The Journal of Technology Transfer (2023) 48:1552–1573
https://doi.org/10.1007/s10961-023-10024-y

Unraveling the resource puzzle: exploring entrepreneurial resource management and the quest for new venture success

Amirmahmood Amini Sedeh[1] · **Rosa Caiazza**[2] · **Amir Pezeshkan**[3]

Accepted: 18 July 2023 / Published online: 8 August 2023

Abstract
Existing research highlights resource management as a complicated and multifaceted system comprising interdependent components, rather than a collection of independent factors. Nonetheless, the precise influence of resource management approaches on value generation and overall prosperity in new business endeavors, especially within diverse contextual environments, remains unclear. To address this gap, our study adopts a neo-configurational approach to explore how entrepreneurial resource management components (e.g., structuring, bundling, and leveraging) relate to achieving success in start-ups. We also examine the contextual influence of environmental dynamism and munificence on the effectiveness of these resource management strategies. By analyzing a comprehensive sample of over 500 US-based ventures, we develop a theoretical framework that encompasses four distinct resource management strategies. This framework provides insights into the attainment of success across diverse environments, characterized by varying levels of dynamism and munificence. Our study contributes to extant literature by emphasizing that the achievement of a competitive advantage in entrepreneurial firms is contingent upon the alignment of internal resource management strategies with external factors, specifically dynamism and munificence.

Keywords Configurational theory · Dynamism · Munificence · New venture success · Resource management

JEL Classification L21 · L25 · L26 · M13

✉ Amirmahmood Amini Sedeh
aaminise@stedwards.edu

Rosa Caiazza
rosa.caiazza@uniparthenope.it
https://www.uniparthenope.it/ugov/person/473

Amir Pezeshkan
apezeshkan@ubalt.edu

[1] Department of Management, Bill Munday School of Business, St. Edward's University, Austin, TX 78704, USA

[2] Parthenope University of Naples, Naples, Italy

[3] Department of Management and International Business, Merrick School of Business, University of Baltimore, Baltimore, MD 21201, USA

1 Introduction

Achieving initial success is crucial for new ventures facing the liability of newness and numerous start-up challenges. Considering the significant rates of failure observed in the startup industry (Messersmith et al., 2018), there exist numerous research prospects in this domain. Recognizing that the process of gathering resources to capitalize on opportunities is a vital component of establishing a new venture (Blank, 2021; Clough et al., 2019), our investigation aims to uncover the factors that contribute to the success of new ventures, employing a framework centered around resource management.

Although previous literature acknowledges the significance of different factors in determining the success of new ventures, such as founder human capital, innovative strategy, and networks (Davidsson & Honig, 2003), and recognizes the contextual variability of resource value based on factors like strategy, technological capabilities, and the environment (Nordqvist et al., 2014), several gaps remain. Firstly, these studies often overlook the reciprocal interconnections among different forms of resources, leaving the underlying mechanisms unexplored (Debrulle et al., 2023). Secondly, the relative importance of different resources and the impact of complex gestation activities, diverse strategies employed by entrepreneurs during start-up processes (Gartner & Shaver, 2012), on entrepreneurial outcomes remain uncertain (Arenius et al., 2017). Lastly, the dynamic interplay between internal and contextual factors, determining the required resources for entrepreneurial success and the processes to access them, has not been thoroughly captured (Audretsch et al., 2022). For instance, it is unclear whether resource acquisition strategies effective in resource-rich contexts are applicable in environments lacking critical resources and infrastructure (Khavul & Bruton, 2013).

To address these gaps, scholars have suggested investigating the interdependencies of complex activities using "nontraditional techniques" when studying strategy formation in organizations, including new ventures (Ott & Eisenhardt, 2020). Building on prior research showing the positive impact of alignment between internal and external factors on new firm performance (Edelman et al., 2005), our study adopts a *configurational approach* that focuses on aligning resource management strategies with environmental factors. Internally, our study emphasizes the concept of entrepreneurial resource management (ERM), which involves structuring a resource portfolio, bundling resources to build capabilities, and leveraging those capabilities to create and sustain value for customers and owners (Sirmon et al., 2011). In this context, the technology utilized by ventures, which encompasses the knowledge, skills, and capabilities acquired and applied through ERM, holds a pivotal role in influencing their level of success (Zahra, 1996). Adopting new technologies in new ventures can enhance business processes, automate tasks, and improve overall efficiency. It also provides a competitive advantage, allowing start-ups to differentiate themselves from established competitors by staying technologically ahead (Audretsch et al., 2022). Embracing technology from the early stages increases the likelihood of success. Moreover, new technologies empower ventures to challenge incumbents by fostering innovation and agility, allowing them to adapt their business models to industry shifts. During the growth stage, leveraging emerging technologies like social media, machine learning, and the internet of things helps reach a wider global audience and expand the customer base (Audretsch et al., 2022).

In addition to internal factors, the external environment plays a significant role in shaping the relationship between new ventures' technological choices and their performance (Iansiti, 1995). We consider dynamism, representing the degree, frequency, and

unpredictability of the external environment (Miller, 2003), and munificence, indicating the abundance of critical resources within an industry (Bradley et al., 2011), as external factors influencing the processes of resource search, access, and transfer. Our focus is on new ventures, particularly those in the start-up stage, as they operate in a highly competitive and uncertain environment where resource management and strategic outcomes are crucial (Brinckmann et al., 2019). This allows us to capture the early formation of the resource base and its long-term strategic impact on the firm's evolution.

To validate our configurational framework, we utilize Fuzzy-set Qualitative Comparative Analysis (fsQCA: Ragin, 2008) with a panel of 500 individuals involved in nascent entrepreneurial ventures from the Panel Study of Entrepreneurial Dynamics II (PSED II). By employing fsQCA, we can capture intricate relationships among variables, providing deeper insights into the interdependencies between resource management components and the environment.

Our study contributes to ERM research in several ways. Firstly, we uncover previously unidentified combinations of resource management elements that are present in successful new ventures. This provides a clearer understanding of how entrepreneurs effectively utilize their resources to achieve superior performance, thus shedding light on the previously opaque resource management "black box" (Clough et al., 2019). We identify the necessary and sufficient ERM strategies for establishing a successful venture, highlighting the importance of applying the right configuration, particularly during the start-up process (Gartner & Shaver, 2012). We also emphasize the significance of *fit* with the external environment by exploring the influence of contextual factors such as environmental dynamism and munificence on the relationship between resource management strategies and venture success. In doing so, we address the need to expand the research scope of resource management strategies beyond entrepreneurs' attributes and behaviors (Reypens et al., 2021) and provide valuable insights into the most effective strategies in diverse environments (Khavul & Bruton, 2013). Prior studies have yielded valuable insights into the process of resource management, but they have primarily concentrated on examining its components in isolation within a linear framework (Chirico et al., 2011; Hitt et al., 2001).In contrast, our study takes a novel approach by employing a configurational perspective to examine the interplay of resource management components. This enables us to identify patterns of complementarity and substitution among these components and determine which combinations contribute to start-up success in different environments.

This paper is structured as follows: We review literature on resource management and new venture success, develop a theoretical framework, present our data and analytical technique, share empirical results, and discuss implications for theory and practice.

2 Conceptual framework and hypotheses development

2.1 ERM and new ventures' success

ERM is the process entrepreneurs use to manage and utilize resources for desired outcomes. Resource management strategies in the early stages of venture development are crucial for long-term performance (D'Oria et al., 2021). The ERM framework by Sirmon et al. (2007) consists of three elements:

2.1.1 Resource structuring

To structure the primary resource bundle, entrepreneurs must either *acquire* or *accumulate* resources (i.e., subcomponents[1] of resource structuring). Acquiring means purchasing from markets, while accumulating involves internal development. For example, ventures acquire financial capital and skilled employees, but accumulate proprietary resources internally.

