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Dissertation

Entrepreneurial Management – Essays on (corporate) venture creation and business model innovation

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This publication-based dissertation examines (corporate) venturing and business model innovation intending to derive implications for entrepreneurial management in firms. To achieve this, four self-contained research papers have been developed which are the core of this dissertation. The first section serves as a general introduction, outlines the motivation for each of the research topics, and presents a summary of the research papers and their publication status. The first research paper (Section 2) is a systematic literature review that summarizes and structures three decades of research on the field of success measurement of corporate venturing activities. It identifies three structural dimensions which allow the creation of nine meaning clusters by which the existing measurement approaches can be grouped and compared. Additionally, the review reveals the heterogeneity of these approaches and the unique measurement items which they include. The third section is an empirical study on new venture creation activities in the early stage, based on 112 interviews with novice and experienced entrepreneurs. It defines three dimensions of entrepreneurial activity, namely, Entrepreneurial Alignment, Resource Enhancement, and Value Generation, and finds 67 actions, which differ across these groups in type and sequence. Section four is a single case study in business model innovation that investigates the recent rebranding of “Facebook” to “Meta”. It finds that, despite the strong communication efforts and the resulting internal and external signaling effects, this change does not correspond to a radical business innovation pattern. The fourth research study (Section 5) is a conceptual study that develops an integrated framework for business model innovation in service industries, based on research on the tourism industry. It highlights the limitations of siloed approaches under the influence of internal and external challenges such as industry dynamics and resource constraints. Section six summarizes the dissertation, highlighting the overall contributions for research and practice, and discusses the limitations and directions for future research.



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List of abbreviations

BM	Business Model
BMI	Business Model Innovation
CEO	Chief executive officer
CE	Corporate Entrepreneurship
CV	Corporate Venturing
CVC	Corporate Venture Capital
cf.	confer (compare)
Covid-19	Coronavirus disease 2019
DOI	Digital object identifier
EBITDA	Earnings before interest, taxes, depreciation, and amortization
e.g.	Exempli gratia (for example)
ESG	Environmental, Social, and Governance
et al.	Et alii
EUR	Euro
HHL	HHL Leipzig Graduate School of Management
Ibid.	Ibidem (in the same place)
i.e.	Id est (that is to say)
IF	Impact Factor
ISSN	International standard serial number
ICT	Information and communication technology
p. / pp.	Page / pages
Q1/Q2	1 st Quartile / 2 nd Quartile
RBV	Resource-based view
RQ	Research question
SME	Small and medium sized enterprises
SJR	SCImago Journal Rank
Vol.	Volume
VHB	Verband der Hochschullehrer der Betriebswirtschaft

1 Introduction

1.1 Motivation and research gap

Among the greatest challenges for companies to thrive, or even to survive, is to cope with change along its different dimensions – as change takes place in the contextual, transactional, and internal environment (Schoemaker et al., 2018). With the increasing ambiguity of drivers of change and their interconnectedness, the resulting speed, amount, and type of change and its effects on the company, change can lead to increased uncertainty among the decision-makers at all levels. This is catalyzed as screening, analyzing, forecasting, evaluating, planning, and executing are limited in their effectiveness over shortening periods – namely *what we see as true today, might be wrong tomorrow*. And with it, the current state of products, services, and operations a company runs, as customers and competitors shift their preferences and activities at an equal pace. Hence, a company's ability to cope with change and to tackle the resulting threats and opportunities appears to become one dominant capability for many organizations in the modern business world.

The motivation of the dissertation is to contribute to a better understanding of the approach in which firms could be managed to cope with change and its resulting threats and opportunities: *entrepreneurial*. This is relevant because a general understanding is that management and entrepreneurship are somehow distinct types of thinking and acting (see Hisrich & Ramadani, 2017, p. 12 for an overview). This is also reflected by fundamental contributions to research, which defined these distinct functions as a) *administrative*, with a focus on e.g. planning tasks, structuring operations, and measuring outcomes and b) *entrepreneurial*, with a focus on e.g. defining strategies, identifying opportunities, and taking risks (Baumol, 1986; Chandler, 1991; Drucker, 1964). However, research has turned its attention towards the question of how established firms (characterized by complexity and size) can engage in entrepreneurial activity (Burgelman, 1983; Kreiser et al., 2021). Ultimately this interest has risen to an extent in which the entrepreneurial activity of established firms has developed into its own field of research, addressing this ambidextrous aspect and nature of management's

responsibility. Here, various strands of literature emerged, and new concepts evolved, forming an area of research, to understand and explain through *what* and *how* firms can carry out their entrepreneurship to drive performance. In Corporate Entrepreneurship (CE) research, contributions to the domain increased steadily (e.g. Ireland et al., 2003; Kuratko, 2007; Kuratko & Morris, 2018; Morris et al., 2011; Zahra, 1991), leading to a plethora of definitions, understandings, and referrals to different terms (Schindehutte et al., 2018). Scholars investigate *what* entrepreneurial activities are (Ireland & Webb, 2007; Ketchen et al., 2007; Mazzei, 2018; Schindehutte et al., 2018), *how* they can be intended and executed (Chesbrough, 2010a; Kraus, Filser, et al., 2020; Leten & Dyck, 2012; Luke et al., 2011; Markides, 2013; Michael et al., 2008), and by *whom* these are managed and realized (e.g. Freiling, 2009; Stevenson & Jarillo, 2007; Teece, 2016).

