of the NE, including growth aspirations, perseverance, self-efficacy, and motivations. For example, growth aspirations are a strong predictor of entrepreneurial effort and outcomes, shaping

the trajectory and vision of new ventures by fostering a proactive orientation toward scaling (Cassar, 2006; McCann & Folta, 2012; Tietz et al., 2021). Likewise, perseverance plays a crucial role in navigating early-stage uncertainty, increasing the likelihood of venture emergence (Hopp, 2012; Khan et al., 2014). However, persistence levels may vary across demographic groups. For instance, black entrepreneurs tend to persist longer, potentially due to higher levels of personal financial investment, whereas Hispanic entrepreneurs are more likely to disengage, often due to constrained access to financial capital and credit (Freeland & Keister, 2016). Closely related, entrepreneurial self-efficacy enhances action orientation and resource commitment, thereby sustaining engagement and reducing the likelihood of discontinuation (Cassar & Friedman, 2009; Dimov, 2010; Khan et al., 2014; Townsend et al., 2010).

Entrepreneurial motivations also play a critical role in shaping venture development. Financially motivated NEs are more likely to pursue growth, whereas those motivated by a desire for autonomy may resist scaling, particularly through employee hiring (Cassar, 2007). Similarly, prosocial motivations may hinder venture emergence, especially when combined with novel product offerings that typically face heightened challenges in establishing legitimacy and aligning with institutional norms (Renko, 2013). By contrast, leisure-driven entrepreneurs—people motivated by intrinsic interest and deep domain expertise—tend to build more sustainable ventures over time (Kim et al., 2015).

Team Composition. Much like NE characteristics, team composition—including size, structure, and interpersonal dynamics—plays a critical role in venture outcomes. Importantly, founding teams are formed largely based on NE resources, preferences, and backgrounds. For instance, NEs with industry-specific expertise often pursue solo ventures, relying on technical skills and self-sufficiency, whereas those from interactive occupational backgrounds tend to form larger teams that leverage collaboration and interpersonal capabilities (Kim & Longest, 2014). Beyond team size, experienced NEs are typically more strategic in partner selection, retaining greater ownership and allocating equity based on perceived value and complementary contributions (Kotha & George, 2012). Thus, both team configuration and equity distribution—rooted in a founder's prior experiences—can affect a venture's trajectory and performance.

Interpersonal diversity and familiarity within teams also influence venture outcomes. Founders often exhibit homophily—preferring team members with similar ascriptive traits (e.g., gender or ethnicity)—in efforts to foster trust and cohesion, even though it may reduce functional diversity (Ruef et al., 2004). For although diverse teams bring broader skills, networks, and external resources that enhance profitability (Muñoz-Bullon et al., 2015), they may also encounter coordination challenges due to social categorization and conflict (Ko et al., 2021). Conversely, familiar teams—such as spousal partnerships—benefit from role flexibility and synergy, supporting early-stage sales, whereas biologically related teams may encounter rigid norms and role conflicts that limit long-term success (Brannon et al., 2013). Taken together, the various PSED-based research findings underscore the complex, multidimensional ways in which team composition influences venture emergence, development, and performance.

Resource Endowments and Mobilization. In the nascent stages of entrepreneurship, the line between the entrepreneur and the venture are often blurred, with the venture frequently acting as an extension of the founder (Dimov, 2010). Venture development at this stage is

largely driven by the NE's personal endowments—e.g., skills, time, networks, and capital—making it difficult to distinguish between individual and venture resources. This interdependence underscores the importance of the NE characteristics, such as demographics, traits, and motives, in shaping access to and mobilization of key resources. For instance, entrepreneurial self-efficacy and search skills facilitate the identification and acquisition of embedded network resources (Patel & Fiet, 2009), whereas growth aspirations influence efforts to secure financial and organizational assets necessary for scaling (Brush, Edelman, & Manolova, 2008; Gartner et al., 2012).

Importantly, the acquisition and utilization of resources are driven not only by individual- or team-level attributes but also by broader structural constraints and systemic inequalities. Entrepreneurs from marginalized backgrounds, including individuals with disabilities, often face institutional barriers that limit access to essential social and financial resources; such constraints frequently necessitate compensatory strategies, such as increased reliance on personal financial assets, that may undermine long-term sustainability (Freeland & Keister, 2016; Renko et al., 2016). By contrast, entrepreneurs with more advantageous endowments—such as prior industry experience or an advanced education—are generally better positioned to leverage their human capital to mobilize additional forms of support. The following sections examine more closely how distinct forms of capital—human, social, and financial—and their configurations, timing, and interactions influence venture emergence and performance.

Human Capital. Human capital, including education and experience, has shown to enhance venture performance by equipping entrepreneurs with the knowledge and skills needed for opportunity recognition, resource mobilization, and execution (Alomani et al., 2022; Dimov, 2010; Hopp, 2012; Linder et al., 2020; Newbert, 2005; Tietz et al., 2021; Zhang et al., 2022). In team contexts, human capital also signals competence and operational capability, facilitating meritocratic leadership selection, improving execution, and accelerating time to break-even (Oe & Mitsubishi, 2013; Yang & Aldrich, 2014).

Social Capital. Social capital provides NEs with access to critical resources, advice, and support through their networks (Alomani et al., 2022; Honig & Hopp, 2019; Kim et al., 2013; Linder et al., 2020); both the composition and evolution of these relationships matter to outcomes. For example, family ties often provide long-term commitment, whereas professional ties contribute strategic insights. However, misalignment—such as seeking strategic advice from family—can hinder efficiency (Kim et al., 2013). Successful NEs not only diversify their networks over time to minimize redundancy and increase exposure to novel resources (Kreiser et al., 2013; Patel & Fiet, 2009), but also strategically adjust the longevity, frequency, and emotional intensity of their interactions. Although strengthening ties enhances trust and operational efficiency, overreliance on close connections may restrict adaptability and limit access to new information. Conversely, expanding the breadth of ties broadens resource availability and supports venture emergence. These deliberate adjustments help reduce resource acquisition costs and align networks with evolving venture needs (Newbert et al., 2013; Newbert & Tornikoski, 2012, 2013).

Financial Capital. Financial capital functions more as an enabler than a direct predictor of venture success, with the timing of capital infusion often outweighing the absolute amount available (Brannon et al., 2013; Linder et al., 2020). NEs with substantial personal wealth

are more likely to persist through early-stage challenges and avoid abandonment driven by liquidity constraints. Nevertheless, empirical evidence suggests that the level of personal, informal, or formal financial support does not consistently predict profitability (Frid, Wyman, et al., 2016; Reynolds, 2011). Crucially, the absence of formal financial backing after legal registration markedly increases the risk of discontinuation (Reynolds, 2011). The type of funding also plays a pivotal role. Equity-based investments are associated with improved survival and accelerated growth by fostering planning, reducing information asymmetries, and delivering added value through investor expertise (Hechavarria et al., 2016). In contrast, ventures predominantly dependent on internal capital often face limitations in scaling and sustaining growth beyond the nascent phase.

Resource Configuration and Interdependence. Although various types of resources contribute to entrepreneurial success, it is often their configuration and interaction that play a pivotal role in shaping venture performance. Human capital frequently facilitates access to both social and financial resources. For instance, education and industry experience can reduce perceived investor risk and thereby improve access to funding (Gartner et al., 2012; Kotha & George, 2012), whereas personal wealth can serve as collateral to enhance financing prospects (Frid, Wyman, et al., 2016; Gartner et al., 2012; Warhuus et al., 2021). Furthermore, the effectiveness of any resource frequently depends on the presence of others (Linder et al., 2020; Semrau & Hopp, 2016). For example, a larger pool of financial supporters can amplify human capital, whereas informational supporters may compensate for its absence (Semrau & Hopp, 2016). In addition, cognitive capital—the capacity to learn, adapt, and communicate—enhances the strategic use of human and social capital by improving coordination and network mobilization (Alomani et al., 2022).

Entrepreneurial Activities. A growing body of research has examined how specific entrepreneurial activities shape venture performance, with planning emerging as one of the most thoroughly investigated. Research widely supports that planning enhances venture performance (Dimov, 2010; Greene & Hopp, 2017; Liao & Gartner, 2006; Villani et al., 2018) as it helps reduce uncertainty, strengthening self-efficacy and financial expectations (McCann & Vroom, 2015), and merit-based leadership selection (Yang & Aldrich, 2014). As a strategic tool, planning enables a better assessment of risks, clarification of goals, mobilization of resources, and building of confidence, which thereby increases the likelihood of venture persistence and viability. Activities such as preparing financial projections and registering the business also improve access to funding, both in terms of probability and amount (Gartner et al., 2012).

Despite its advantages, planning can lead to unintended consequences. One concern is over-optimism, where entrepreneurs develop unrealistic expectations by focusing too narrowly on internal goals while overlooking market benchmarks and industry trends (Cassar, 2010). Planning also shapes how NEs handle uncertainty, particularly when deciding whether to persist or exit. Although structured planning can enhance clarity and shorten periods of indecision (Ivanova & Tornikoski, 2022), it may also delay action and cause temporary disengagement. Conversely, sustained implementation may maintain momentum but extend crises if NEs fail to adapt or make necessary strategic shifts. Ultimately, it appears that the value of planning may depend on both the characteristics of the entrepreneur and the venture type. For example, NEs with an abstract conceptualization learning style benefit more from formal planning (Honig & Hopp, 2019). Likewise, science-based

ventures tend to gain more from comprehensive planning—covering market definition and financial projections—given their longer-term orientation and complexity (Villani et al., 2018).

The number of entrepreneurial activities undertaken also plays a critical role in venture emergence. Studies consistently find a positive relationship between the volume of activities performed and the likelihood of successful venture creation (Brush, Manolova, & Edelman, 2008; Edelman & Yli-Renko, 2010; Tornikoski & Newbert, 2007; Vilanova & Vitanova, 2020). Yet, timing and sequencing of activities are equally important. Delaying resource-intensive organizing efforts until after foundational steps—such as concept development and early market validation—can improve survival odds by allowing for strategic adjustments and stakeholder input (Brush, Manolova, & Edelman, 2008; Hopp & Sonderegger, 2015; Lichtenstein et al., 2007). A strategic pacing of activities enables NEs to build legitimacy incrementally, starting with resource-light actions (e.g., market research, informal financing) before committing to more capital-intensive investments (Reynolds, 2011; Warhuus et al., 2021).

Individual-Focused Studies

Beyond the original venture-focused objectives of the PSED, a substantial body of research addressed foundational individual- or entrepreneur-focused questions, central to entrepreneurship scholarship: *Who becomes an entrepreneur?* And, *Why do individuals choose entrepreneurship?* The PSED-based studies contribute to these questions in three key ways: (a) identifying characteristics that differentiate entrepreneurs from non-entrepreneurs, (b) examining the drivers of entrepreneurial entry decision, and (c) uncovering heterogeneity among NEs.

Entrepreneurs versus Non-Entrepreneurs. A subset of studies in our sample highlights key differences between entrepreneurs and non-entrepreneurs, particularly in terms of career reasons and cognitive orientations. Entrepreneurs are less driven by external validation—such as social recognition or adherence to traditional roles—and more motivated by autonomy and identity fulfillment, often placing less emphasis on financial gain (Carter et al., 2003; Xu & Ruef, 2004). These motivations, however, vary across demographic groups. For instance, men often prioritize financial success and innovation, whereas women are more likely to seek personal fulfillment, recognition, and work-life balance—reflecting societal expectations and limited exposure to entrepreneurial role models for women (Carter et al., 2003; Manolova et al., 2012). Similarly, black entrepreneurs tend to emphasize innovation, whereas white entrepreneurs often pursue both innovation and financial gain. Notably, entrepreneurs report higher career satisfaction for their previous job than non-entrepreneurs, a difference often attributed to their dispositional optimism and positive affects (Schjoedt & Shaver, 2007).

Cognitive factors also distinguish entrepreneurs from their non-entrepreneurial counterparts. Although entrepreneurship is often associated with high risk tolerance, research suggests that entrepreneurs are more risk-averse than commonly assumed, tending to make conservative estimates about success and relying on accurate information to assess risk rather than media-driven hype (Xu & Ruef, 2004). Risk-taking propensity among entrepreneurs tends to rise with growth aspirations or heightened environmental uncertainty (Gartner & Liao, 2012). However, they actively manage risk and uncertainty through systematic search, business planning, and financial forecasting—practices that leverage prior

knowledge and enhance their ability to anticipate future trends (McCann & Vroom, 2015; Patel & Fiet, 2009). Additionally, forms of human capital (e.g., education, entrepreneurial experience, managerial experience) that promote the ability to assess business feasibility (Dimov, 2010), and a positive attitude toward entrepreneurship, help reduce perceptions of uncertainty (McCann, 2017).