2.1.2 Resource bundling

Basic assets are transformed into unique resources and capabilities that differentiate the venture (Sirmon et al., 2008). This includes stabilizing, enriching, and pioneering resources. Stabilizing improves existing resources, enriching extends capabilities, and pioneering creates new capabilities by integrating external resources.

2.1.3 Resource leveraging

Entrepreneurs apply venture capabilities to serve customers and create wealth. Effective leveraging requires decisions on markets and products/services (Barney & Arikan, 2001). Leveraging strategies, categorized by Sirmon et al. (2007), fall into three groups. Resource advantage strategy leverages capabilities across products, addressing diverse customer needs in the same market. Exploiting market opportunities explores new markets to leverage capabilities, expanding the customer base for increased profit. Entrepreneurial strategy develops new solutions for new markets, utilizing expertise from serving specific customer segments.

2.2 Environmental contingencies

To fully understand entrepreneurial ventures, it is crucial to consider environmental factors (Bowen & De Clercq, 2008). Two important aspects are dynamism and munificence, which greatly influence firm strategy and outcomes (Fainshmidt et al., 2019). Environmental dynamism refers to the degree of unpredictable and rapid changes in a new venture's external environment (Miller, 2003). In dynamic and volatile environments, technological disruptions constantly alter the price-performance frontier (Carayannopoulos, 2009) and accelerate the diffusion of new ideas and technologies (Wu et al., 2021). Major disruptive events, like the introduction of radically new technologies, prompt startups to continually leverage new capabilities and transform existing ones. Capabilities that enhance a new venture's fit vary significantly with market dynamism (Eisenhardt & Martin, 2000). In the realm of ERM, high levels of dynamism shorten product lifecycles, threaten competitive advantage sustainability, and compel new ventures to manage resources differently to adapt to the environment through short-lived competitive advantages (Lichtenstein & Brush, 2001).

[1] As explained, resource management consists of three processes (i.e., structuring, bundling, and leveraging) which we refer to as components of resources management process. Each of these components themselves function in multiple ways. For instance, structuring can be done via acquiring and/or accumulating. We refer to those as subcomponents of resource management.

Environmental munificence refers to the level of resource richness and abundance, which shapes access to opportunities and influences the effectiveness of ERM strategies. Access to resources significantly affects the success of entrepreneurs in exploiting opportunities, achieving growth, and profitability (Gedajlovic et al., 2004). Resource scarcity or availability strongly influences entrepreneurial actions, including resource acquisition, maintenance, and management (Edelman & Yli-Renko, 2010).

Munificence is associated with proactive and innovative strategies (Aragon-Correa & Sharma, 2003) and creates a fertile context for emerging technologies. However, resource constraints in resource-scarce settings can limit the technological development activities of new ventures (Eisenhardt & Schoonhoven, 1990). This is because resource-rich environments provide more certainty in evaluating the performance outcomes of necessary investments for technological advancements. In resource-scarce settings, entrepreneurs may have limited economic incentives to invest in innovative initiatives and strategic renewal activities due to constrained resource availability. On the other hand, munificent settings can be challenging as they require new ventures to handle heavy information processing burdens in discovering and selecting promising resource management approaches.

2.3 A configurational approach to ERM

Configurations are set of independent elements that are meaningful collectively as a system (Miller & Mintzberg, 1983). In this vein, a configurational theory asserts that it is more useful to study organizations as clusters of interconnected attributes, rather than separate and loosely coupled entities (Fiss, 2007). Configurational theory helps identify attribute patterns and their impact on specific outcomes. Attributes can exhibit complementarity or substitutability, and multiple combinations can be equally effective (equifinality). Additionally, given that attributes can form several configurations, it allows to examine whether multiple combinations can be equally effective in producing the outcome (i.e., equifinality).

In the field of ERM, two main approaches have been used to examine the resources-performance link in entrepreneurial settings (Debrulle et al., 2023). The universalistic approach examines individual effects of ERM components through linear theorizing. For example, Carnes and Ireland (2013) propose that family firms' unique resources impact innovation through resource bundling subcomponents. Chirico et al. (2011) explore how leveraging elements combined with generational involvement lead to performance gains. In contrast, a configurational approach allows for exploring ERM configurations associated with start-up success, identifying compensatory components and complementary effectiveness. Additionally, we investigate equifinality, where multiple pathways can lead to the same outcome (Gresov & Drazin, 1997).

Second, research on the interactions between ERM and the external environment primarily focuses on contingent relationships. For instance, Hitt et al., (2016) find that the connection between resource management and innovation depends on the firm's life-cycle stage. Wang and Ang (2004) demonstrate that managerial human capital influences executive actions in response to perceived environmental conditions. Wiklund and Shepherd (2005) highlight the combined effect of financial capital access, environmental dynamism, and entrepreneurial orientation on new venture performance. However, a configurational approach complements contingency research by exploring multivariate interdependencies, going beyond limited interactions emphasized in contingency models. It also emphasizes the fit between organizational resources and environmental conditions. In our study, the concept of strategic fit suggests that ventures with similar resources and environmental

contingencies may produce diverse outcomes due to variations in resource management capabilities, synchronization, and alignment with external conditions (Zahra, 2021).

2.4 Hypothesis development

Environmental dynamism creates ambiguity regarding resource requirements for success. To adapt and remain flexible amidst rapid technological evolution, new ventures must acquire a range of resources to enhance existing capabilities and create new ones in response to external changes (Sirmon et al., 2007). Munificence expedites resource acquisition by providing entrepreneurs with multiple access points to various legitimate groups that can offer social and financial capital (Cowden & Tang, 2017). In dynamic and munificent environments, external resource acquisition proves more suitable compared to internal development (i.e., accumulation), which is often time-consuming and uncertain. That said, successful start-ups are causation-oriented, effect-driven new ventures that establish clear objectives through competitive analyses and market research to develop optimal resource bundles (Chandler et al., 2011).

Dynamic environments are characterized by the rapid evolution of industry recipes, fluctuations in market demand, and unexpected environmental shocks. These disruptions give rise to novel entrepreneurial prospects. However, the absence of dominant technological standards and the inherent uncertainty surrounding these opportunities necessitate constant enrichment for entrepreneurs. This entails the continual redesign, updating, and integration of capabilities, as existing ones risk becoming outdated (Caiazza et al., 2015). Enrichment assumes paramount importance as it involves the deciphering and integration of knowledge related to emerging technologies with internal knowledge, thereby establishing a distinct advantage for start-ups. By adopting enrichment strategies, start-ups gain access to new capabilities preemptively, even before their actual need arises (Girod & Whittington, 2017).

Moreover, as environmental dynamism increases, entrepreneurs are more likely to establish new ventures based on radically innovative technologies, leading to the obsolescence of incumbents' knowledge and technology through resource advantage leveraging (Edelman & Yli-Renko, 2010). Munificent environments create opportunities for a larger number of competitors (Sirmon et al., 2010), resulting in swift diffusion of gains from new technologies to rivals. The abundance of resources in such environments facilitates imitation, ultimately diminishing the advantages obtained by the original technology developers. Consequently, sustaining a firm's competitive advantage becomes challenging, as differentiating the venture's capabilities becomes difficult. In such contexts, the rapid and frequent technological changes necessitate prompt and adequate responses from new ventures, as failure to do so can lead to their demise.