CE is understood as a way for established companies to simultaneously engage in the development of the current and future business to archive competitive advantages that can be fueled by innovation (Kreiser et al., 2021; Kuratko & Audretsch, 2013; Pirhadi & Feyzbakhsh, 2021a). Overall, CE has become increasingly relevant for firms to develop and fuel current and future competitive advantages, particularly by leveraging the positive effects of innovation (Covin & Miles, 1999; Hitt et al., 2011; Ireland et al., 2006). Moreover, as it is appealing to pursue the above-mentioned objectives, CE has evolved to be a strategy (Kreiser et al., 2021). Its success, however, heavily depends on implementation and execution (Kuratko, Hornsby, et al., 2021; Schindehutte et al., 2018).

Within CE, two domains can be divided a) Corporate Venturing (CV) and b) Strategic Entrepreneurship (SE) (Kuratko & Audretsch, 2013; Morris et al., 2011). While the former focusses on the creation of, addition of, or investment into new businesses (Covin & Miles, 2007; Kuratko et al., 2009; Narayanan et al., 2009; Weiss & K. Kanbach, 2021), the latter comprises entrepreneurial activities which comprise the creation of new ventures but also include the utilization of (organizational) innovation in the pursuit of competitive advantage (Ireland et al., 2003; Ketchen et al., 2007; Kuratko & Audretsch, 2013; Mazzei, 2018). Within these two domains of existing CE research, however, there are two fields that deserve more attention and that are addressed in this dissertation.

1.1.1 Corporate venturing activities

Scholars and practitioners keep increasing interest in CV (Birkinshaw & Hill, 2005; Gutmann, 2019; Leten & Dyck, 2012) because it can offer established companies ways to benefit from innovation by creating, accelerating, or investing in new ventures (Breuer, 2013; Gutmann, 2019; Kanbach, 2016; Leten & Dyck, 2012; Makarevich, 2017). Within this field many empirical and conceptual publications have arisen in the last decade, covering the antecedents, forms, approaches, and outcomes (Narayanan, Yang, & Zahra, 2009). Generally, different (internal and external) modes of CV have been identified (Gutmann, 2019; Weiss & K. Kanbach, 2021), which usually follow financial (e.g., boost revenues, increase the number of clients), as well as strategic goals (e.g., gain access to new technologies, accelerate innovation) (Brigl et al., 2018). Thus, CV has strengthened its position as a corporate development activity and remains highly relevant (Hill & Birkinshaw, 2014; Pirhadi & Feyzbakhsh, 2021a).

Despite the great efforts in the scholarly examination of CV, central aspects of CV, however, remain fragmented until today. Two aspects are investigated in this dissertation: a) the measurement of CV outcomes and b) the creation of new ventures.

For the first aspect, much effort has been put into research on the success factors of CV (Dauderstaedt, 2013; Leten & Dyck, 2012). One interesting aspect, however, comprises the measurement of CV outcomes. Here, research to date has no clear focus a large variety of measurement approaches can be found (Bassen et al., 2006; Gompers & Lerner, 1998; A. Miller et al., 1988), however, there is now common understanding of how CV outcomes can be evaluated. This is problematic as CV activities have been identified as suitable, once they are conducted in a strategic manner (Covin & Miles, 2007) and are evaluated against the venturing motives (Kuratko & Audretsch, 2013).

The second aspect of CV, venture creation, has been investigated from various angles and is strongly embedded in the entrepreneurship domain, and many studies take an entrepreneurship perspective to inform CE research about venture creation (e.g. Dushnitsky & Lenox, 2005a; Shook et al., 2003). Interestingly, venture creation has been

investigated either on the individual or the firm level and focusses on later stages of the creation process (Fisher et al., 2021; Korsgaard et al., 2021; Mueller et al., 2012; Wood et al., 2021). However, there is a limited understanding of what concrete actions are necessary to create new ventures and what happens, once individual resources are turned into organizational ones (Fisher et al., 2020; Kuratko, Fisher, et al., 2021; Larsen, 2022).

1.1.2 Business model innovation

The second field that is addressed in this dissertation focusses on the CE initiatives comprising the innovation of a companies' business model. The business model (BM) is a simplified way to describe the unique approach of how a company creates, delivers, and captures value (Casadesus-Masanell & Ricart, 2010; Kraus, Filser, et al., 2020; Schneider, 2019). Besides various contributions to define BMs and their configuration, it's also their innovation which has attracted interest from both, scholars, and practitioners alike. This driven by the motivation to understand BMI as promising way to develop and implement new and unique configurations of a BM to achieve and sustain superior performance (Clauss et al., 2020; Foss & Saebi, 2017).