Drivers of Entrepreneurial Entry Decision. Individuals become entrepreneurs for a variety of reasons, and a significant body of research has examined the motivations underlying entrepreneurial entry decisions. Among the most frequently studied drivers are career motivations and self-efficacy (Carter et al., 2003; Cassar & Friedman, 2009; Edelman et al., 2010; Manolova et al., 2012; Renko et al., 2012; Schjoedt & Shaver, 2007). Researchers have identified a wide range of career motivations that influence entrepreneurial entry decisions, including self-realization, financial success, recognition, identity, role fulfillment, innovation, and independence (Edelman et al., 2010; Manolova et al., 2012). Notably, non-financial motives can lower the perceived threshold to entry by compensating for financial uncertainty, thereby increasing the likelihood of entrepreneurial engagement (McCann & Folta, 2012). Likewise, self-efficacy enhances entrepreneurial entry by strengthening individuals' confidence in their ability to carry out entrepreneurial tasks (Cassar & Friedman, 2009; Schjoedt & Shaver, 2007).

The decision to pursue entrepreneurship is also shaped by demographic factors. Men are nearly twice as likely as women to become entrepreneurs, partly because women face greater barriers such as limited access to capital and gender-based workplace discrimination. Although self-employment can offer greater flexibility, research suggests that having children does not significantly increase women's entrepreneurial entry. Age is another factor, with entrepreneurial entry peaking between ages 25 and 54—likely due to a balance of career flexibility, experience, and manageable financial constraints. Additionally, Black and Hispanic individuals have higher rates of entrepreneurial entry compared to Whites, possibly as a response to restricted access to traditional employment opportunities (Adachi & Hisada, 2017; Reynolds et al., 2004).

Human capital also plays a key role in entrepreneurial entry (Kim et al., 2006; McCann & Folta, 2012; Reynolds et al., 2004). Work experience is the most frequently examined factor leading to a transition into entrepreneurship. Through work experience, individuals accumulate industry-specific knowledge, develop relevant skills, and build valuable networks, all of which can contribute to their entrepreneurial entry (Kim et al., 2006; Laffineur et al., 2020; Mai & Zheng, 2013; McCann & Folta, 2012; Reynolds et al., 2004; Schjoedt & Shaver, 2007). Studies further distinguish between dimensions of work experience—such as diversity, complexity, and job embeddedness—that influence entrepreneurial entry. For example, diverse work experiences lower the entry threshold by enhancing individual skill sets and perceived chances of success while reducing the appeal of traditional employment (McCann & Folta, 2012; Reynolds et al., 2004). High on-the-job embeddedness—that is, strong linkages, role fit, and perceived sacrifices—encourages entrepreneurship within the same industry, enabling individuals to leverage accumulated knowledge and networks (Mai & Zheng, 2013). Experience in complex or managerial roles also promotes entrepreneurial entry, as it helps individuals assess opportunities and navigate early-stage business challenges (Dimov, 2010; Kim et al., 2006; Laffineur et al., 2020). Finally, although financial constraints are commonly viewed as a barrier to entry, PSED-based research reveals a more nuanced reality: financial resources do not uniformly inhibit all forms of entrepreneurial entry (Kim et al., 2006; McCann & Folta, 2012; Petrova, 2012).

Heterogeneity Among NEs. NEs differ widely in growth aspirations and preferred future size of the business (e.g., large vs. manageable); these aspirations are shaped by life stage, demographic characteristics, and career motivations. Age, in particular, plays a significant role as young entrepreneurs tend to exhibit more aggressive growth ambitions than their older counterparts. Gender also influences growth intentions with women generally reporting lower growth aspirations than men. However, it is noted that this gap is largely driven by the exceptionally high scaling ambitions of young men (Davis & Shaver, 2012; Manolova et al., 2012). Parenthood further complicates these patterns. Mothers often report higher growth aspirations, likely due to increased financial responsibilities, whereas fatherhood is not associated with changes in growth goals (Davis & Shaver, 2012).

Career motivations add another layer of variation. Some entrepreneurs pursue growth to achieve substantial financial success, whereas others prioritize independence and lifestyle balance, which can temper the desire to scale (Cassar, 2007). Social entrepreneurs also differ meaningfully from commercial entrepreneurs; they typically exhibit higher self-efficacy and growth aspirations, driven by a desire to maximize social impact (Clark et al., 2018).

NEs also vary based on their access to resources, which significantly shapes their entry paths and growth potential. NEs with disabilities, homemakers (i.e., those who work at a place of residence), non-technology entrepreneurs, and nascent intrapreneurs often face greater resource constraints than their counterparts (Liao & Welsch, 2005; Parker, 2011; Renko et al., 2016; Singh & Lucas, 2005). These limitations can both restrict options and shape motivations. For example, individuals with disabilities are nearly twice as likely to pursue self-employment due to limited traditional career alternatives (Renko et al., 2016), and homemakers may have limited capacity to invest in their ventures (Singh & Lucas, 2005). Limited resource access can also make certain entrepreneurial options—such as nascent intrapreneurship or non-technology entrepreneurship—more viable. These paths often rely more heavily on transferable skills and general capabilities that can be applied outside of established organizations (Parker, 2011). In contrast, technology-based entrepreneurship tends to be more knowledge-intensive and depends on access to tacit knowledge and trusted networks—forms of capital that are often less accessible to disadvantaged and under-resourced NEs (Liao & Welsch, 2005).

Process-Focused Studies

Our review identifies a modest stream of PSED-based research focused on the entrepreneurial process. This body of literature contributes to addressing two foundational questions: *What do entrepreneurs do?* And, *How do they engage in entrepreneurial activities?* We synthesize this research across two core dimensions: (a) the types of entrepreneurial activities undertaken, and (b) the factors that shape engagement in these activities.

Types of Entrepreneurial Activities. The PSED datasets have significantly advanced our understanding of the diverse activities that NEs undertake during the start-up process. Far from following a linear or uniform sequence, the entrepreneurial process encompasses a wide range of gestation activities that unfold in varying ways. PSED data capture this complexity by tracking not only whether specific actions are undertaken—such as product development, market research, equipment acquisition, team formation, licensing, and first sales—but also when these actions occur across multiple time points. This longitudinal dimension allows researchers to move beyond static representations and examine entrepreneurial activity as an evolving process.

Scholars have developed various frameworks to categorize entrepreneurial activities. Some studies focus on categories of actions—such as marketing, planning, or resource acquisition (Brinckmann & Kim, 2015; Greene & Hopp, 2017; Liao & Gartner, 2006)—whereas others offer broad conceptual typologies. For instance, Tornikoski and Newbert (2007) used a legitimacy perspective to categorize behaviors like improvisation, resource combination, and networking. Brush, Manolova, & Edelman (2008) delineated four overarching domains of activity: intentionality (e.g., preparing business plan, taking workshops on starting a venture), resources (e.g., acquiring equipment, asking for funds), boundary (e.g., opening bank account, applying for phone listing), and exchange (e.g., receiving revenue, paying salaries). Other studies propose process-oriented classifications, including distinctions between effectuation and causation (Villani et al., 2018), or between abstract thinking and concrete execution (Chen et al., 2018).

More recent studies have continued to refine our understanding of the entrepreneurial process by proposing new approaches to classifying and quantifying entrepreneurial activities. For instance, Ivanova and Tornikoski (2022) distinguished between planning and implementation activities, whereas Lewis et al. (2024) categorized them into planning, boundary creation, and stakeholder enrollment. Parallel to this line of work, other studies emphasize the number of entrepreneurial actions as a proxy for entrepreneurial progress, operating under the assumption that more actions indicate greater advancement toward venture creation. These studies assess varying numbers of actions—13 (Patel & Fiet, 2009), 16 (Ivanova & Tornikoski, 2022; Schenkel et al., 2009), 29 (Kim et al., 2015), and 33 (Ko et al., 2021; Semrau & Hopp, 2016)—reflecting differences in how researchers define and operationalize entrepreneurial engagement. Collectively, this body of research reinforces the idea that entrepreneurship is characterized by diverse, multifaceted, and nonlinear engagement patterns.

Determinants of Entrepreneurial Activities. A growing body of research has identified key factors influencing NEs' engagement in entrepreneurial activities. This literature emphasizes how NEs' cognitions, motivations, and resources can affect the scope, sequence, and intensity of their entrepreneurial activities (Edelman & Yli-Renko, 2010; Singh & Lucas, 2005; Villani et al., 2018). In particular, cognitive characteristics play a key role in determining entrepreneurial action. NEs who engage in systematic search and adaptive decision-making tend to better identify opportunities and allocate resources, ultimately increasing their level of entrepreneurial activity (Patel & Fiet, 2009). A need for cognitive closure also appears to drive engagement, as it prompts NEs to act and reduce ambiguity through increased activity (Schenkel et al., 2009). Entrepreneurial self-efficacy is another consistent predictor of engagement in entrepreneurial actions. Higher self-efficacy enhances motivation, lowers perceived uncertainty, and supports ambitious goal-setting, which lead to a greater number of activities, particularly in the planning domain (Brinckmann & Kim, 2015; Hopp & Sonderegger, 2015; Vilanova & Vitanova, 2020).

The motivational orientation of NEs also influences their activity engagement. Growth-oriented and highly committed entrepreneurs are more likely to engage in detailed planning and strategic financial activities, including the use of professional accounting services (Brinckmann & Kim, 2015; Cassar & Ittner, 2009; Greene & Hopp, 2017). In contrast, NEs with lower motivational drive—often due to feelings of isolation or uncertainty about their venture's viability—tend to remain in abstract vision-setting stages. Lacking confidence and proximity to concrete goals, they focus more on “why” than “how,” which delays actions (Chen et al., 2018). Motivation can also stem from the nature of the

opportunity itself. For instance, NEs pursuing leisure-based ventures may be intrinsically motivated but often engage in fewer initial actions and follow a more gradual development path than those pursuing more conventional business ideas (Kim et al., 2015).

Resource endowments—particularly human and social capital—play a pivotal role in shaping engagement in entrepreneurial activities. Education and prior experience enhance entrepreneurs' analytical capabilities, increasing their likelihood of engaging in planning, developing financial projections, and executing a broader array of entrepreneurial activities (Brinckmann & Kim, 2015; Greene & Hopp, 2017; Hopp & Sonderegger, 2015). However, prior entrepreneurial experience can sometimes hinder market definition, as experienced entrepreneurs may rely on their existing industry knowledge rather than systematically analyzing market conditions (Zhang et al., 2022). Further, social capital enables NEs to leverage networks for securing funding and seeking advice, which in turn increases activity volumes (Kreiser et al., 2013; Patel & Fiet, 2009; Semrau & Hopp, 2016).

Context-Focused Studies

A small subset of PSED-based research has explored how contextual factors shape nascent entrepreneurship, addressing two core questions: *Does context matter?* And, *How does context shape nascent entrepreneurship?* Scholars have examined if and how external environments shape the varying relationships involving the entrepreneur, the entrepreneurial process, and the venture. This body of work shows that context can both enable and constrain entrepreneurial actions and outcomes. We synthesize this literature by organizing insights around three key domains: (a) spatial environment, (b) socio-cultural context, and (c) market landscape.

Spatial Environment. Location plays a key role in nascent entrepreneurship by shaping access to resources, networks, and early-stage business conditions. Urban environments are generally more conducive to venture creation due to greater population density, resource availability, and broader networking opportunities (Reynolds et al., 2004). The physical setup of the venture also matters. Home-based businesses benefit from lower overhead costs and easier access to personal resources, increasing the likelihood of achieving initial sales relative to those in commercial spaces (Brush, Edelman, & Manolova, 2008). In contrast, ventures operating from dedicated commercial locations are more likely to secure early external financing, as formal establishments enhance legitimacy and investor confidence (Warhuus et al., 2021).

Socio-Cultural Context. Broader socio-cultural environments shape both entrepreneurial activities and venture outcomes. Socially supportive environments and performance-based cultures strengthen entrepreneurial self-efficacy, fostering resilience and persistence among founders (Hopp & Stephan, 2012). Cultural and industry norms also influence success trajectories. For example, women-led ventures face higher failure rates in male-dominated industries due to entrenched biases that favor masculine leadership traits. In contrast, men-led ventures often perform well even in female-dominated sectors, benefiting from stereotypes that associate men with competence and credibility (Yang & Del Carmen Triana, 2019).