A resource advantage leveraging strategy empowers start-ups to effectively respond to changes in a turbulent environment by leveraging technological intelligence, advanced technology, and application competence to identify opportunities ahead of rivals (Lichtenthaler, 2004). Additionally, for sustained success, new ventures must engage in technology transfer both internally and externally (Teece, 2007). In munificent environments, achieving parity with competitors is easier than building a superior advantage (Barney, 1991). By identifying and exploiting opportunities not only in adjacent markets but also in more distant ones, new ventures can operate and pursue diverse opportunities without triggering aggressive responses from rivals, thereby extending their relative advantage lifespan. In essence, while dynamism compels ventures to explore multiple opportunities for survival,

munificence facilitates such exploration in product/service and market domains. We therefore expect:

H1: *In a dynamic and munificence environment, the configuration of resource acquiring, resource enriching, and entrepreneurial leveraging strategy will be positively associated with achieving success.*

In dynamic and resource-scarce environments, technological disruptions and instability are prevalent. However, factor markets are unlikely to provide new ventures with the necessary resources. Therefore, resource accumulation becomes essential for adapting to environmental changes (Sirmon et al., 2007). Resource accumulation in resource-scarce contexts involves leveraging existing and sometimes undervalued or discarded resources (Kollmann et al., 2022). Successful start-ups adopt an effectuation-oriented approach, employing a means-driven entrepreneurial decision-making logic that emphasizes affordable losses and embracing the unexpected (Sarasvathy, 2001). In such environments, dynamism leads to unpredictable imperfections, while low munificence intensifies resource competition and renders resources difficult to afford and acquire (Bradley et al., 2011). Consequently, effectuation through accumulation suggests that new ventures can achieve success by engaging in experimental and iterative processes rather than extensive planning (An et al., 2020).

Regarding resource bundling in such settings, it is unsurprising that entrepreneurial firms adopting a stabilizing strategy may face threats due to uncertainties in dynamic environments. They may struggle to make necessary adjustments in their capabilities to maintain efficiency and competitiveness. Conversely, the costs and disruptions associated with significant changes resulting from resource pioneering can be challenging to manage and recover from in resource-scarce contexts (Bingham & Eisenhardt, 2008). However, given the dynamism in the environment, new ventures often encounter abundant technological opportunities. Effectively exploiting these opportunities through a combination of resource accumulation and enrichment can help start-ups develop causal ambiguity, reduce the risk of imitation, and establish a superior competitive advantage (Thomke & Kuemmerle, 2002). This resulting inimitability is particularly beneficial as new ventures may need to adopt a low-cost orientation in dynamic and resource-scarce environments, which is susceptible to imitation. Furthermore, recognizing the potential of available resources and combining them in novel and unique ways to create value can enable new ventures to offer new products and services (i.e., resource advantage leveraging strategy) to thrive in dynamic environments, while other resource-intensive leveraging strategies may not be suitable in resource-scarce contexts (Mair & Marti, 2009).Therefore, we hypothesize:

H2: *In a dynamic and resource-scarce environment, the configuration of resource accumulating, resource enriching, and resource advantage leveraging strategy will be positively associated with achieving success.*

In stable and resource-rich environments, new ventures have more flexibility and are not threatened by technological changes (Sirmon et al., 2007). A favorable environment with abundant resources leads to increased competition among providers and lower resource acquisition costs (Desa & Basu, 2013). As a result, new ventures can actively plan to obtain specific resources to serve their customers effectively. However, the slow pace of change in the external environment allows competitors to accumulate their resources internally, which can be more advantageous than acquiring resources from markets (An et al., 2020). Therefore, both structuring strategies can lead to success in stable and resource-rich conditions. Compared to start-ups in dynamic settings,

entrepreneurial firms in stable environments develop an ambidextrous logic that combines causation and effectuation (An et al., 2020). In resource-rich environments abundant with innovative technologies, the ambidextrous approach can be achieved by adopting causation logic in research and development departments, while traditional functional departments follow effectuation logic.

In low-uncertainty environments, where technological shifts are infrequent and predictable, new ventures tend to employ a stabilizing bundling process (Bingham & Eisenhardt, 2008). The slower pace of change reduces the requirement for significant technological differentiation, such as unique technologies, resource base changes, or new capabilities. Instead, ventures can make incremental changes to their resources, saving on development costs and generating additional profit.

In resource-rich environments, new ventures can leverage their access to abundant resources and technologies to explore and innovate (George, 2005). They are motivated to invest in promising technologies that competitors may have overlooked due to growing customer demand (Fainshmidt et al., 2019). However, in such forgiving contexts where technological opportunities abound and keeping up with breakthroughs is less critical, competitors who do not utilize resource advantage leveraging can imitate innovative start-ups and enter other markets. These "me too" businesses adopt similar technological approaches to offer comparable products and services in adjacent markets (Debrulle et al., 2023). Given the stable environment, competitors have sufficient time to develop either leveraging approach. Therefore, we argue that in a stable and resource-rich setting, new ventures can achieve success through either a resource advantage or a market exploitation leveraging strategy. Thus, we expect that:

H3: *In a stable and munificent environment, resource stabilizing will be positively associated with achieving success regardless of new ventures resource structuring and resource leveraging approach.*

Finally, stable settings that lack resources do not need advanced technology. Acquiring unique resources can be costly and may not generate enough value. Instead, successful new ventures are more likely to accumulate available resources internally using effectuation logic to develop their technology portfolio. Moreover, limited resources make it difficult for competitors to access the necessary resources for growth and imitation. Therefore, new ventures that build competencies internally make it significantly challenging for competitors to keep up (Aragon-Correa & Sharma, 2003).

Start-ups do not need to constantly seek out new technologies and expose themselves to external sources in stable, resource-limited environments. This is because the presence of regulations and relatively weak competition leads to more stable capabilities and routines (Reypens et al., 2021). Instead, new ventures can achieve strategic fit by gradually bundling their resources (Sirmon et al., 2011). In such a market, where resources are scarce and consumer demand is limited, investing in a resource advantage strategy may not be economically feasible. Developing technological uniqueness in a stable and resource-limited environment can be expensive and risky, especially when start-ups primarily compete as followers rather than innovators (Davidsson & Gordon, 2012). However, successful start-ups, often referred to as the "modest majority", analyze the external environment carefully to identify new market opportunities. These opportunities are typically found in adjacent markets where entrepreneurs have familiarity, and they can be exploited using the existing skill set and capabilities, considering the high cost of developing new products/services in stable, resource-limited settings. Therefore, we expect the following:

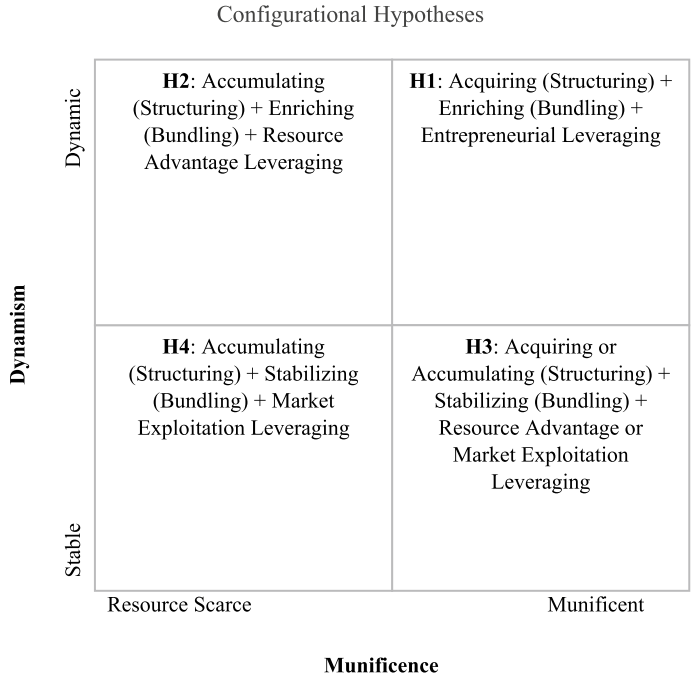

Fig. 1 Configurational hypotheses

H4: *In a stable and resource-scarce environment, the configuration of resource accumulating, resource stabilizing, and market exploitation leveraging strategy will be positively associated with achieving success.*

Figure 1 provides a snapshot of the hypotheses and the level of support they received from our analysis.

3 Methods

3.1 Data

Data for this research is drawn from the PSED II, a publicly available panel study of nascent entrepreneurs in the United States. The data collection started in 2006, contacting a total of 64,622 individuals through random digit dialing. PSED II followed entrepreneurs for five years until 2011, creating a longitudinal panel data source. The dataset includes personal and environmental factors associated with new venture creation (Reynolds, 2000). Out of all the contacted individuals, those who answered "yes" to the question of whether they were alone or with others trying to start a business were designated as "nascent entrepreneurs" for this study.

A total of 1,214 individuals qualified for the subsequent survey rounds. To avoid generalizations, we sampled individuals who met the following criteria: (1) they were in the process of starting a new business alone or with others, (2) they were independent (not part of an organization's effort), (3) they reported positive or negative cash flow (excluding

those without cash flow data), and (4) their first activity to start a new venture began in 2006.[2] Entrepreneurs who did not start a venture were excluded. The sampling methodology, along with the longitudinal nature of PSED II, enables researchers to identify robust metrics representing resource management and success at the initial stage of entrepreneurial venture creation (Clough et al., 2019).

3.2 Measures

3.2.1 Entrepreneurial venture success

Cash flow is widely recognized as a reliable indicator of success in previous studies due to its resistance to accounting manipulations (Vorhies et al., 2009). Therefore, in this study, we define the first instance of positive cash flow as the outcome condition (independent variable) (Chandler et al., 2005; Kariv & Coleman, 2015). To capture this, PSED II asks respondents the question: "Has monthly revenue exceeded monthly expenses for more than six of the past twelve months? (1 = yes; 0 = No)". Out of the 578 ventures studied over the first 5 years, 288 reported positive cash flow and 290 reported negative cash flow. To ensure consistency between our causal conditions and the definition of the outcome condition, we monitor resource structuring, resource bundling, and resource leveraging until ventures report the first occurrence of positive cash flow.

3.2.2 Resource structuring

Based on Newbert (2005) approach, we examine how entrepreneurs form their resource portfolio through gestation activities. These activities refer to preorganization events aimed at acquiring or reconfiguring valuable, rare, inimitable, and nonsubstitutable physical, human, or organizational resources (Barney, 1991). The completion rate of gestation activities is linked to an increased likelihood of new venture success (Reynolds & Miller, 1992). All gestation activities included in the analysis are represented as dummy variables, taking a value of 1 if the entrepreneur completed the activity and 0 otherwise. Table 1 provides an overview of these activities and their associated resource types (column 2; Newbert, 2005). These resources can be either accumulated (developed internally, e.g., patents) or acquired (purchased from factor markets, e.g., machinery) (Table 1, column 3; Newbert, 2005). For instance, entrepreneurs who apply for a license or patent during the gestation period accumulate protected technology as an organizational resource (Carter et al., 1996). To measure the number of gestation activities completed by entrepreneurs in each venture, we sum the activities involving resource acquisition and internal accumulation.

[2] Based on PSED II data, founders initiate various activities when starting their ventures. To determine the venture start date, we examined the month and year when these activities were initiated, specifically ensuring that it was in 2006. Additionally, following Delmar and Shane (2004), we assessed respondents' differentiation between working on the venture and thinking about it by considering their response to the question, "Which came first for you, the business idea or your decision to start a business, or did they occur together?".

Table 1 Gestation activities included in resource structuring and resource bundling

Gestation activity	Type of resource	Acquired or accumulated
Prepared Business Plan	Established formal planning	Accumulated
Developed a model/ prototype	Formalized technology	Accumulated
Applied for patent/license, developed a technology	Protected technology	Accumulated
Purchased material	Accessed raw material	Acquired
Bough/ rented equipment	Procured plant and equipment	Acquired
Financial resources	Invested saving money, own money/ or others money	Acquired/accumulated
Entrepreneur experience	Developed and incorporated individual experience	Accumulated
Hired employees	Added experience and knowledge	Acquired
Promotional efforts	Executed the formal coordination system	Accumulated
Formed legal entity	Signaled legitimacy	Accumulated
Joined a trade union	Created formal networks	Acquired

3.2.3 Resource bundling

In PSED II, resource bundling is addressed by asking nascent entrepreneurs if they have modified their resource bundle. To examine these modifications, we track the entrepreneurs' gestations prior to the first positive cash flow. We assign a value of 1 to any modified or added resources and 0 otherwise to capture changes in the resource base. By summing up the gestations where entrepreneurs maintained unchanged resources and those where changes or modifications occurred, we measure different subcomponents of resource bundling (Carnes & Ireland, 2013). Specifically, we calculate the average value of unchanged resources/capabilities to assess structuring, and the average value of modified resources to assess enriching.

3.2.4 Resource leveraging

Levering is assessed based on the extent to which the nascent entrepreneurs' activities focus on creating new technologies/applying them to develop novel products and services (i.e., resource advantage strategy) and exploring new markets (i.e., exploiting new markets) (Chirico et al., 2011). PSED II surveys respondents on the similarity of their products or technologies to existing ones (1 = many; 2 = few; 3 = none) and the availability of the technology for their product/service one year/five years ago (1 = yes; 0 = no). We calculated the sum of the entrepreneur's responses to these questions. Another set of questions addresses the entrepreneurs' efforts in seeking new potential customers in different markets (percentage of current customers that are local, located between 20 and 100 miles away, located more than 100 miles away but within the U.S., and located outside the U.S.). We summed up the entrepreneur's answers to these questions.

3.2.5 Environmental contingencies

Environmental dynamism was calculated by conducting a regression analysis of time against industry revenue for the five-year period of 2006–2011 (Baron & Tang, 2011). Industry sales data were obtained from the IBISWorld database, using the ventures' North American Industry Classification (NAICS) to obtain industry-specific information. The regression analysis involved using time (2006–2011) as the independent variable and annual sales as the dependent variable for each industry. The standard errors of the regression coefficients were then divided by the mean sales values of the five years to serve as a proxy for industry dynamism. Industry growth rate, a crucial indicator of munificence as it reflects output growth (Chen et al., 2017), was measured using the five-year (2006–2011) average growth of sales in the industry (Palmer & Wiseman, 1999). To determine this, we regressed the natural logarithm of total industry sales with time as the independent variable.

3.3 Analytical approach

We employ fuzzy set QCA (fsQCA) as our specific set-theoretic tool (Fiss, 2011). Unlike linear modeling, which attributes outcomes to the sum of individual predictors' effects, fsQCA enables the simultaneous consideration of multiple interdependent factors. It also accommodates equifinality, where different causal conditions can lead to the same outcome (Schneider & Wagemann, 2013), making it suitable for our configurational framework.

Before conducting fsQCA, variables need calibration by assigning membership scores between 0 and 1 to each case. A score of 0 represents full exclusion or non-membership, while 1.0 signifies full inclusion or membership. A score of 0.5 indicates a crossover point, where it is uncertain if a condition is present or absent (Ragin, 2008). In our dataset, entrepreneurial ventures with a positive cash flow were assigned 1.0, while those without received 0.0. All other variables in our analysis are "fuzzy" and require calibration. Following Fiss (2007, 2011), we employed three anchors to structure fuzzy sets: the thresholds for full membership and full non-membership, and the crossover point. For calibration, we utilized the standardized adjusted average as the baseline for these fuzzy variables. To differentiate new ventures into high- and low-tech industries (Ballou et al., 2007), we utilized SIC codes. We calculated standardized hi-tech adjusted averages as crossover points for new ventures in hi-tech industries, and standardized low-tech adjusted averages for the remaining ventures. Standardizing across both industries allowed for comparable z-scores for each variable. Based on these z-scores, we set the 25th percentile, median, and 75th percentile for each condition as thresholds for full non-membership (out), crossover, and full membership (in) (Ho et al., 2016). Descriptive statistics and the values used as anchors for the calibration procedure are presented in Table 2.