Cultural dynamics often intersect with interpersonal relationships within venture teams, producing both positive and negative outcomes. Although family relationships can mitigate the negative effects of demographic diversity by fostering cohesion and structured

collaboration (Ko et al., 2021), spousal teams often face challenges related to gendered stereotypes. The male breadwinner model reinforces male dominance irrespective of merit, restricting women's leadership opportunities (Yang & Aldrich, 2014) and increasing the failure likelihood of women-led ventures (Yang & Del Carmen Triana, 2019).

Market Landscape. The market landscape significantly shapes how entrepreneurs think and behave, particularly through its influence on perceived uncertainty and competitive intensity. In dynamic markets, elevated environmental uncertainty complicates forecasting and risk assessment, which can discourage entrepreneurial activity (Edelman & Yli-Renko, 2010; Newbert, 2005) and venture emergence (Dimov, 2010). Uncertainty also affects the timing and value of key activities. Under high uncertainty, early planning helps NEs identify potential risks, establish legitimacy, and sustain commitment. In contrast, in more stable markets, delayed planning may be more effective, allowing entrepreneurs to focus on execution first and refine plans through experiential learning (Liao & Gartner, 2006).

Competitive intensity plays a key, yet complex, role in shaping entrepreneurial performance. Although high competition intensity is often expected to drive entrepreneurial disengagement, its direct impact remains inconclusive (Khan et al., 2014). On one hand, competitive pressure encourages NEs to regularly prepare financial statements, increasing their attention to performance monitoring and strategic responsiveness (Cassar, 2009). On the other hand, intense competition can make goals seem unattainable, diminishing the positive influence of goal commitment (Khan et al., 2014).

Conceptual Foundations and Guiding Theories

A core advantage of the PSED dataset is its capacity to support a broad spectrum of theories and conceptual models. Our review identifies over 40 distinct theories applied across 95 studies, underscoring the field's theoretical pluralism and interdisciplinary character (details are available in Table A2). The Resource-Based View (RBV; Barney, 1991) is the most frequently employed, featured in 23 studies, followed by Social Cognitive Theory (Wood & Bandura, 1989) in 10 studies, and Goal-Setting Theory (Locke & Latham, 2002) in 7 studies. The remaining contributions draw from a wide array of conceptual perspectives, reflecting the complexity of entrepreneurial phenomena.

As demonstrated by the number of PSED studies drawing on RBV, researchers have placed much emphasis on the importance of integrating diverse forms of capital in nascent entrepreneurship. Although prior work predominantly emphasized human and social capital, PSED-based research highlighted the critical role of cognitive capital as a key complementary resource (Alomani et al., 2022). The data also tended to support a configurational view of resources, showing that venture survival depends on the strategic combination of resources rather than their isolated effects, particularly among varied types of human capital (Linder et al., 2020). Semrau and Hopp (2016) extended this view by revealing that the interaction between human and social capital is contingent rather than universally complementary or compensatory; for instance, education and prior founding experience enhance financial social capital but may diminish the value of informational social capital. These findings collectively underscore the necessity of adopting contingency and configurational perspectives to capture the complex and context-specific interplay of resources in shaping entrepreneurial outcomes.

PSED-based research also provides strong evidence that various forms of capital are inherently multidimensional and subject to dynamic evolution. Liao and Welsch (2005),

Table 3. Analytical Methods Employed in PSED-Based Studies.

Method category	Specific methods included	Number of papers
Logistic Methods	Logit, Probit, Multinomial Logistic Regressions	30
Basic Linear Methods	Ordinary Least Squares, Linear Regression, Generalized Least Squares	22
Event History Analysis	Cox Proportional Hazards, Structural Event Analysis, Competing Risk Analysis	14
Advanced Regression Techniques	Hierarchical Regression, Generalized Method of Moments, Instrumental Variable Regression	9
Variance Analysis Methods	T-test, ANOVA, Chi-square Analysis	8
Structural Equation Modeling	Structural Equation Modeling	5
Time-Based Methods	Panel and Time-Series Regression	3
Machine Learning Methods	k-nearest Neighbors, Random Forest, XGBoost, Support Vector Machines, Artificial Neural Networks	1

for example, conceptualize social capital as comprising structural, relational, and cognitive dimensions that interact to shape entrepreneurial outcomes. Human capital, in turn, influences both the formation and progression of social capital over time (Kim & Longest, 2014). Moreover, PSED-based research findings suggest that resource allocation strategies—such as modifying the strength and number of social ties—are path-dependent and must evolve in tandem with the venture’s developmental trajectory. Complementing this view, several studies (e.g., Kreiser et al., 2013; Newbert & Tornikoski, 2012; Newbert et al., 2013) challenge static conceptions of resources, emphasizing that both the diversity and quantity of resources evolve over time. These insights collectively reinforce the importance of treating capital as a fluid and historically contingent construct, shaped by contextual dynamics and prior strategic decisions.

Methodological Approaches and Analytical Techniques

As summarized in Table 3, PSED studies utilized a broad array of methodological and statistical techniques (e.g., regression, structural equation modeling, and event history analysis). In terms of research design (see Table A2 for details), variance-based approaches—utilizing data from multiple PSED waves without explicitly modeling temporal change—were the most common (41 studies). Cross-sectional designs, based on a single wave of data, were also prevalent (32 studies). A smaller yet notable subset of studies adopted longitudinal designs (19 studies), which leveraged the panel structure of PSED I and II to examine temporal dynamics and developmental trajectories in entrepreneurial processes.

Figure 5 illustrates the distribution of research designs across publication years, capturing the shifting patterns in methodological approaches. Although early studies relied exclusively on cross-sectional analyses, accounting for 100% of initial publications, variance-based designs became more prominent over time, with longitudinal designs emerging most recently as the dominant approach. This shift reflects a growing recognition of the value of temporally sensitive methods for capturing the dynamic and processual nature of nascent entrepreneurship, which remains an underutilized potential of the PSED datasets.

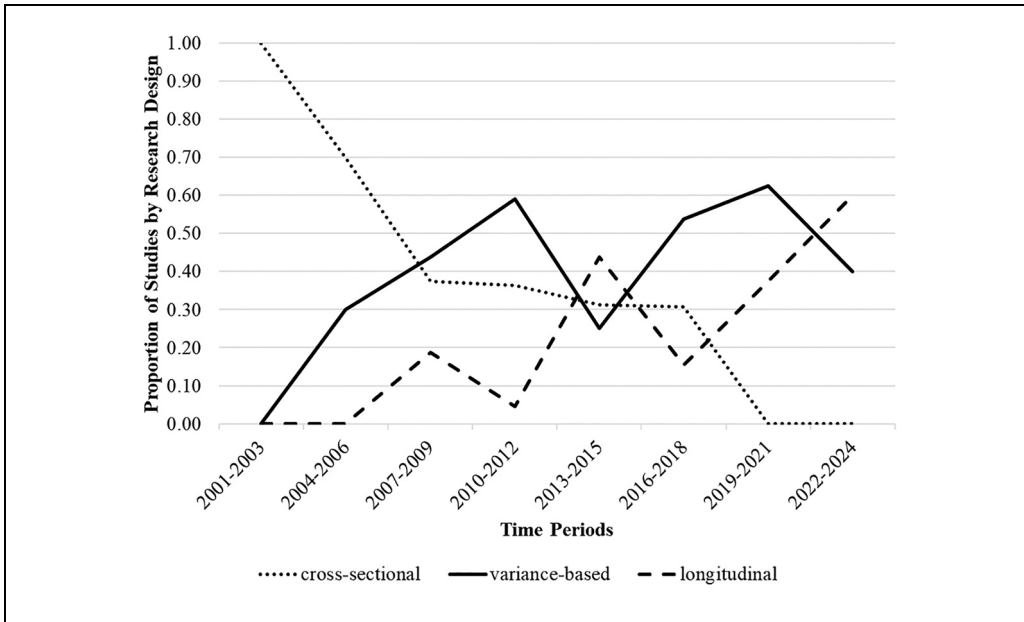


Figure 5. Distribution of Research Designs in PSED-Based Studies Over Time.

Notably, a small subset of studies focused on methodological contributions and thus fell outside the main thematic categories. For example, Schjoedt and Craig (2017) and Schjoedt and Shaver (2012) concentrated on scale development rather than theory testing, whereas Davidsson and Gordon (2012) provided a methodology-focused review. Other studies used PSED data to explore broader methodological or statistical issues in entrepreneurship research, including power law distributions (Crawford et al., 2015) and left truncation bias in survival analysis (Yang & Aldrich, 2012). Additional contributions addressed measurement concerns, such as coding open-ended responses (Gartner et al., 2008; Shaver et al., 2001) and the impact of item wording on survey responses (Reynolds, 2009). Collectively, these studies highlight the value of the PSED as a platform for advancing research methods in entrepreneurship.

Given the diversity of methodological and empirical approaches utilized, it is important to not only catalog the various approaches but also highlight key concerns and advancements. Specifically, we noticed some inconsistencies in construct labeling and operationalization that may impede cumulative knowledge development in nascent entrepreneurship research. However, we also recognized a few emerging and innovative methods, which illustrate how the PSED data has been leveraged to enhance empirical rigor and support novel theoretical insights.

Construct Clarity and Empirical Precision. Construct validity is a key concern. Across the studies, we observed notable inconsistencies in the labeling and measurement of core constructs, which pose challenges for cross-study comparability and hinder the accumulation of coherent theoretical insights. In several cases, conceptually equivalent constructs were assigned different labels, resulting in artificial distinctions that obscure theoretical integration. Furthermore, we identified variations in the operationalization of identical constructs,

Table 4. Examples of Construct Validity Issues in PSED-Based Studies.

Construct Labeling Inconsistencies	Growth orientation	Measures related to entrepreneurial growth intentions and growth aspiration appear under multiple labels, including “sales goals” and “scaling goals” (Clark et al., 2018), “growth preferences” (Cassar, 2007), “performance expectation” (McCann & Vroom, 2015), “potential of business opportunities” (Singh & Lucas, 2005), and “growth orientation” (Edelman & Yli-Renko, 2010). Similar constructs have been labeled as “perceived environmental uncertainty” (Liao & Gartner, 2006; McCann, 2017; McCann & Vroom, 2015; Patel & Fiet, 2009; Vilanova & Vitanova, 2020), “opportunity feasibility belief” (Dimov, 2010), and “perceived market opportunity” (Edelman & Yli-Renko, 2010), with different measurements: 11-item scales assessing financial, competitive, and operational uncertainty (Dimov, 2010; Liao & Gartner, 2006; McCann, 2017; McCann & Vroom, 2015; Patel & Fiet, 2009; Vilanova & Vitanova, 2020) and 2-item measures focused specifically on competitive uncertainty (Edelman & Yli-Renko, 2010)
	Environmental uncertainty	
	Entrepreneurial commitment	This construct appears under numerous labels, including “commitment” (Hopp & Sonderegger, 2015; Khan et al., 2014; Kim et al., 2015), “entrepreneurial perseverance” (Brinckmann & Kim, 2015), “subjective effort” (Laffineur et al., 2020), “intended effort to get the business started” (Renko et al., 2012), “start-up motivation” (Dimov, 2010; Hopp & Stephan, 2012), and “entrepreneurial intensity” (Kreiser et al., 2013; Schjoedt & Shaver, 2012), and “perseverance” (Hopp, 2012) measured differently from 1 to 7 items; mostly 2 items.
	Career reasons	Entrepreneurial motivations have been labeled variously as “career reasons” (Carter et al., 2003; Cassar, 2007), “desired outcomes” (Edelman et al., 2010; Manolova et al., 2012), and “non-pecuniary and pecuniary motivations” (Xu & Ruef, 2004). Furthermore, within this construct, Xu and Ruef (2004) used alternative terminology for standard items, replacing “self-realization” with “identity fulfillment,” “financial success” with “pecuniary motivation,” and “independence” with “autonomy.”
	Venture performance	The same measure of firm performance was labeled differently across studies, including terms such as “positive cash flow” (Lichtenstein et al., 2007), “venture viability” (Greene & Hopp, 2017), and “profitable firm creation” (Muñoz-Bullon et al., 2015).
	Entrepreneurial planning	The same measurement items have been labeled as “entrepreneur behavior” (Cassar, 2010) and “early planning” (Dimov, 2010), despite referring to identical activities such as business plan preparation and financial statement development.
	Planning activities	Newbert (2012) relabeled standard planning activities: “affordable loss” (for financial projections), “decision framing” (for business plan preparation), and “market and product” (for changing business activities).
	Product innovation	The same PSED item (AS1) has been labeled as “unique product” (Parker, 2011), and “innovative product/services” (Greene & Hopp, 2017), whereas Renko (2013) combined AS1 with another item on competition level (AS2) to form a broader construct labeled “novelty to the market.”