In the subsequent phase of fsQCA analysis, two criteria need to be determined: the frequency cut-off (minimum number of cases required for a configuration to be included in the analysis) and the consistency threshold (level of consistency between a configuration and the outcome deemed sufficient to establish a systematic pattern) (Fainshmidt et al., 2019). We established the minimum acceptable solution frequency as 2 and set the frequency thresholds to retain 80% of the cases, following Fiss (2011).

Table 2 Descriptive Statistics and Correlations

Variable	Mean	SD	Out, crossover, and in anchors for calibration	1	2	3	4	5	6	7	8
1.Profitability	0.47	.50	0, .5, 1								
2.Acquring	1.92	1.20	High-tech: − .88, .22, .92 Low-tech: − .92, .08, 1.08	.28**							
3.Accumulating	3.01	1.19	High-tech: − .71, .06, .84 Low-tech: − .84, .0, .74	.26**	.24**						
4.Stabilization	3.69	1.71	High-tech: − .80, − .39, 1.01 Low-tech: − .99, .18, 1.77	.16**	.28**	.21**					
5.Enriching	1.29	1.48	High-tech: − .88, − .17, .53 Low-tech: − .87, − .19, .48	.30**	.27**	.33**	− .02**				
6.Resource Advantage	3.85	1.78	High-tech: − .68, .06, 1.31 Low-tech: − 1.04, .08, .65	.22*	.16**	.05**	.06**	.22**			
7.Market Exploitation	.55	.50	High-tech: − .24, .12, 1.08 Low-tech: − .094, .09, .73	.04**	.13**	.07**	.03**	.10**	.10**		
8.Dynamism	1.03	.10	High-tech: − 5, 7, 25 Low-tech: − 18, − 3, 9	.15**	.08**	.16**	.04**	.05**	.06**	.20**	
9.Munificence	1.20	.12	High-tech: − 2.3, 6.9, 14.2 Low-tech: − 8.2, − 1.5, 6.5	.13**	.10**	.08**	.06**	.10**	.07**	.11**	.18**

Table 3 Fuzzy set analysis of new ventures profitability

Causal condition		A	B	C	D
Structuring subcomponents					
Acquiring		●	●	●	Ø
Accumulating		Ø			●
Bundling subcomponents					
Stabilizing		Ø		●	●
Enriching		●	●	●	
Leveraging subcomponents					
Resource advantage		●			
Market exploitation		●	●	●	●
Environment					
Dynamism	●			Ø	Ø
Munificence	●		●	●	Ø
Unique Coverage	.11		.05	.09	.09
Unique Consistency	.88		.82	.81	.82
Solution Coverage			.45		
Solution Consistency			.84		

Solid black circles (●) represent the presence of a condition. Open circles (Ø) indicate the absence of a condition. Large circles indicate central/core conditions; small circles indicate contributing/peripheral conditions. Frequency threshold imposed: 2 cases per configuration representing 87% of the sample

0.80 consistency threshold corresponds to a minimum proportional reduction in uncertainty (PRI) consistency value of 0.59

3.4 Results

We initially conducted a necessity test to assess the independent necessity of each causal condition for the outcome condition. However, none of the causal conditions met the consistency threshold of 0.9, which prior studies recommend as "almost always necessary" for the occurrence of the outcome condition (Fiss, 2007). Consequently, we retained all conditions for subsequent sufficiency analysis. In Table 3, we present a summary of the sufficiency analysis results, revealing four configurations of venture success that account for 84% of profitability instances (solution consistency). Furthermore, the combined four configurations explain 45% of the variance in profitability (solution coverage).

Regarding the specific hypotheses, Configuration A suggests that combining resource acquisition, resource bundling through enrichment, and leveraging resources using an entrepreneurial strategy leads to start-up success for new ventures operating in munificent environments with high dynamism. Notably, this solution also indicates the absence of accumulating and stabilizing as peripheral factors. Therefore, Hypothesis 1 is supported. Additionally, Configuration B involves acquiring, enriching, bundling, and exploiting opportunities in new markets within munificent environments. This configuration proves effective in both stable and dynamic settings, providing further support for Hypothesis 1. Configuration D fully supports Hypothesis 4, as it demonstrates that the configuration of accumulating, stabilizing, and exploiting new markets is positively associated with venture success in stable-resource scarce settings.

Hypothesis 3 receives partial support from Configurations C and B. Configuration C demonstrates the effective utilization of both bundling subcomponents, contrary to our initial hypothesis of only stabilizing. Additionally, Configuration B partially supports Hypothesis 3 by showcasing the success of new ventures that employ resource acquisition, enrichment bundling, and market exploitation leveraging in munificent and static settings. It should be noted that the statuses of accumulation, stabilizing, and resource advantage subcomponents are marked as "do not care", indicating their presence or absence can vary. Furthermore, it is important to highlight that this configuration exhibits the lowest coverage and one of the lowest consistencies in achieving success among start-ups, suggesting it is not among the most common configurations observed in successful new ventures.

Hypothesis 2 did not receive support, as the sufficiency analysis failed to identify any configurations suggesting successful outcomes in dynamic, resource-scarce settings that met the minimum consistency threshold of 80%. In essence, the new ventures in our sample did not exhibit a systematic ability to adapt to such environments.

4 Discussion

4.1 Theoretical implications

Previous universalistic studies on resource management have either disregarded the distinct conditions that new ventures encounter compared to established firms (Zahra, 2021), or focused excessively on the significant influence of specific resources, such as financial capital or human capital, on the performance of new ventures (Newbert, 2005). Additionally, although some prior studies have examined the moderating factors in the relationship between resources and new venture performance from a contingency perspective, the components of effective ERM and environmental conditions have not been previously analyzed together in a comprehensive model of new venture performance. Consequently, our understanding of the intricate mechanisms that contribute to the success of nascent entrepreneurial ventures remains limited (Hedström & Ylikoski, 2010: p.50).

Drawing upon the underlying premise that the relationship between ERM and the attainment of success is intricately influenced by the dynamic interplay of internal and external factors, the principal objective of this study is to elucidate the significance of strategic alignment between resource management components of new ventures and external factors in achieving success. In essence, this research expands our understanding of how the complex interactions between resource structuring, bundling, leveraging, and the environment impact the success of new ventures. Notably, it is imperative to underscore that the isolated presence of ERM components does not independently engender success. Thus, we posit that the mere possession of resources, irrespective of their inherent value, does not automatically translate into value creation. Rather, the value proposition of a new venture's resource portfolio is derived when entrepreneurs adeptly structure their resource foundation, combine them into synergistic capabilities, and skillfully leverage these capabilities collectively with the external environment to yield the desired outcomes.

This encompasses technologies and their associated technological capabilities as well. Although the development of new technologies has the potential to nurture the growth of a firm, the value they contribute to the success of the venture can be limited if not pursued within an appropriate and comprehensive resource management strategy. Effective ERM ensures the optimal allocation of limited startup resources to support

the development and implementation of new technologies. By judiciously allocating resources, startups can maximize their potential for value creation. Notably, under certain conditions, resource management subcomponents can exhibit complementary interactions rather than acting as mere substitutes (e.g., in Configuration B and C). This finding complements existing literature, which has predominantly focused on studying individual components in isolation (Baker & Nelson, 2005; Desa & Basu, 2013). Our findings underscore the potential for misleading conclusions when resource management components are considered independently. For instance, the mere acquisition of requisite technologies to drive innovation does not guarantee value creation across all contextual settings. Instead, entrepreneurs must evaluate the fit between their resource management strategy and the external context before making decisions regarding technology acquisition or integration into existing systems and processes. Therefore, we consider this study as an initial step towards unraveling the intricate interdependencies among resources, as resource management subcomponents often entail contrasting processes, such as acquisition and accumulation.