(Continued)

Table 4. (continued)

Risk assessment	The same measurement item was labeled as “strategic risk-taking propensity” by Gartner and Liao (2012) and Xu and Ruef (2004), but was considered one of three items comprising the “need for closure” construct (named, “preference for predictability”) in Schenkel et al. (2009)
Venture survival expectations	The same question measuring an entrepreneur’s estimate of venture survival probability was labeled both as “estimated likelihood of survival” (McCann, 2017) and as “outcome expectancies” (Townsend et al., 2010).
Self-efficacy	This construct shows remarkable variation in operationalization, with studies using different item counts (ranging from 1 to 6 items) and different item combinations, labeled as “Entrepreneurial self-efficacy” (Cassar & Friedman, 2009; Dimov, 2010; Khan et al., 2014), “Entrepreneurial expectancy” (Edelman et al., 2010; Manolova et al., 2012; Schjoedt & Shaver, 2012), “Ability expectancies” (Townsend et al., 2010), “Experience-based expectancy” (Patel & Fiet, 2009), “Effort-performance beliefs and instrumentality beliefs” (Laffineur et al., 2020), “expectancy, instrumentality and valence” (Renko et al., 2012), and “Starting a business” (Edelman et al., 2010; Manolova et al., 2012).
Social capital	Diverse measurements are: • Structural, relational, and cognitive dimensions (Liao & Welsch, 2005) • Mai and Zheng (2013) used the same structural and relational items from Liao and Welsch (2005) but labeled this construct as “off-the-job embeddedness” rather than as components of social capital • Number of helpers and community support (Linder et al., 2020) • Family and friend business ownership (Parker & Belghitar, 2006) • Number of supporters providing financial resources, information, and knowledge (Semrau & Hopp, 2016) • Social skills, professional social role model, and network strong/weak ties (Alomani et al., 2022)
Cultural capital	Number of critical contributors and advisors (Honig & Hopp, 2019) Conceptualized inconsistently across studies, with Kim et al. (2006) defining “cultural capital” as a binary variable for parental business ownership, whereas Parker and Belghitar (2006) included “self-employed parent” as just one item within their broader “social capital” construct.
General human capital	Parker (2011) measured this construct with an unconventional combination of age, college education, and internet usage at home, whereas the standard operationalization in other studies focused on education and experience (Brinckmann & Kim, 2015; Kim et al., 2006; Linder et al., 2020; McCann & Folta, 2012).
Startup activities	Studies vary in their measurement approach, with the number of activities measured ranging from 4 (Edelman & Yli-Renko, 2010) to 36 (Warhuus et al., 2021), with various increments between: 13 (Patel & Fiet, 2009), 14 (Renko et al., 2012), 15 (Tornikoski & Newbert, 2007), 16 (Ivanova & Tornikoski, 2022; Schenkel et al., 2009), 21 (Kreiser et al., 2013), 22 (Vlanova & Vitanova, 2020), 27 (Edelman

(Continued)

Table 4. (continued)

Venture emergence	et al., 2008), 29 (Kim et al., 2015) and 33 (Ko et al., 2021; Semrau & Hopp, 2016) activities, labeled as “Efforts to create a venture,” “strategic legitimacy,” “team productivity,” “firm founding,” and “startup progress.” Operational definitions vary from comprehensive measures including multiple indicators (hiring employees, making the first sale, receiving external financing, self-declared status; Tornikoski and Newbert, 2007) to single-item measures (positive cash flow or self-declared status; Dimov, 2010; Hopp, 2012; Hopp & Stephan, 2012; Ivanova & Tornikoski, 2022; Newbert et al., 2013; Newbert & Tornikoski, 2012; Renko, 2013; Renko et al., 2016; Tornikoski & Newbert, 2007; Vilanova & Vitanova, 2020).
Growth aspirations	Although conceptually similar, studies varied in measuring this construct through entrepreneurs’ preferences for future business size (large vs. manageable), with some labeling it as “growth aspiration” (Gartner & Liao, 2012; Greene & Hopp, 2017; Vilanova & Vitanova, 2020) and others as “growth intention” (Davis & Shaver, 2012; Edelman et al., 2010; Manolova et al., 2012).
Market/environmental dynamism	Significant measurement variations exist, with Newbert (2005) using 6 items classified from low to high, capturing industries characterized by continuous and rapid technological change, whereas Edelman and Yli-Renko (2010) used industry-level data measuring the volatility of industry growth.
Supporter network	Conceptualized differently, with Newbert and Tornikoski (2012) measuring three dimensions (structure, governance, and content), whereas Newbert et al. (2013) operationalized it with four dimensions (duration, multiplexity, frequency, and emotional intensity).

which undermines construct clarity and complicates efforts related to replication and meta-analysis. Representative examples of these issues are provided in Table 4.

To improve construct validity in panel studies like the PSED, researchers should adopt systematic validation procedures across the research lifecycle. Constructs must be clearly defined both theoretically and empirically, with validation evidence gathered at multiple stages (Flake et al., 2022): substantive (e.g., expert item reviews), structural (e.g., factor analysis), and external (e.g., correlations with related constructs). This layered approach helps ensure consistency in meaning across studies and mitigates the risk of construct drift and measurement inconsistency—common challenges in longitudinal, multi-study datasets. Additionally, the use of standardized instruments and centralized measurement repositories can reduce redundancy and promote comparability across research efforts. Scale development studies using PSED data (e.g., Schjoedt & Craig, 2017; Schjoedt & Shaver, 2012) offer strong templates for building validated measures that future research can reliably adopt. Finally, out-of-sample validation efforts, such as Cassar and Friedman's (2009) follow-up survey to assess the robustness of entrepreneurial self-efficacy and risk preference measures, demonstrate the value of testing constructs against related variables and benchmarks. These practices strengthen both the theoretical grounding and empirical precision of findings drawn from rich panel datasets like the PSED.

Emerging Methods and Analytical Innovations. Despite key challenges, several advancements have been made. For example, scholars have applied advanced techniques such as qualitative comparative analysis (QCA) to examine configurational effects (Linder et al., 2020; Villani et al., 2018), random coefficient modeling (RCM) to analyze longitudinal patterns (Newbert et al., 2013), and machine learning and AI-based methods to uncover complex relationships in large datasets (Koumbarakis & Volery, 2023). In addition, some studies have integrated PSED with external datasets to enable more context-sensitive analyses (e.g., Edelman & Yli-Renko, 2010), whereas others have engaged in novel construct creation by recombining existing PSED items into new, theoretically grounded constructs (Hopp & Sonderegger, 2015). Collectively, these innovations reflect a broader trend toward methodological sophistication and theoretical advancement. They also underscore the underutilized potential of the PSED to generate new knowledge in entrepreneurship research. Additional illustrative examples of these contributions are provided in Table 5.

Future Research Agenda

Our review of PSED-based studies highlights the considerable untapped potential of these datasets, as well as future research initiatives of this kind, for generating new theoretical and empirical insights. Building on our integrative framework, we propose a future research agenda aimed at leveraging the distinctive features of the PSED. Although acknowledging that scholarship on nascent entrepreneurship extends beyond the studies reviewed here, we focus on key gaps that the PSED datasets are uniquely positioned to address. This agenda does not aim to offer an exhaustive account of all unresolved questions in the literature but rather emphasizes high-impact areas that can benefit from the rigorous utilization of PSED data.

First, our analysis reveals a surprising underutilization of longitudinal research, despite the PSED's design as a multi-wave panel dataset. A key direction for future research involves adopting a longitudinal lens to investigate the temporal evolution of entrepreneurial phenomena, such as shifting motivations, team dynamics, and opportunity development.

Table 5. Examples of Innovative Analytical Strategies in PSED-Based Studies.

Methodological innovations	Frid, Wyman, et al. (2016) employed the double-hurdle Cragg Model to simultaneously investigate two entrepreneurial decisions, providing a nuanced understanding of decision-making processes. Addressing concerns of endogeneity, Greene and Hopp (2017) utilized propensity score matching, enhancing the robustness of causal inferences in their analysis. Gartner et al. (2008) innovatively coded responses to open-ended questions, enabling the categorization of opportunities and problems in a systematic manner. Moving beyond hypothesis-driven studies, Lewis et al. (2024) applied a longitudinal analysis based solely on framing questions, providing a fresh perspective on entrepreneurial dynamics over time. Qualitative Comparative Analysis (QCA), was employed by Linder et al. (2020) and Villani et al. (2018) to examine how multiple causal conditions jointly influence outcomes, offering a configurational perspective on entrepreneurial strategies. Newbert et al. (2013) leveraged random coefficient modeling (RCM) to analyze longitudinal data, capturing changes in tie strength heterogeneity over time and providing dynamic insights into entrepreneurial networks. Further methodological innovation emerged with Crawford et al. (2015), who challenged conventional assumptions by demonstrating that PSED variables follow a power-law distribution rather than a normal distribution, prompting a reevaluation of analytical approaches. Cassar and Friedman (2009) conducted an out-of-sample validity survey to establish the convergent and discriminant validity of their entrepreneurial self-efficacy (ESE) measure by comparing it with established constructs such as entrepreneurial self-efficacy, general self-efficacy, and overconfidence. Koumbarakis and Volery (2023) introduced machine learning methods to predict new venture gestation outcomes, comparing traditional logistic regression with advanced AI techniques and identifying key factors influencing firm emergence and abandonment.
Data innovations	Edelman and Yli-Renko (2010) incorporated industry-level data on the value of shipments to calculate environmental dynamism and munificence, contextualizing entrepreneurial activities within broader industry trends. Edelman et al. (2008) complemented PSED data with content from entrepreneurship textbooks, offering a unique blend of empirical and theoretical insights. Ivanova and Tornikoski (2022), Lewis et al. (2024), and Linder et al. (2020) utilized multiple international datasets, including CAUSEE, CH-PSED, and SE-PSED, enhancing the generalizability of findings. Crawford et al. (2015) further expanded the data landscape by incorporating CAUSEE, Kauffman Firm Survey (KFS), and Inc. 5000 (INC) datasets, providing a comprehensive view of entrepreneurial dynamics. Researchers have leveraged occupational databases, as seen in Kim and Longest (2014) and Laffineur et al. (2020), who used O*NET data to analyze occupational characteristics such as interaction levels, analytical thinking, managerial knowledge, self-accomplishment, and arduousness, linking prior work experiences to entrepreneurial outcomes. Kotha and George (2012) augmented PSED with industry-level financial data, such as debt-to-equity, that is, leverage ratio, to control for industry-specific financial structures. Yang and Del Carmen Triana (2019) utilized U.S. Census Bureau data to classify industries as male- or female-dominated, shedding light on gender-related entrepreneurial patterns.

(Continued)

Table 5. (continued)

Construct Innovations	Kreiser et al. (2013) developed the construct of “social competence,” akin to emotional intelligence, offering a new lens for examining interpersonal dynamics in entrepreneurship. Mai and Zheng (2013) introduced “on-the-job embeddedness,” exploring how links, fit, and sacrifices in prior jobs influence employees’ likelihood of starting ventures. McCann and Folta (2012) expanded the literature on entrepreneurial entry by developing the concept of “entrepreneurial entry threshold,” focusing on the level of expected performance required to trigger entrepreneurial entry. Oe and Mitsuhashi (2013) addressed the information transformation between founding team members by introducing “information interpretation and distribution” as a moderating factor in the relationship between founders’ prior experiences and the speed of reaching break-even points. Patel and Fiet (2009) developed the construct of “discovery mode” as a proxy for systematic search behavior in entrepreneurship, distinguishing it from opportunity alertness. Chen et al. (2018) developed two constructs—“abstractness of entrepreneurial action (ranging from abstract thinking to concrete doing)” and “psychological distance (including temporal, spatial, social, and hypotheticality dimensions)” —to bridge entrepreneurial activities with cognitive processes. Hopp (2012) introduced a refined measure of “perceived emergence,” a construct integrating revenue generation and entrepreneur-reported operational status whereas accounting for disengagement among team members. Hopp and Sonderegger (2015) created “Pre-startup intentions” by combining “commitment” and “ability expectations” items.
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Given the richness and breadth of available data, scholars can also employ advanced analytical techniques—such as machine learning and other big data methods—to uncover novel empirical insights that may inform new theoretical developments. As shown in Table 5, there are emerging examples of such methodological innovations, which could be further expanded. Replication studies employing these new analytical tools also represent a promising avenue for inquiry.

Our integrative framework demonstrates that prior research has predominantly focused on unidirectional relationships—particularly how individual-level factors affect outcomes at the individual, process, or venture levels (e.g., individual–individual, individual–process, individual–venture effects). However, relatively few studies have examined how process- or venture-level factors reciprocally can influence the entrepreneur (i.e., process–individual and venture–individual effects), or how venture characteristics may impact the progression of the entrepreneurial process (venture–process effects). Future research should explore these bidirectional and recursive relationships to more accurately capture the co-evolution and mutual shaping of the entrepreneur, the venture, and the entrepreneurial process. Such inquiry would align with contemporary perspectives that conceptualize entrepreneurship as a dynamic, interactive, and emergent phenomenon.

Scholars can also capitalize on the several underexplored constructs embedded within the PSED datasets. Psychological and behavioral traits—such as optimism,² tolerance for ambiguity,³ sunk cost sensitivity,⁴ perceptions of value of external support,⁵ and opportunity pivots⁶—remain insufficiently examined in the extant literature. These constructs offer significant opportunities for theoretical refinement and empirical inquiry, particularly when analyzed within integrative frameworks encompassing individual, process, and venture levels. Notably, these constructs can serve both as independent variables, influencing entrepreneurial behaviors and outcomes, and as dependent variables that are shaped by factors such as prior experience, environmental conditions, or venture characteristics. Table A1 provides a comprehensive list of constructs examined in PSED-based studies, along with their corresponding codebook references to support future PSED-based research. Furthermore, as highlighted in Table 5, PSED variables facilitate innovative approaches to construct development, enabling the creation and validation of novel measures grounded in entrepreneurial theory.

Finally, this review focused on studies using the U.S.-based PSED datasets (PSED I and II), excluding research based on international variants such as Australia's CAUSEE, China's CH-PSED, Sweden's SE-PSED, and others. Although this focus ensured methodological consistency and comparability, it limits the ability to account for institutional, cultural, and economic variation across contexts. As a result, the generalizability of our findings may be constrained. Future research should leverage the growing number of harmonized international PSED-type datasets to explore cross-national similarities and differences, helping to distinguish between universal entrepreneurial mechanisms and those shaped by context-specific institutional environments. PSED-type datasets also can serve as a data source for replicating PSED I and II studies to confirm our understanding of nascent entrepreneurship (Crawford et al., 2022).

Future Research Directions: Venture-Focused

The PSED datasets offer valuable, yet underutilized, opportunities to advance our understanding of where new firms originate and through what processes they emerge. First, future research should adopt a longitudinal and process-oriented approach to examine how

NEs' characteristics shape team dynamics and venture outcomes. For example, although PSED I and II offer extensive multi-wave data on NEs' perceptions of competition and strategic behavior, these datasets remain underutilized for analyzing how such perceptions influence entrepreneurial actions, resource allocation, and venture performance over time. Additionally, key attributes such as emotional regulation and cognitive orientation require further scholarly attention. Emotional competencies are particularly relevant for navigating the uncertainty and pressure of early-stage entrepreneurship, yet they have received limited empirical investigation (De Cock et al., 2020; Kreiser et al., 2013). Similarly, cognitive traits likely affect how NEs form and lead teams, influencing choices around team composition, leadership roles, and collaboration strategies. Future studies should harness the longitudinal strengths of the PSED to investigate how these individual-level traits develop and impact team and venture-level outcomes across different stages of the entrepreneurial process.

Second, future research should deepen our understanding of how team dynamics influence venture performance. In particular, the team formation process merits closer examination. The PSED datasets offer a valuable opportunity to investigate how early-stage team configurations—or the absence of a formal team—affect the initial structure, strategic orientation, and developmental trajectory of new ventures. Additionally, the PSED's detailed data on interpersonal relationships among team members (e.g., spouses, family, friends), and distinctions between equity-holding and non-equity contributors, enable the exploration of diverse team compositions. Future studies could examine how variables such as demographic profiles, prior work experience, financial contributions, and time commitment of team members shape venture emergence and performance. Longitudinal analyses of these factors would advance our understanding of how founding teams evolve over time and how relational dynamics within these teams impact venture outcomes.

Third, future research should further examine the influence of resource deployment on venture performance, with particular emphasis on the dynamic and configurational nature of these resources. The PSED datasets provide longitudinal data on NEs' human, social, and financial capital, enabling researchers to analyze how resource profiles change over time. Rather than evaluating resources in isolation, future research should study how different configurations and complementarities among resources jointly shape venture outcomes. Furthermore, longitudinal analysis can shed light on how entrepreneurs reallocate or adapt their resource strategies in response to evolving venture demands. Such inquiries would advance understanding of the resource orchestration processes essential to early-stage entrepreneurial success.

Fourth, future research should explore how entrepreneurial activities and processes shape venture development, with attention to their timing, sequence, and pacing in addition to type and volume. Lewis et al. (2024) show that ventures perform better when entrepreneurs begin with stakeholder engagement (e.g., customer feedback, promotion), then move to strategic planning, followed by formalization steps like registration. This sequence challenges traditional models that emphasize early planning and underscores the value of early market interaction. Research should also examine whether different venture types—such as tech startups versus service businesses—follow distinct gestation patterns and whether certain activity sequences promote innovation or legitimacy. Additionally, periods of inactivity remain an underexplored component of the entrepreneurial process. Future studies should investigate the antecedents, duration, and consequences of such pauses to better understand their role in shaping venture outcomes.

Fifth, future research should broaden the scope of outcomes examined in studies of nascent ventures, with particular emphasis on exit and re-entry. PSED II provides data on

reasons for venture termination and whether NEs pursue new ventures post-failure, offering valuable insights into entrepreneurial failure, resilience, and recycling. Scholars should examine how NEs interpret and respond to failure, and how learning from abandoned ventures informs future efforts. Importantly, not all exits constitute failure; some represent strategic disengagement that may be considered a positive outcome (Yusuf, 2012). By incorporating a wider range of venture outcomes, research can offer a more nuanced understanding of nascent entrepreneurship.

Finally, contradictions in existing research warrant further investigation. For instance, whereas some studies find that entrepreneurial self-efficacy positively influences the number of activities undertaken (Hopp & Sonderegger, 2015) and overall effort (Laffineur et al., 2020), others find no such relationship (Renko et al., 2012). In the domain of planning, Brinckmann and Kim (2015) show that self-efficacy drives engagement in structured planning, whereas Greene and Hopp (2017), treating self-efficacy as a control variable, report no significant effect. Furthermore, although many studies suggest that planning enhances venture success, Parker and Belghitar (2006) and Hechavarria et al. (2012) found no direct relationship and even suggest that highly self-efficacious entrepreneurs who plan may be more inclined to abandon their ventures. Clarifying these inconsistencies represents a valuable direction for future research, particularly in understanding when and for whom self-efficacy and planning are most effective.

Future Research Directions: Individual-Focused

Future research should continue to explore and refine our understanding of NEs. One important direction involves further distinguishing entrepreneurs from non-entrepreneurs—an opportunity uniquely afforded by PSED I, the only dataset that includes a non-entrepreneur comparison group. Although PSED II lacks this feature, PSED I remains a valuable resource for examining foundational differences in family background, cognitive style, problem-solving orientation, immigration status, and attitudes toward entrepreneurship. Leveraging these distinctions can advance theoretical clarity regarding who chooses to become an entrepreneur and why, thereby deepening insights into early-stage entrepreneurial decision-making.

Future research should also further investigate the underlying drivers of entrepreneurial entry. PSED I's consistent measurement of entrepreneurial motivations across multiple waves enables longitudinal investigations into how these motives evolve over time and the factors contributing to such shifts. Although PSED II lacks this longitudinal feature, it provides rich cross-sectional data on the composition and prioritization of entrepreneurial motives, facilitating analysis of how different motivational profiles influence entry pathways and venture outcomes. In addition, future research should focus more on underrepresented groups—such as women, minorities, and older adults—to examine the unique barriers they face and the resources or support mechanisms that may improve their entrepreneurial outcomes (Köllinger & Minniti, 2006). Moreover, findings from PSED challenge longstanding assumptions that risk tolerance and dissatisfaction with previous employment are primary entry drivers (Gartner & Liao, 2012; Schjoedt & Shaver, 2007). Future studies should reassess these assumptions and explore alternative influences, such as market conditions, employer support, and changing opportunity costs. Collectively, these directions can foster a more nuanced and inclusive understanding of the antecedents to entrepreneurial entry.

Moreover, future research should further investigate heterogeneity among NEs, with particular emphasis on intersectionality—how combinations of attributes (e.g., being a minority

female entrepreneur in a rural area) jointly shape entrepreneurial experiences and outcomes. Scholars should also develop nuanced typologies of NEs based on distinctive entry paths or traits, including necessity-driven, academic, or franchise-based entrepreneurs, those with family business backgrounds, and individuals who have pivoted or engaged in entrepreneurship education. Comparing these groups across outcomes such as business performance, resource mobilization, cognition, and motivation can yield important insights. Family-based nascent entrepreneurship, in particular, remains an understudied but promising area of inquiry (Ko et al., 2021). Additionally, the increasing availability of large-scale panel and administrative datasets enables the application of advanced analytics and machine learning to uncover predictive patterns and success profiles within NE subgroups.

Finally, future research should broaden the scope of individual-level outcomes in NE studies. PSED I offers a unique advantage by tracking entrepreneurial motivations, expectations, and cognitive states—such as well-being, job satisfaction, self-efficacy, commitment, feasibility beliefs, and attitudes toward entrepreneurship—across multiple waves. These data enable researchers to investigate how such outcomes evolve over time and are influenced by key entrepreneurial experiences. One promising direction is to examine how venture status, across waves (e.g., achieving emergence or facing discontinuation), shapes NEs' future commitment, confidence, and aspirations. Understanding how NEs' psychological profiles develop in response to their venture trajectories can enrich existing models of entrepreneurial journey.

Future Research Directions: Process-Focused

The PSED datasets holds significant potential for advancing theoretical insights into the early-stage venture development process. For example, the data could be used to empirically test models such as the Lean Startup framework (Shepherd & Gruber, 2021), which stresses iterative experimentation and customer feedback, or entrepreneurial ambidexterity (Raisch & Birkinshaw, 2008), which examines how NEs manage the tension between exploration and exploitation. These models can help elucidate dynamic patterns in how NEs navigate early-stage challenges.

PSED's tracking of entrepreneurial activities (e.g., market research, planning, competitive analysis, resource procurement, and legal registration) offers a valuable opportunity to examine the factors influencing activity selection and implementation. A particularly promising line of inquiry involves analyzing the sequencing of these activities: identifying which sequences or combinations are most frequently adopted and most strongly associated with favorable outcomes across different contexts or venture types. Scholars have recommended analytical methods such as sequence analysis and process mining (Lichtenstein et al., 2007) to categorize typical developmental pathways and assess whether specific early actions—such as prototyping or market validation—systematically influence the trajectory of the entrepreneurial journey.

Another promising direction involves using PSED for quasi-experimental analyses, such as employing propensity score matching, to explore causal links within the entrepreneurial process. For example, researchers could simulate counterfactual scenarios (e.g., what if an entrepreneur delayed drafting a business plan?) to infer the causal effects of timing and sequencing decisions. Additionally, incorporating psychological and emotional dimensions—such as NEs' confidence levels, stress responses, and rationale for pivots—would enrich the process data and offer a more comprehensive view of the entrepreneurial journey.

Finally, future research should expand its focus on venture-level characteristics that influence the unfolding of entrepreneurial processes. Although prior PSED studies have explored dimensions such as team heterogeneity and venture innovativeness, other important factors remain insufficiently examined. For example, demographic diversity within teams—such as differences in age and gender—may impede team cohesion and reduce overall engagement (Ko et al., 2021). Similarly, ventures pursuing external funding often adopt more structured strategies, including formal planning and the employment of accounting professionals, to address financial and operational complexities (Cassar & Ittner, 2009; Greene & Hopp, 2017). However, additional venture characteristics—such as network embeddedness, resource endowments, team structures, leadership roles, and venture status—have not been systematically studied and offer valuable avenues for future research on the entrepreneurial process.

Future Research Directions: Context-Focused

There is increasing interest in embedding context into nascent entrepreneurship research. One promising approach is linking PSED data with regional- or industry-level datasets to examine how external factors—such as local economic conditions, population density, or industry innovation rates—shape entrepreneurial activity. Although PSED lacks detailed geographic data, it can still be merged with regional indicators to yield meaningful insights. For example, Edelman and Yli-Renko (2010) used industry shipment values to assess environmental munificence and dynamism, and Tetteh et al. (2024) showed that population and employment rates affect entrepreneurial entry. Incorporating such state-level indicators could clarify how geographic and institutional contexts influence entrepreneurial processes and venture emergence.