Additionally, our study reveals new evidence to support the notion that the success of start-ups is an equifinal process that varies depending on the characteristics of the environment in which they operate. These characteristics include stability, dynamism, resource abundance, and resource scarcity. In the case of start-ups operating in dynamic and resource-rich environments, our research suggests that these ventures need to possess knowledge about emerging technologies to acquire them. Furthermore, they must have the capability to effectively integrate these new technologies with their existing resource base, as well as the capacity to leverage these technologies to develop innovative products, services, or forge strategic partnerships to exploit opportunities in other markets. Conversely, for ventures operating in munificent and static settings, our findings indicate that the continuous monitoring of technological advancements and their acquisition may be less critical. Start-ups in such environments have more flexibility to pursue success by focusing on upgrading and extending their existing product offerings. Lastly, entrepreneurs in start-ups operating in static and resource-scarce settings may not necessarily need to adopt cutting-edge technologies to launch groundbreaking products and achieve success. Instead, what becomes crucial in such settings is their ability to effectively position their products and services in other markets, considering the limited availability of resources. This contribution holds significant importance for entrepreneurial ventures that often focus on pursuing technological opportunities while neglecting the interconnectedness of their resource management strategies with the external environment.

Moreover, this study contributes to the existing body of knowledge on resource management by advancing our understanding of the implications of heterogeneity in ERM for firm-level outcomes, including achieving success. In response to the scholarly call for contextualizing ERM processes (Zahra, 2021), our research takes a step forward by shedding light on the need to explore the consequences of such heterogeneity. Specifically, our empirical findings underscore the significant impact of resource munificence on the formulation of strategic approaches by nascent ventures. In munificent environments, these ventures strategically choose to acquire resources from external markets rather than engaging in protracted internal development processes. This strategic choice enables them to navigate potential disadvantages, particularly within dynamic settings characterized by rapid technological advancements. Operating primarily under a causation-oriented approach, start-ups in such resource-abundant contexts are compelled to diligently keep pace with the swift evolution of technology. By proactively acquiring new technological competencies from external markets, they effectively position themselves to develop and introduce

groundbreaking products. Furthermore, they continuously offer frequent product upgrades and extensions to sustain their competitive edge in the dynamic landscape.

However, within stable environments characterized by a low growth rate, entrepreneurial endeavors predominantly rely on internal resource development to effectively manage operational costs. In such settings, technological standards are relatively well-established and securely entrenched. Even if the possibility of acquiring a radically new technology were to emerge, the substantial expenses associated with achieving product differentiation through technological competencies would considerably jeopardize the prospects of success for nascent ventures. This finding aligns with previous scholarly investigations, which highlight the important role of internal operations and heightened efficiency as key drivers of competition in stable and resource-scarce environments (Barth, 2003). Particularly for start-ups struggling with the burdensome liabilities of newness and smallness, the exorbitant costs associated with resource acquisition serve as formidable barriers. Consequently, adopting a stabilizing approach emerges as the prevailing strategy for resource bundling, as the inherent characteristics of a stable environment magnify the costs of experimentation and innovation while simultaneously diminishing their potential returns (Vergne & Depeyre, 2016).

Nevertheless, in munificent and stable environments, entrepreneurs can combine the strategies of stabilizing and enriching due to the conducive market conditions that allow for experimentation and cost recovery. Despite our initial prediction favoring stabilizing as the dominant strategy in such contexts, our findings indicate that entrepreneurs may leverage the forgiving nature of munificent and stable environments to engage in varying degrees of experimentation. Enrichment strategies encompass a range of activities, including minor alterations through the addition of complementary resources or capabilities to the existing portfolio (referred to as "grafting" in Puranam et al., 2003), as well as the formation of alliances to gain quick access to multiple technologies. In these settings, entrepreneurial firms may opt for lower-level enrichment approaches, such as technology licensing, to reduce uncertainties associated with new technology development. Consequently, entrepreneurs in our sample operating within munificent and stable environments (Configuration A) focused on enriching their acquired resources to target new customers with innovative products and expand into new markets.

4.2 Practical implications

Entrepreneurs can utilize our findings as a guideline for effectively managing resources and leveraging their technological capabilities, which are crucial for achieving success in diverse environmental conditions. It is important for them to recognize that a pivotal aspect of positioning their start-up for success lies in the interaction between ERM and the external environment of the new venture. Consequently, entrepreneurs must actively engage in scanning and interpreting environmental forces, as well as forecasting their impact on the technological choices of their ventures. Only through such a comprehensive analysis can entrepreneurs determine the appropriate level of technological differentiation that enhances the performance of their new ventures. Conversely, the failure to implement such an effective environmental analysis can lead to a misalignment between market needs and the internal resources of the new venture. Therefore, entrepreneurs must consider both the internal development and external acquisition of resources when addressing environmental challenges.

For instance, our results indicate that a successful approach in dynamic, munificent environments is the combination of acquiring resources, extending current capabilities through enrichment, and employing entrepreneurial leveraging strategies. This suggests that while there are advantages to developing resources internally, it is unrealistic to expect start-ups to possess all the technological resources required to compete in highly dynamic and competitive industries. Additionally, being a technological follower in such settings makes it challenging to sustain a high level of performance over time. This is because by the time replicators achieve technological differentiation, the rapid pace of technological advancements will have pushed the price-performance frontier further ahead. Therefore, new ventures should enhance their capabilities by tapping into external sources of technology through active acquisition or partnerships. Embracing technologies that facilitate rapid prototyping, iterative development, and quick deployment can provide businesses with a competitive advantage and enable value creation. Furthermore, start-ups must consider the compatibility and interoperability of their selected technologies within the broader ecosystem. It is important to evaluate integration with third-party platforms and emerging standards to ensure seamless connectivity and future adaptability.

It is important to note that while munificence may make resource acquisition the primary structuring strategy (Baker & Nelson, 2005), entrepreneurs in certain contexts should carefully consider cost–benefit analysis. In stable munificent environments, for instance, start-ups can achieve fit with the external environment by internally developing ordinary resources and making incremental improvements to them. New venture technologies do not necessarily have to represent a significant departure from existing ones to be successful. In such a market, frequent product upgrades that align closely with customer expectations can contribute to the success of start-ups. Therefore, prioritizing the identification of a strong product-market fit by focusing on understanding customer needs and aligning technological choices accordingly is a prudent approach. To achieve this, new ventures can test and iterate new technological solutions based on customer feedback and market insights, enabling quick adaptation to environmental changes. Interestingly, the "do not care" condition of resource accumulation in Configuration C partially supports this argument. Additionally, in such settings, emergent problem solving (Mintzberg & Waters, 1985) may be sufficient. In stable, resource-scarce environments, entrepreneurs are advised to concentrate on efficiency-oriented activities, as competitors may not commit to significantly enriching their existing resource portfolio.

4.3 Limitations and future research

Our study, despite its contributions, acknowledges certain limitations. It is imperative to further investigate the impact of additional contextual factors, such as market conditions, regulatory environments, and cultural influences, on ERM, technological adoption, and value creation (Mosey et al., 2017). Due to the inherent tradeoff between including more variables and maintaining parsimony in fsQCA, we were unable to incorporate these factors in our analysis. Therefore, future research should aim to complement our findings by examining these nuanced relationships. Furthermore, it would be insightful to explore the influence of entrepreneurial characteristics, including motivation, risk propensity, innovativeness, and prior experience, on ERM and technological adoption decisions (Amini Sedeh et al., 2021). Understanding the role of these individual traits can provide valuable insights into the decision-making processes of entrepreneurs in managing resources and adopting technologies.