Moreover, PSED II includes targeted questions in waves 1, 5, and 6 that offer valuable information on community environments by capturing local norms related to personal effort, self-sufficiency, autonomy, risk-taking, and innovation. Currently, Hopp and Stephan (2012) is the only study to systematically explore these dimensions, leaving room to expand this line of inquiry about how environmental factors shape entrepreneurial behavior, resource allocation, and venture outcomes. Longitudinal analysis could also reveal how NEs' perceptions of their local environment evolve and influence decision-making over time. Further, future studies could follow Liguori et al. (2019), integrating PSED with broader indicators of entrepreneurial ecosystems—such as unemployment, economic growth, or cultural norms—to enable multilevel analyses that more precisely capture the effects of context.

Another promising future research avenue is examining understudied contexts. Rural entrepreneurship, for instance, has received relatively little attention despite the prevalence and importance of rural NEs in the U.S. and elsewhere. Industry context also offers valuable opportunities, such as comparing tech-based and non-tech ventures using PSED data may yield insights that inform context-specific theorizing. Moreover, socio-cultural contextual factors remain underexplored. PSED II, in particular, contains indicators that can be used to examine more nuanced cultural influences, such as community-level attitudes and media exposure, which may shape entrepreneurial behavior.

Finally, with PSED data spanning different economic periods (PSED I around 1999–2003, PSED II mid-2000s), future work could examine how macro-context (boom vs. recession) affects nascent entrepreneurship by comparing cohorts. This could illuminate how environmental shifts (e.g., the 2008 financial crisis) impact entrepreneurial entry and success. In sum, future PSED-based research should aim to interweave context into models of

nascent entrepreneurship, moving beyond treating context as background and instead treating it as an integral part of the entrepreneurial process that varies across geographies, markets, and cultures.

Discussion

Our review highlights the major contributions of PSED-based studies to entrepreneurship research, offering longitudinal insights into the earliest stages of venture creation. By tracking NEs from conception to launch or abandonment, this research has advanced understanding of how venture, individual, processual, and contextual factors shape outcomes. The PSED's rigorous design enables theory-driven inquiry and methodological innovation, reinforcing its foundational role in generating evidence-based insights into nascent entrepreneurship.

Implications for Theory

Our review of PSED-based studies offers three key contributions. First, we present a novel framework that offers a comprehensive view of the nascent entrepreneurship field by delineating its core dimensions and highlighting their interrelationships. This framework facilitates the classification of studies across different levels of analysis and promotes the integration of previously fragmented insights. The PSED was originally developed to address two foundational questions: "Where do new firms come from?" and "What are the major processes that lead to their emergence?" Our synthesis of PSED-based research assesses the extent to which these questions have been addressed and underscores the cumulative knowledge generated. Additionally, we demonstrate how the PSED has been utilized to investigate broader foundational questions in entrepreneurship, including: *Who becomes an entrepreneur, and why? What do entrepreneurs do, and how? Does context matter, and in what ways?* Taken together, our framework provides a conceptual roadmap for organizing the literature, guiding future inquiry, and advancing theoretical development in the study of nascent entrepreneurship.

Second, we extend the discussion on nascent entrepreneurship by highlighting how its core elements—the entrepreneur, the venture, and the process—interlock and co-evolve. In doing so, we contribute to the entrepreneurship-as-emergence perspective, which frames the entrepreneurial journey as a nonlinear, adaptive process shaped by iterative and self-organizing interactions among entrepreneurs, opportunities, and contextual forces (Goldstein, 1999; Lichtenstein et al., 2007). These elements evolve through feedback loops, tipping points, and improvisation in response to uncertainty and change (Lichtenstein et al., 2006; Morris & Webb, 2015). Notably, emergence encompasses not only the development of ventures, but also the evolution of entrepreneurial identities and organizing processes, each dynamically shaping and being shaped by the others over time (Dimov, 2010; Katz & Gartner, 1988).

Our synthesis of the literature and integrative framework underscores this emergent nature by highlighting the bidirectional effects among the entrepreneur, the venture, the process, and their contextual embeddedness. These components mutually shape one another through learning, adaptation, and organizing behaviors. Entrepreneurial identities and aspirations evolve not in isolation but in constant interaction with the emerging venture and the unfolding process. As entrepreneurs engage with the uncertainties and challenges of venture creation, their evolving self-concept and goals reflect and reshape the

direction of the venture. Likewise, the venture is not merely a product of entrepreneurial intent, but also of processual experimentation and contextual feedback, which in turn influence the entrepreneur's orientation and the structure of the process itself. In this way, the entrepreneur, the venture, and the process co-emerge within a dynamic sociocultural and economic context (Morris & Webb, 2015).

Third, we leverage our integrative framework to propose a future research agenda for the study of nascent entrepreneurship, aimed at advancing and enriching both theoretical and empirical discourse in the field. By identifying underexplored intersections among the entrepreneur, the venture, the process, and the context, the agenda outlines promising directions for inquiry and offers guidance on how scholars can unlock the untapped potential of the PSED. In doing so, we aim to foster new research streams grounded in PSED data and to promote more integrative, methodologically robust, and cumulative efforts to advance understanding of the nascent entrepreneurship phenomenon.

Implications for Practice

Findings from PSED-based research offer important implications for entrepreneurs and educators by revealing critical discrepancies between textbook portrayals of entrepreneurship and the actual experiences of NEs (Edelman et al., 2008). Activities commonly emphasized in formal education—such as writing business plans or applying for patents—are often infrequently performed in practice and exhibit weak associations with venture success. Conversely, routine yet foundational activities like purchasing raw materials, filing tax returns, and hiring employees—each strongly linked to early venture progress—are typically underrepresented in educational content and in entrepreneurs' preparation. These findings underscore the need to realign entrepreneurship education and training with the empirical realities of venture creation.

In addition, the PSED-based research highlights the value of fostering an emergent and adaptive mindset. Entrepreneurs who engage in iterative learning, remain open to revising their goals, and actively reshape both their ventures and their entrepreneurial identities through hands-on activities are better equipped to navigate uncertainty and respond to evolving opportunities. Adopting this experiential, process-oriented approach can significantly enhance entrepreneurs' readiness and likelihood of success.

Beyond educational and entrepreneurial practice, findings from PSED-based research hold considerable promise for informing policy. The dataset's unique design—featuring a nationally representative sample and longitudinal tracking of NEs—makes it a reliable source of evidence on early-stage venture dynamics. Insights derived from PSED can guide policies aimed at reducing entry barriers, supporting underrepresented groups, and improving entrepreneurial outcomes across diverse populations. For example, studies using PSED data have been cited by the Organisation for Economic Co-operation and Development (OECD) in reports on race-based disparities in entrepreneurial motivation (Edelman et al., 2010) and entrepreneurship among individuals with disabilities (Renko et al., 2016), demonstrating the potential of this research to shape inclusive, evidence-based policy (OECD, 2023; Raes, 2021). Nevertheless, the relative underutilization of these insights in policymaking highlights a valuable opportunity for stronger engagement between researchers and policy stakeholders.

Conclusion

This review of 95 PSED-based studies underscores the significant role these datasets have played in advancing scholarly understanding of how entrepreneurs and ventures emerge.

We aim for this review to reflect how effectively the PSED has fulfilled its original objectives and to highlight its broader contributions to the field of nascent entrepreneurship. In doing so, we acknowledge the enduring legacy of the PSED initiative while identifying critical gaps that future research can address by further leveraging the dataset's untapped potential. More broadly, this review demonstrates the substantial value of large-scale, longitudinal data collection efforts and the lasting insights they can produce—thereby making a strong case for renewed investment in future PSED-like initiatives.

Appendix A

The Panel Study of Entrepreneurial Dynamics (PSED): An Overview

The PSED research programs—PSED I (1998–2004) and PSED II (2005–2011)—constitute longitudinal efforts that have significantly advanced scholarly understanding of how people start businesses (Müller et al., 2023). The development and execution of the PSED projects were supported by a consortium of academic and policy-oriented institutions. PSED I was initiated by the Entrepreneurial Research Consortium (ERC), comprising 34 research organizations, with later phases funded by the Kauffman Foundation and the National Science Foundation (NSF). Data collection was initially conducted by Market Facts and the University of Wisconsin Survey Research Laboratory, and later by the University of Michigan's Institute for Social Research (ISR). PSED II was led by the Kauffman Foundation for its early phases, with subsequent support from the NSF and the U.S. Small Business Administration Office of Advocacy. All waves were administered by ISR, ensuring methodological continuity and data quality (Gartner et al., 2004; Reynolds, 2006; Reynolds et al., 2016; Reynolds & Curtin, 2008, 2011). The University of Michigan, specifically its Survey Research Center (SRC) and Institute for Social Research (ISR), plays a central role in the PSED initiatives. The website for accessing PSED data is www.psed.isr.umich.edu through ICPSR (Gartner et al., 2004).

PSED I began with a random telephone survey of 64,622 U.S. adults, ultimately identifying 1,261 individuals, including 830 potential nascent entrepreneurs (NEs) and 431 comparison group members—individuals not involved in start-up activities (the initial screening phase) (Davis & Shaver, 2012; Reynolds & Curtin, 2004a). NEs identified in the screening phase participated in detailed interviews (initial interview-Wave 1). Participants were followed through three additional waves via telephone and mail over a 40-month period (Reynolds & Curtin, 2011). Notably, PSED I included targeted oversamples of women and ethnic minorities to enhance representativeness (Reynolds & Curtin, 2004a, 2008, 2011).

PSED II expanded upon this framework with improvements based on the limitations identified in PSED I. A sample of 31,845 adults yielded 1,214 NEs through a refined screening process (Honig & Hopp, 2019; Villani et al., 2018). This cohort was tracked through six waves of phone interviews at annual intervals, yielding a dataset comprising over 8,000 variables (Curtin & Reynolds, 2018, 2021). Table 1 summarizes the key differences between the datasets.

The PSED codebooks document an extensive array of variables categorized into theoretically grounded domains, including sociodemographic background, psychological and cognitive traits, start-up activities, enterprise characteristics, resources, teams, contextual factors, future expectations and outcomes of the start-up attempt. This multidimensional structure allows researchers to investigate a range of hypotheses concerning entrepreneurial behavior and outcomes (Gartner et al., 2004).

To enable generalizability, both datasets employ post-stratified case weights based on demographics like sex, age, household income, and race using data from sources like the Current Population Survey, correcting for selection probabilities and nonresponse rates. Scholars are advised to re-center weights when analyzing subsamples to maintain population representativeness (Curtin & Reynolds, 2004; Davis & Shaver, 2012; Reynolds & Curtin, 2008). Furthermore, the data cleaning process, especially the use of Kelly Shaver's "kscleans06.sps" algorithm, was critical in filtering cases, thereby ensuring analytical rigor. This cleaning process involved removing cases that should have been classified as infant firms, businesses to be majority-owned by a business entity, and comparison group respondents with any startup activity (Davis & Shaver, 2012; McCann, 2017; Reynolds & Curtin, 2004b).

The PSED has been adapted in multiple countries, including the U.S. (PSED I and II), Australia (CAUSEE), China (CH-PSED), and Sweden (SE-PSED), following a standardized research design. These studies all employ population-based screening to identify individuals engaged in new business creation and conduct longitudinal follow-ups to track venture outcomes, such as profitability or abandonment. Although the core methodology remains consistent—such as defining firm birth based on sustainable revenue—minor differences exist in implementation. For example, CH-PSED included business registration as an additional success criterion, whereas other cohorts primarily relied on financial sustainability. This harmonization allows for cross-national comparisons while accommodating local economic conditions (Reynolds et al., 2016).

Notable distinctions arise in sample composition, geographic scope, and study duration. The U.S. PSED cohorts surveyed significantly larger populations compared to CAUSEE or CH-PSED, reflecting differences in research scale and funding availability. Geographically, PSED I, II, and SE-PSED adopted nationwide sampling, whereas CH-PSED focused exclusively on urban centers. Furthermore, follow-up periods varied substantially, with SE-PSED extending beyond six years, in contrast to CH-PSED's two-year timeframe. These methodological divergences underscore the adaptability of the PSED framework while highlighting challenges in achieving full comparability. Researchers leveraging these datasets must explicitly account for such variations when drawing cross-country inferences (Reynolds et al., 2016).

Studies utilizing PSED-type datasets can be classified into three broad categories based on their alignment with and extension of U.S. PSED findings. The first category includes studies that examine the same research domains as the U.S. PSED—such as factors influencing entry, entrepreneurial challenges, and the role of human and financial capital—largely corroborating the findings of PSED I and II. For example, investigations into the effects of formal education on entrepreneurial entry (Davidsson & Honig, 2003; Kim et al., 2006) or the impact of planning on venture performance (Delmar & Shane, 2003; Greene & Hopp, 2017) have demonstrated consistent results across Swedish and U.S. datasets.

The second category includes studies that utilize PSED-type data from other countries but shift the focus to survey questions that differ from those in the U.S. PSED (Davidsson et al., 2017), or analyze entrepreneurial responses in relation to contextual factors such as economic crises (Davidsson & Gordon, 2016). These studies draw on unique national datasets to address localized research questions. The third category involves integrating U.S. PSED data with international counterparts to test universal hypotheses or conduct cross-national comparisons. Recent examples include analyses of venture termination dynamics (e.g., Ivanova & Tornikoski, 2022) and replications of foundational studies using alternative datasets (e.g., Skorodziyevskiy et al., 2025; Zolin et al., 2013). Such research contributes to theoretical generalizability while identifying boundary conditions for entrepreneurial phenomena.

Table A1. Overview of Variables in PSED-Based Studies With Codebook References.

Category	Variables	Section in PSED I	Section in PSED II
Individual-focused Demographics and Personal Background	• Age, Gender, Race • Household • Parental Status • Marital Status	Demographic Section	Screener
Motivations	• Career reasons (Self-realization, Financial Success, Roles, Status/Recognition, Independence/Autonomy, innovation) • Achievement of Life Goals • Growth Aspirations (large vs. manageable)	Mail Questionnaire	Respondents' Motivation
Entrepreneur type	• Social • Disabled, Homemaker • Intrapreneur • Leisure-based, Science or Technology-based	Start-Up Investments, Debts, and Net Worth	Future Expectations and Motivation
Career experience and background	• Prior Job Satisfaction, Full or Part-time • Sales Background • Experience Diversity • Prior Job Embeddedness	Personal Information Status of Start-Ups Mail Questionnaire	Status of Business Respondents' Information Screener Um Questions Status of Business
Resources	• Human Capital • Cognitive Capital • Social Capital • Financial Capital	Mail Questionnaire	Screener
		Respondent Occupation Personal Information & Mail Questionnaire	Market & Competition
		Diverse measurements mostly in respondent occupation and personal information	Owner Demographics; Respondents' Motivation; Respondents' Characteristics Owner Demographics
		Diverse measurements mostly in Mail Questionnaire & Start-Up Employees	—
		Diverse measurements mostly in Helpers and Assistance; Startup Team; & Mail Questionnaire	Key Non-Owner Demographics; Helper Demographics
		Personal Information; Start-Up Investments, Debts, and Net Worth	Household Information; Start-Up Investments, Debts, and Net Worth

(Continued)

Table A1. (continued)

Category	Variables	Section in PSED I	Section in PSED II
<i>Decision-making</i>	• Decision to Enter • Industry Choice	Mail Questionnaire Respondent Occupation; Start-Up Team	— Owner Demographics; Key Non-Owner Demographics
<i>Cognitions and perceptions</i>	• Adaptive Decision-Making • Time Dedication • Risk-taking Propensity • Learning Orientation • Psychological Distance	Personal Information — Mail Questionnaire Characteristics of Start-Ups Active Start-Ups; Start-Up Revenue and Competition; Start-Up Team; Helpers and Assistance; Mail Questionnaire	— Owner Demographics Start-Up Activities
	• Attitude Toward Entrepreneurship • Entry Threshold	Personal Information Start-Up Employees	— Future Expectations and Motivation
<i>Traits and Competencies</i>	• Hindsight Bias • Need for Closure • Self-Efficacy, Perseverance, Ability to Commit • Searching Skills • Social Competence • Analytical Skills, Interactive Skills	Start-Up Investments, Debts, and Net Worth; Start-Up Activity No Longer Pursued Mail Questionnaire Mail Questionnaire Mail Questionnaire Mail Questionnaire	— Respondents' Characteristics
<i>Venture-focused Team structure</i>	• Collaboration Size • Leadership • Information Distribution & Interpretation	Legal Form of Start-Up Start-Up Team; Relationships Among Start-Up Team; Characteristics of Start-Ups	Owners, Key Non-Owners, and Helpers Owners, Key Non-Owners, and Helpers

(Continued)

Table A I. (continued)

Category	Variables	Section in PSED I	Section in PSED II
<i>Resources</i>	• Equity Distribution	Start-Up Team	Owners, Key Non-Owners, And Helpers
	• Team Resource	Start-Up Team	Owner Demographics
	• Heterogeneity		
	• Team Composition & Homophily	Start-Up Team	Owner Demographics
	• Family/Spousal Relationships	Relationships Among Start-Up Team	Relationship of Owners
	• Team Human Capital	Start-Up Team	Owner Demographics
	• Financial Capital, Source & Timing	Start-Up Team; Start-Up Investments, Debts, and Net Worth	Start-Up Investments, Debts and Net Worth
	• Social Capital and Supporter Networks	Start-Up Team; Helpers and Assistance	Owners, Key Non-Owners, And Helpers; Helper Demographics
	• Team Time Investment	Start-Up Team	Owner Demographics
	• Cost of Resources	Helpers and Assistance	—
<i>Characteristics and goals</i>	• Resource Specificity	Helpers and Assistance	—
	• Intended Growth (sales or employees), Sales Expectations	Start-Up Employees	Future Expectations and Motivation
	• Survival Likelihood	Start-Up Investments, Debts, and Net Worth	—
	• Product Innovativeness	—	Market and Competition
	• Status (e.g. operating, still trying, disengaged)	Status of Start-Ups	—
<i>Performance</i>	• Organizational Emergence	Characteristics of Start-Ups	Status of Business
	• Actual Sale	Start-Up Revenue and Competition	Expense Structure
	• Positive Cash Flow, First Sale	Characteristics of Start-Ups	Status of Business
	• Sequence of Activities	Characteristics of Start-Ups	Start-Up Activities
<i>Process-focused Stages of activities</i>	• Activities' Resource Demand	Characteristics of Start-Ups	Start-Up Activities
	• Intended Frequency of Financial Statements	Mail Questionnaire	—
	• Planning & Implementing	Characteristics of Start-Ups	Start-Up Activities
	• Legitimacy Seeking Effort		

(Continued)

Table A1. (continued)

Category	Variables	Section in PSED I	Section in PSED II
<i>Quality and quantity of activities</i>	• Planning, Boundary Creation & Stakeholder Enrollment • Activities Related to Intentionality, Resources, Boundary and Exchange • Diverging vs Assimilating • Accommodating versus Converging • Effectuation and Causation Activities • Abstractness of Action (i.e. Thinking about Activities) • Rate, Timing and Concentration • Speed • Number of activities • Action Crisis (i.e., Inaction Time)	Characteristics of Start-Ups	Start-Up Activities
	• Environmental Uncertainty • Competition Intensity • Market Dynamism • Socially Supportive Environment • Performance-based Culture • Norms & Stereotypes	Mail Questionnaire Start-Up Revenue and Competition Start-Up Revenue and Competition — — Respondent Occupation; Start-Up Team	— Market and Competition Market and Competition Community Resources Community Resources Owner Demographic; Respondents' Information; Master NAICS Industry Codes Type and Location of Business —
	• Location (home-based vs. away-based) • Urban Environments	Legal Form of Start-Up United States Demographics	
<i>Context-focused Industry and market characteristics Socio-cultural context</i>			
<i>Spatial environment</i>			

Table A2. Summary of PSED-based Studies.

Author, Year	Theme		Theory	Dataset		Research design			Main findings
	individual	process		PSD I	PSD II	Both	Other	cross variance	
Adachi and Hisada (2017)	*		Gender theory		*			*	Employment status variables have more significant effects than family-related variables on the gender gap in both entrepreneurship and intrapreneurship.
Alomani et al. (2022)	*	*	Resource-based view (RBV)	*				*	Cognitive traits significantly moderate the impact of human and social capital endowments on NESHIP outcomes.
Brannon et al. (2013)		*	Social identity theory	*				*	Different types of family relationships within entrepreneurial teams have distinct impacts on the likelihood of achieving first sales, with implications for team composition strategies.
Brinckmann and Kim (2015)	*	*	Social cognitive theory		*			*	Entrepreneurial self-efficacy, perseverance, and advanced education boost business planning.
Brush, Edelman, and Manolova (2008)		*	RBV	*				*	Location choices, growth aspirations, and resource endowments significantly influence the probability of achieving first sales in new ventures.
Brush, Manolova, and Edelman (2008)	*	*	Katz and Gartner (1988) framework	*				*	Empirically validates four key properties of emerging startups—intentionality, capitals, boundary, and exchange—finding that slower organizing efforts are more likely to succeed.
Carter et al. (2003)	*		Motivation theory	*				*	NEs and non-entrepreneurs show similar motivations for self-realization, financial success, innovation, and independence. NEs place less importance on roles and recognition, with gender differences indicating males value financial success and innovation more than females.

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset			Research design	Main findings
	individual	process		venture	context	PSED I		
Cassar (2006)	*		*	RBV	*		*	Entrepreneurs with higher household incomes and greater supervisory experience demonstrate higher levels of intended firm size five years post-launch.
Cassar (2007)	*		*	Motivation theory	*		*	Entrepreneurs' initial career motivations and growth preferences relate to their ventures' actual growth outcomes over time.
Cassar (2009)		*	*	Planning literature	*		*	The frequency of financial statement preparation in startup ventures is positively correlated with the use of outside funding, level of competition, and scale of the venture.
Cassar (2010)		*	*	Planning literature	*		*	NEs exhibit substantial overoptimism in their expectations, particularly overestimating both the probability of venture success and future sales and employment figures.
Cassar and Craig (2009)	*			Attribution theory	*		*	Individuals developing their own ventures often exhibit hindsight bias, recalling lower probabilities of success after quitting than initially estimated; this may lead to overestimating future success chances if not adjusted for optimism.
Cassar and Friedman (2009)	*		*	Social cognitive theory	*		*	Higher self-efficacy increases both the likelihood of becoming a NE and the proportion of personal wealth invested in new ventures.
Cassar and Iltner (2009)	*		*			*	*	The intended scale and bank account activity of new startups significantly influence the likelihood of retaining external accountants during the venture creation process.

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset		Research design		Main findings
	individual	process		PSED I	Both	cross	long	
Chen et al. (2018)	*	*	Construal level theory	*			*	Psychological distance shapes entrepreneurs' actions over time through social distance and hypotheticality, affecting the abstractness of their entrepreneurial activities.
Clark et al. (2018)	*		Social cognitive theory, Goal-setting theory		*		*	Social entrepreneurs demonstrate higher levels of entrepreneurial self-efficacy and more ambitious goals compared to commercial entrepreneurs.
Crawford et al. (2015)					*			Key variables in entrepreneurship theories follow highly skewed power law distributions.
Davidsson and Gordon (2012)					*			A method-oriented review of articles utilizing longitudinal panel studies of large, random samples of business start-ups reveals significant methodological challenges, particularly in sample definition, level of analysis, and handling heterogeneity.
Davis and Shaver (2012)	*		Life course theory		*			Young men are particularly likely to express high growth intentions, while mothers express high growth intentions more frequently than other women.
Dimov (2010)	*	*	RBV	*			*	Opportunity confidence enhances venture emergence, with entrepreneurial experience and early planning indirectly influencing this confidence.
Edelman et al. (2010)	*		Expectancy theory	*			*	Investigates how startup motivations and growth intentions differ among minority NEs.
Edelman et al. (2008)		*	RBV	*	*		*	Examines the alignment between entrepreneurship education content and actual practices of NEs.