Furthermore, future research should explore the effective configurations of internal and external factors specifically in dynamic, resource-scarce environments, which our analysis did not identify a systematic pattern for. Merely attributing resource management outcomes in all resource-scarce settings, regardless of dynamism, to bricolage (i.e., making do with available resources; Desa & Basu, 2013) may provide an incomplete understanding. Therefore, it is crucial for future studies to investigate the strategies employed by new ventures in sourcing and acquiring technologies. Analyzing the decision-making processes involved in choosing between in-house development, external partnerships, technology licensing, and open innovation can shed light on their influence on the success and competitiveness of new ventures.

Lastly, it is important to interpret the generalizability of this research cautiously. Our study focused on a specific sample of new ventures within the United States during their initial five-year period. While our data reveals significant variations in resource management strategies and the success of the surveyed ventures, we recognize the potential for future research to extend the timeframe during which entrepreneurial firms implement resource management practices to gain competitive advantage. Moreover, we encourage scholars to explore whether the findings discussed in this study hold true in other settings and across diverse countries.

5 Conclusion

We have developed a theoretical framework that explores four distinct pathways to new venture success, based on an analysis of resource management strategies among over 500 new ventures in the US. Using fuzzy-set analysis, we offer a nuanced perspective on ERM by examining the contextual factors that influence the effectiveness of resource management strategies. The key insight of our study is that there is no singular best strategy for successful ERM. Instead, achieving a competitive advantage in entrepreneurial firms relies on aligning internal resource management strategies with external factors such as dynamism and munificence.

References

Amini Sedeh, A., Pezeshkan, A., & Caiazza, R. (2021). Innovative entrepreneurship in emerging and developing economies: The effects of entrepreneurial competencies and institutional voids. *The Journal of Technology Transfer, 47*, 1198–1223.

An, W., Rüling, C. C., Zheng, X., & Zhang, J. (2020). Configurations of effectuation, causation, and bricolage: Implications for firm growth paths. *Small Business Economics, 54*, 843–864.

Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of Management Review, 28*(1), 71–88.

Arenius, P., Engel, Y., & Klyver, K. (2017). No particular action needed? A necessary condition analysis of gestation activities and firm emergence. *Journal of Business Venturing Insights, 8*, 87–92.

Audretsch, D. B., Belitski, M., Caiazza, R., & Guenther, C. (2022). Technology adoption over the stages of entrepreneurship. *International Journal of Entrepreneurial Venturing, 14*(4/5), 379.

Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly, 50*(3), 329–366.

Ballou, J., Barton, T., DesRoches, D., Potter, F., Zhao, Z., Santos, B. & Sebastian, J., (2007). Kauffman Firm Survey (KFS) baseline methodology report.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120.

Barney, J. B., & Arikan, A. M. (2001). The resource-based view: Origins and implications. In M. A. Hitt, R. E. Freeman, & J. S. Harrison (Eds.), *Handbook of strategic management* (pp. 124–188). Blackwell.
Baron, R. A., & Tang, J. (2011). The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. *Journal of Business Venturing, 26*(1), 49–60.
Barth, H. (2003). Fit among competitive strategy, administrative mechanisms, and performance: A comparative study of small firms in mature and new industries. *Journal of Small Business Management, 41*(2), 133–147.
Brinckmann, J., Villanueva, J., Grichnik, D., & Singh, L. (2019a). Sources of strategic flexibility in new ventures: An analysis of the role of resource leveraging practices. *Strategic Entrepreneurship Journal, 13*(2), 154–178.
Bingham, C. B., & Eisenhardt, K. M. (2008). Position, leverage and opportunity: A typology of strategic logics linking resources with competitive advantage. *Managerial and Decision Economics, 29*(2–3), 241–256.
Blank, T. H. (2021). When incubator resources are crucial: Survival chances of student startups operating in an academic incubator. *The Journal of Technology Transfer, 46*(6), 1845–1868.
Bowen, H. P., & De Clercq, D. (2008). Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies, 39*(4), 747–767.
Bradley, S. W., Aldrich, H., Shepherd, D. A., & Wiklund, J. (2011). Resources, environmental change, and survival: Asymmetric paths of young independent and subsidiary organizations. *Strategic Management Journal, 32*(5), 486–509.
Caiazza, R., Richardson, A., & Audretsch, D. (2015). Knowledge effects on competitiveness: From firms to regional advantage. *The Journal of Technology Transfer, 40*(6), 899–909.
Carayannopoulos, S. (2009). How technology–based new firms leverage newness and smallness to commercialize disruptive technologies. *Entrepreneurship Theory and Practice, 33*(2), 419–438.
Carnes, C. M., & Ireland, R. D. (2013). Familiness and innovation: Resource bundling as the missing link. *Entrepreneurship Theory and Practice, 37*(6), 1399–1419.
Carter, N. M., Gartner, W. B., & Reynolds, P. D. (1996). Exploring start-up event sequences. *Journal of Business Venturing, 11*(3), 151–166.
Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of Business Venturing, 26*(3), 375–390.
Chandler, G. N., Honig, B., & Wiklund, J. (2005). Antecedents, moderators, and performance consequences of membership change in new venture teams. *Journal of Business Venturing, 20*(5), 705–725.
Chen, H., Zeng, S., Lin, H., & Ma, H. (2017). Munificence, dynamism, and complexity: How industry context drives corporate sustainability. *Business Strategy and the Environment, 26*(2), 125–141.
Chirico, F., Sirmon, D., Sciascia, S., & Mazzola, P. (2011). Resource orchestration in family firms: Investigating how entrepreneurial orientation, generational involvement, and participative strategy affect performance. *Strategic Entrepreneurship Journal, 5*(4), 307–326.
Clough, D. R., Fang, T. P., Vissa, B., & Wu, A. (2019). Turning lead into gold: How do entrepreneurs mobilize resources to exploit opportunities? *Academy of Management Annals, 13*(1), 240–271.
Cowden, B. J., & Tang, J. (2017). Gender differences and entrepreneurial munificence: The pursuit of innovative new ventures. *Journal of Developmental Entrepreneurship, 22*(01), 1750002.
Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301–331.
Davidsson, P., & Gordon, S. R. (2012). Panel studies of new venture creation: A methods-focused review and suggestions for future research. *Small Business Economics, 39*, 853–876.
Debrulle, J., Steffens, P., De Bock, K. W., De Winne, S., & Maes, J. (2023). Configurations of business founder resources, strategy, and environment determining new venture performance. *Journal of Small Business Management, 61*(2), 1023–1061.
Delmar, F., & Shane, S. (2004). Legitimating first: Organizing activities and the survival of new ventures. *Journal of Business Venturing, 19*(3), 385–410.
Desa, G., & Basu, S. (2013). Optimization or bricolage? Overcoming resource constraints in global social entrepreneurship. *Strategic Entrepreneurship Journal, 7*(1), 26–49.
D'Oria, L., Crook, T. R., Ketchen, D. J., Jr., Sirmon, D. G., & Wright, M. (2021). The evolution of resource-based inquiry: A review and meta-analytic integration of the strategic resources–actions–performance pathway. *Journal of Management, 47*(6), 1383–1429.
Edelman, L., & Yli-Renko, H. (2010). The impact of environment and entrepreneurial perceptions on venture-creation efforts: Bridging the discovery and creation views of entrepreneurship. *Entrepreneurship Theory and Practice, 34*(5), 833–856.
Edelman, L. F., Brush, C. G., & Manolova, T. (2005). Co-alignment in the resource–performance relationship: Strategy as mediator. *Journal of Business Venturing, 20*(3), 359–383.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10–11), 1105–1121.

Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978–1988. *Administrative Science Quarterly, 35*, 504–529.

Fainshmidt, S., Wenger, L., Pezeshkan, A., & Mallon, M. R. (2019). When do dynamic capabilities lead to competitive advantage? The importance of strategic fit. *Journal of Management Studies, 56*(4), 758–787.

Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review, 32*(4), 1180–1198.

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54*(2), 393–420.

Gartner, W. B., & Shaver, K. G. (2012). Nascent entrepreneurship panel studies: Progress and challenges. *Small Business Economics, 39*(3), 659–665.

Gedajlovic, E., Lubatkin, M. H., & Schulze, W. S. (2004). Crossing the threshold from founder management to professional management: A governance perspective. *Journal of Management Studies, 41*(5), 899–912.

George, G. (2005). Slack resources and the performance of privately held firms. *Academy of Management Journal, 48*(4), 661–676.

Girod, S. J., & Whittington, R. (2017). Reconfiguration, restructuring and firm performance: Dynamic capabilities and environmental dynamism. *Strategic Management Journal, 38*(5), 1121–1133.

Gresov, C., & Drazin, R. (1997). Equifinality: Functional equivalence in organization design. *Academy of Management Review, 22*(2), 403–428.

Hedström, P., & Ylikoski, P. (2010). Causal mechanisms in the social sciences. *Annual Review of Sociology, 36*, 49–67.

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal, 44*(1), 13–28.

Hitt, M. A., Xu, K., & Carnes, C. M. (2016). Resource based theory in operations management research. *Journal of Operations Management, 41*, 77–94.

Ho, J., Plewa, C., & Lu, V. N. (2016). Examining strategic orientation complementarity using multiple regression analysis and fuzzy set QCA. *Journal of Business Research, 69*(6), 2199–2205.

Iansiti, M. (1995). Technology integration: Managing technological evolution in a complex environment. *Research Policy, 24*(4), 521–542.

Kariv, D., & Coleman, S. (2015). Toward a theory of financial bricolage: The impact of small loans on new businesses. *Journal of Small Business and Enterprise Development, 22*(2), 196–224.

Khavul, S., & Bruton, G. D. (2013). Harnessing innovation for change: Sustainability and poverty in developing countries. *Journal of Management Studies, 50*(2), 285–306.

Kollmann, T., Hensellek, S., Jung, P. B., & de Cruppe, K. (2022). How bricoleurs go international: a European cross-country study considering the moderating role of governmental entrepreneurship support programs. *The Journal of Technology Transfer, 48*, 1126–1159.

Lichtenstein, B. M. B., & Brush, C. G. (2001). How do "resource bundles" develop and change in new ventures? A dynamic model and longitudinal exploration. *Entrepreneurship Theory and Practice, 25*(3), 37–58.

Lichtenthaler, E. (2004). Technological change and the technology intelligence process: A case study. *Journal of Engineering and Technology Management, 21*(4), 331–348.

Mair, J., & Marti, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of Business Venturing, 24*(5), 419–435.

Messersmith, J. G., Patel, P. C., & Crawford, C. (2018). Bang for the buck: Understanding employee benefit allocations and new venture survival. *International Small Business Journal, 36*(1), 104–125.

Miller, D. (2003). An asymmetry-based view of advantage: Towards an attainable sustainability. *Strategic Management Journal, 24*(10), 961–976.

Miller, D., & Mintzberg, H. (1983). The case for configuration. In G. Morgan (Ed.), *Beyond method* (pp. 57–73). Sage.

Mintzberg, H., & Waters, J. A. (1985). Of strategies, deliberate and emergent. *Strategic Management Journal, 6*(3), 257–272.

Mosey, S., Guerrero, M., & Greenman, A. (2017). Technology entrepreneurship research opportunities: Insights from across Europe. *The Journal of Technology Transfer, 42*, 1–9.

Newbert, S. L. (2005). New firm formation: A dynamic capability perspective. *Journal of Small Business Management, 43*(1), 55–77.

Nordqvist, M., Sharma, P., & Chirico, F. (2014). Family firm heterogeneity and governance: A configuration approach. *Journal of Small Business Management, 52*(2), 192–209.
Ott, T. E., & Eisenhardt, K. M. (2020). Decision weaving: Forming novel, complex strategy in entrepreneurial settings. *Strategic Management Journal, 41*(12), 2275–2314.
Palmer, T. B., & Wiseman, R. M. (1999). Decoupling risk taking from income stream uncertainty: A holistic model of risk. *Strategic Management Journal, 20*(11), 1037–1062.
Puranam, P., Singh, H., & Zollo, M. (2003). A bird in the hand or two in the bush?: Integration trade-offs in technology-grafting acquisitions. *European Management Journal, 21*(2), 179–184.
Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.
Reynolds, P., & Miller, B. (1992). New firm gestation: Conception, birth, and implications for research. *Journal of Business Venturing, 7*(5), 405–417.
Reynolds, P. D. (2000). National panel study of US business startups: Background and methodology. *Databases for the Study of Entrepreneurship, 4*(1), 153–227.
Reypens, L., Bacq, S., & Milanov, H. (2021). Beyond bricolage: Early-stage technology venture resource mobilization in resource-scarce contexts. *Journal of Business Venturing, 36*(4), 106110.
Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*(2), 243–263.
Schneider, C. Q., & Wagemann, C. (2013). Doing justice to logical remainders in QCA: Moving beyond the standard analysis. *Political Research Quarterly, 66*(1), 211–220.
Sirmon, D. G., Arregle, J.-L., Hitt, M. A., & Webb, J. W. (2008). The role of family influence in firms' strategic responses to threat of imitation. *Entrepreneurship Theory and Practice, 32*(6), 979–998.
Sirmon, D. G., Hitt, M. A., & Ireland, R. D. (2007). Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review, 32*(1), 273–292.
Sirmon, D. G., Hitt, M. A., Arregle, J. L., & Campbell, J. T. (2010). The dynamic interplay of capability strengths and weaknesses: Investigating the bases of temporary competitive advantage. *Strategic Management Journal, 31*(13), 1386–1409.
Sirmon, D. G., Hitt, M. A., Ireland, R. D., & Gilbert, B. A. (2011). Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects. *Journal of Management, 37*(5), 1390–1412.
Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350.
Thomke, S., & Kuemmerle, W. (2002). Asset accumulation, interdependence and technological change: Evidence from pharmaceutical drug discovery. *Strategic Management Journal, 23*(7), 619–635.
Vergne, J. P., & Depeyre, C. (2016). How do firms adapt? A fuzzy-set analysis of the role of cognition and capabilities in US defense firms' responses to 9/11. *Academy of Management Journal, 59*(5), 1653–1680.
Vorhies, D. W., Morgan, R. E., & Autry, C. W. (2009). Product-market strategy and the marketing capabilities of the firm: Impact on market effectiveness and cash flow performance. *Strategic Management Journal, 30*(12), 1310–1334.
Wang, C. K., & Ang, B. L. (2004). Determinants of venture performance in Singapore. *Journal of Small Business Management, 42*(4), 347–363.
Wiklund, J., & Shepherd, D. A. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing, 20*(1), 71–91.
Wu, W., Wang, H., & Wu, Y. J. (2021). Internal and external networks, and incubatees' performance in dynamic environments: Entrepreneurial learning's mediating effect. *The Journal of Technology Transfer, 46*, 1707–1733.
Zahra, S. A. (1996). Goverance, ownership, and corporate entrepreneurship: The moderating impact of industry technological opportunities. *Academy of Management Journal, 39*(6), 1713–1735.
Zahra, S. A. (2021). The Resource-Based View, Resourcefulness, and Resource Management in Startup Firms: A Proposed Research Agenda. *Journal of Management, 47*(7), 1841–1860.