(Continued)

Table A2. (continued)

Author, Year	Theme			Theory	Dataset			Main findings
	individual	process	venture	context	PSED I	PSED II	Both	Research design
Edelman and Yli-Renko (2010)	*	*	*	*	Discovery and creation views	*	*	Entrepreneurs' opportunity perceptions mediate between objective environmental characteristics and their efforts to start new ventures.
Freeland and Keister (2016)	*	*	*	*	Social dislocation theory	*	*	Examines how racial and ethnic differences influence persistence in NEIal ventures.
Frid, Wyman, and Coffey (2016)	*	*	*	*	Liquidity constraints theory	*	*	Explores how wealth inequality affects entrepreneurial entry and success rates.
Frid, Wyman, Gartner, et al. (2016)	*	*	*	*	Liquidity constraints theory, Pecking order theory	*	*	Low-wealth business founders face significant constraints in acquiring external funding during venture creation
Gartner et al. (2012)	*	*	*	*	Pecking order theory	*	*	Firms with higher projected revenue, legal registration, and incorporation, along with better-educated and higher-net-worth entrepreneurs, are more likely to secure external financing.
Gartner and Liao (2012)	*				Cognition-based theory	*	*	Risk-taking propensity does not significantly influence the likelihood of successfully starting a business
Gartner et al. (2008)	*				Attribution theory, Pecking order theory	*	*	Entrepreneurs often describe their opportunities as dependent on their abilities (internal and stable attributions) and efforts (internal and variable attributions), aligning with the strategic issue literature's view of opportunities
Greene and Hopp (2017)	*	*	*	*	Planning literature	*	*	Formal planning activities enhance the likelihood of achieving venture viability.
Hechavarria et al.		*	*	*	Agency Theory,	*	*	External equity significantly impacts new firm

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset			Research design		Main findings
	individual	process		PSED I	PSED II	Both	cross	variance	
	venture	context						long	
(2016)			Pecking order theory						emergence over time, with founder ownership percentage moderating these benefits
Hechavarria et al. (2012)	*	*	Goal-setting theory, Social cognitive theory	*			*		Entrepreneurial goals and self-efficacy influence startup outcomes.
Honig and Hopp (2019)	*	*	Experiential learning theory		*		*		Different learning styles among entrepreneurs lead to varying trajectories in capital formation and social network involvement during venture creation.
Hopp (2012)	*	*	RBV, Goal-setting theory		*		*		Previous nonprofit experience significantly increases the chances of successfully founding a new venture.
Hopp and Sonderegger (2015)	*	*	Complexity theory, Goal-setting theory, Social cognitive theory		*			*	Examines how prestart-up experience and intentions influence entrepreneurial success.
Hopp and Stephan (2012)	*	*	Institution theory, Goal-setting theory, Social cognitive theory		*			*	Community-level cultural norms impact entrepreneurial self-efficacy and motivation, which in turn influence venture emergence success.
Ivanova and Tornikowski (2022)		*	Action Phases			*	*	*	The extent of action crises experienced by NEs significantly influences their decisions between persistence and termination.
Khan et al. (2014)	*	*	Goal-setting theory, Social cognitive theory		*		*		High perceived competition intensity weakens the negative impact of goal commitment on disengagement, self-efficacy consistently reduces disengagement regardless of competition intensity.
Kim et al. (2006)	*		RBV	*			*		While financial and cultural capital are not

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset			Research design	Main findings
	individual	process		PSED I	PSED II	Both		
		venture	context				cross variance	
							long	
Kim and Longest (2014)	*	*			*		*	essential for entrepreneurial entry, high levels of human capital, particularly advanced education and managerial experience, significantly enhance the likelihood of starting a business. Founders with venture-specific industry experience tend to prefer solo ventures or smaller collaborations, while those with backgrounds in highly interactive occupations are more likely to involve more collaborators in their startup efforts.
Kim et al. (2013)	*	*			*		*	The effectiveness of social support for aspiring business owners depends on the alignment between tasks performed and support providers' roles.
Kim et al. (2015)	*	*			*		*	Leisure-based founders initially progress more slowly but achieve better economic and non-economic outcomes than conventional founders.
Ko et al. (2021)	*	*			*		*	Age and gender diversity negatively impact team productivity, but family relationships positively moderate these effects.
Kotha and George (2012)	*	*			*		*	NEs with industry-specific and startup experience can more effectively allocate ownership and secure resources from their supporters.
Koumbarakis and Volery (2023)	*	*			*		*	This study investigates the use of machine learning techniques to predict outcomes of new venture gestation during the first five years of entrepreneurial activity.
Kreiser et al.	*	*			*		*	An increase in the number of network ties

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset		Research design			Main findings
	individual	process		PSED I	PSED II	Both	Other	cross variance long	
(2013)									
Laffineur et al. (2020)	*		Expectancy theory		*			*	positively affects founding activities, while increased tie strength shows negative associations. Individuals facing arduous working conditions and lacking personal accomplishment in salaried jobs show higher commitment to their new businesses.
Lewis et al. (2024)		*	Entrepreneurial action theory		*		*	*	Categories, pace, and sequence of startup activities significantly influence NEs' likelihood of achieving a startup outcome.
Liao and Gartner (2006)		*	Planning literature	*				*	NEs who complete a business plan are significantly more likely to persist in their startup efforts, with the timing of planning and environmental context further influencing persistence.
Liao and Welsch (2005)	*		RBV	*				*	Examines the social capital differences between NEs and general public, as well as technology and non-technology NEs.
Lichtenstein et al. (2007)		*	Complexity theory	*				*	The rate, timing, and spread of startup activities significantly influence the emergence of new firms.
Linder et al. (2020)	*	*	Subjectivist theory of entrepreneurship		*		*	*	Different combinations of human and social capital enable survival while overreliance on financial capital does not contribute to venture success.
Mai and Zheng (2013)	*		RBV	*				*	Examines how on-the-job embeddedness affects entrepreneurial entry and industry choice.
Manolova et al.	*		Expectancy theory	*				*	Investigates how growth intentions and

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset			Research design	Main findings
	individual	process	context	PSED I	PSED II	Both	Other	
(2012)								
McCann and Vroom (2015)	*	*	*			*	*	expectations differ between male and female NEs. Planning activities during venture creation decrease perceived environmental uncertainty while increasing self-efficacy and performance expectations.
McCann (2017)	*	*		*			*	Previous exposure to entrepreneurship significantly influences NEs' beliefs about venture's future success.
McCann and Folta (2012)	*	*		*			*	Investigates how entry determinants influence expected returns and required thresholds for entrepreneurial entry.
Muñoz-Bullón et al. (2015)		*			*		*	Examines how founding team experience influences new venture creation outcomes.
Newbert (2005)	*	*		*			*	Successful NEs engage in common gestation activities, market dynamism influences the new firm formation process, and learning negatively impacts success in highly dynamic markets.
Newbert (2012)	*	*			*		*	Social entrepreneurs are less likely than commercial entrepreneurs to adopt various best marketing practices.
Newbert and Tornikoski (2012)		*		*			*	Network governance, content, and growth significantly influence organizational emergence, with network structure informing growth needs.
Newbert and Tornikoski (2013)	*	*		*			*	Examines how embedded ties and resource dependence affect resource acquisition costs in emerging organizations.
Newbert et al. (2013)		*		*			*	NEs must develop diverse networks of strong and weak ties to acquire necessary resources.

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset		Research design		Main findings
	individual	process		PSED I	PSED II	Both	Other	
Oe and Mitsuhashi (2013)	*	*	RBV	*	*	*	*	Work experience in the same industry helps startups reach break-even faster, especially when firms commit resources to information distribution.
Parker (2011)	*		RBV, Agency theory	*		*		NEs tend to leverage general human capital and social ties, while intrapreneurs commercialize unique opportunities targeting businesses.
Parker and Belghitar (2006)	*	*	Utilization perspective	*	*	*	*	The value of waiting significantly influences whether NEs start their ventures, remain nascent, or abandon their efforts, based on personal and economic characteristics.
Patel and Fiet (2009)	*	*	Decision-making literature	*		*		Systematic search has a positive relationship with firm founding success, leveraging through adaptive decision-making and social capital.
Petrova (2012)	*		Liquidity constraints theory	*		*		Financial constraints do not influence the decision to pursue part-time versus full-time entrepreneurship.
Renko (2013)	*	*	Prosocial motivation theory	*		*		Prosocial motivation decreases the likelihood of firm emergence within four years, especially when the product offering is new to markets.
Renko et al. (2012)	*	*	Expectancy theory	*		*		Motivation, influenced by various types of valence, instrumentality, and expectancy, is crucial for NEs' progress toward establishing an operating venture.
Renko et al. (2016)	*	*	RBV	*		*		Startup efforts by entrepreneurs with disabilities are less likely to result in viable organizations, indicating particular challenges for this population.
Reynolds (2011)	*		RBV	*		*		There is little correlation between informal support and startup outcomes, with formal

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset			Research design	Main findings
	individual	process		PSED I	PSED II	Both		
		venture	context				long	
Reynolds et al. (2004)	*	*	*	*				support being crucial for continued efforts. Provides a comprehensive analysis of NE demographics and characteristics in the US.
Reynolds (2009)	*				*	*	*	Variations in survey item wording affect estimates of NE prevalence.
Ruef et al. (2004)		*	Group composition theories	*			*	Homophily and network constraints based on strong ties significantly influence the composition of organizational founding teams, while social isolation is more often due to ecological constraints than status-based choices.
Schenkel et al. (2009)	*	*	Social cognitive theory	*			*	A high need for closure (NFC) positively influences NEial activity by providing a cognitive mechanism to handle the ambiguity of opportunity pursuit, regardless of personal demographics or knowledge base.
Schjoedt and Craig (2017)	*		Social cognitive theory		*		*	Develops and validates a measurement scale for entrepreneurial self-efficacy specific to venture creation.
Schjoedt and Shaver (2007)	*		Motivation theory	*			*	Neither push factors from job dissatisfaction nor pull factors from life satisfaction significantly influence entrepreneurial career choices.
Schjoedt and Shaver (2012)	*		Cognition-based theory	*		*	*	Develops and validates a measurement tool for entrepreneurial locus of control.
Semrau and Hopp (2016)	*	*	Access perspective, Utilization perspective		*		*	Human capital and financial social capital positively interact in shaping startup progress, while informational social capital shows negative interaction.
Shaver et al. (2001)	*	*	Attribution theory	*			*	Develops an attribution-based framework for categorizing entrepreneurs' reasons for

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset		Research design		Main findings
	individual	process		PSED I	PSED II	Both	Other	
		venture	context				cross	
							variance	
							long	
Singh and Lucas (2005)	*	*	RBV, Planning literature	*			*	starting businesses. There are significant differences between full-time homemakers and non-homemakers who intend to start businesses.
Smith et al. (2009)	*	*	Opportunity identification literature	*			*	Codified opportunities are typically discovered through systematic search, while tacit opportunities are more often identified through prior experience, highlighting the importance of opportunity characteristics in the entrepreneurial process.
Tietz et al. (2021)	*	*	Expectancy theory		*		*	While both industry and startup experiences raise income expectations, only industry experience also enhances persistence among NEs.
Tornikoski and Newbert (2007)		*	Legitimacy perspective	*			*	Actions taken by nascent organizations may be more important than their characteristics in explaining organizational emergence.
Townsend et al. (2010)	*	*	Social cognitive theory, Hubris theory	*			*	Confidence in entrepreneurial ability is a stronger predictor of venture startup than outcome expectations.
Vilanova and Vitanova (2020)	*	*	Goal-setting theory, Self-regulation theories of motivation	*			*	Both entrepreneurial self-efficacy and low perceived environmental uncertainty positively affect venture emergence through increased effort.
Villani et al. (2018)	*	*	Effectuation and causation		*		*	Identify distinct configurations of antecedent factors that influence the successful launch of ventures by science-based and non-science-based NEs.
Warhuus et al. (2021)	*	*	RBV		*		*	NEs tend to acquire external funding late in the startup process, after taking less resource-

(Continued)

Table A2. (continued)

Author, Year	Theme		Theory	Dataset		Research design		Main findings
	individual	process		PSED I	PSED II	Both	Other	
		venture	context				long	
Xu and Ruef (2004)	*			Decision theory	*		*	demanding actions earlier. Contrary to common assumptions, NEs demonstrate more risk-averse behavior than non-entrepreneurs. Failure to account for left truncation creates bias in research on new venture failure rates.
Yang and Aldrich (2012)				Organization and entrepreneurship theory	*			
Yang and Aldrich (2014)	*	*	*	Expectation states theory	*		*	Gender stereotypes persistently constrain women's access to leadership positions in entrepreneurial teams, particularly in spousal relationships.
Yang and Del Carmen Triana, (2019)		*	*	Role congruity theory	*		*	Female-led businesses are more likely to fail, particularly when their merit-based competence is inferior to cofounders.
Yusuf (2012)	*	*	*	Feasibility analysis-model of organizations as interpretation systems	*		*	Entrepreneurial exits can be categorized into intelligent exits, driven by strategic learning, and reactive exits, resulting from poor planning, with intelligent exits resembling operating businesses more closely than reactive exits.
Zhang et al. (2022)	*	*	*	Gartner et al. (2004) framework	*		*	College education helps in receiving funding while startup experience slightly negatively impacts market definition in manufacturing startups.

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Notes

1. Notably, four reviewed articles have each received over 1,000 citations: Ruef et al. (2003) on homophily and team formation, Carter et al. (2003) on entrepreneurial motivations, Dimov (2010) on opportunity confidence, and Kim et al. (2006) on the primacy of human capital in entry decisions.
2. Mail Questionnaire section in PSED I.
3. Respondents' Characteristics section in PSED II.
4. Mail Questionnaire section in PSED I.
5. Helpers and Assistance section in PSED I.
6. Mail Questionnaire section in PSED I and Status of Business section in PSED II.

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