Alongside this progress, BMI however is still seen as a hard-to-grasp and undefined concept (Filser et al., 2021; Schneider & Spieth, 2013). More specifically, two central aspects of BMI lack a comprehensive understanding. On the one side, this comprises the degree of change made in a BM during BMI activity. This results from recent findings which underline the dependence of BMI success on the way how much in the architecture and configuration of the BM is changed, and which (new) set of activities and relationships are established to serve existing and new customers (Clauss *et al.*, 2020; Foss and Saebi, 2017; Muhic and Bengtsson, 2021).

On the other side, research to date investigated what BMI is and what its effects are (Clauss, 2017). However, the success of BMI activities might be diminished by too siloed and non-holistically approaches (Zott et al., 2011). Despite initial contributions on how BMI can be approached (e.g. Andrianto et al., 2021; Zott et al., 2011), research to

date suffers from a lack of understanding on *what* aspects need to be considered when BMI is conducted.

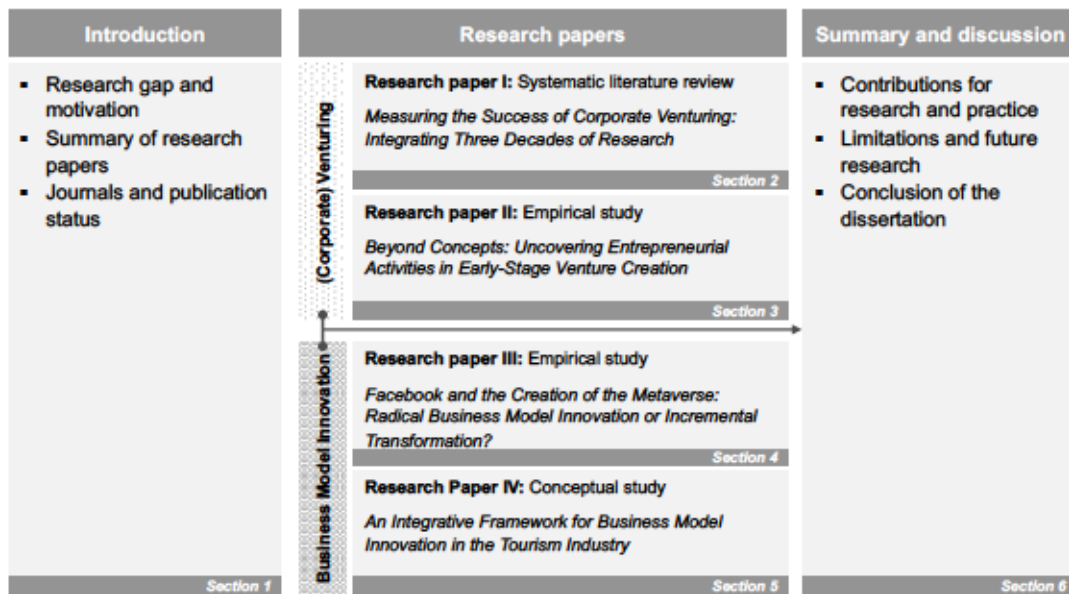
Overall, both areas are relevant to established companies, as they can serve as avenue to future businesses. However, given the organizational setup, its complexity, and its dependencies on the existing business, opportunities are often not pursued as firms lose their *entrepreneurial spirit* (Jarrillo, 1989; Stevenson & Jarrillo-Mossi, 1986)., Venturing and BMI can serve as central activities of CE, to *become* more entrepreneurial (again), which often goes back to the individuals within an organization (Kuratko, Fisher, et al., 2021; Kuratko, Hornsby, et al., 2021; Larsen, 2022). Here the „Corporate Entrepreneur“ (Kuratko et al., 2005; Kuratko & Audretsch, 2013; Teece, 2016), showing entrepreneurial behavior by taking a set of entrepreneurial actions and making judgmental decisions under uncertainty (McMullen & Shepherd, 2006), could be essential. However, the limited understanding within the two areas limits the effectiveness and efficiency of CE initiatives. Therefore, the research gaps presented above will be addressed, seeking to create new insights on how to control and measure these initiatives and on how to create new ventures or build new BMs. These insights aim to provide scholars and managers as entrepreneurs with knowledge for an entrepreneurial management approach, finding the balance between top-level management and first-level execution in an entrepreneurial fashion (Teece, 2016; Urbaniec & Żur, 2021).

1.1.3 Overview of publication-based dissertation

Against this background, the dissertation investigates four relevant topics, to contribute to the still-evolving discussion in this interconnected field of research on CE, shown in figure 1. In the next paragraphs of this section, a summary of the research papers of this dissertation is provided, including the current of publication status and the conferences at which they were presented. The first study (Section 2) is a systematic literature review and structures the last three decades of research on the success measurement of CV. The second study (Section 3) is an empirical research paper that examines entrepreneurial actions of entrepreneurs during early-stage venture creation. The third study (Section 4) investigates a major change in a large corporate firm focused on BMI in form of a case

study. The fourth study (Section 5) is a conceptual study that proposes an integrative framework for BMI in service industries. The dissertation is concluded in the last section, that summarizes the dissertation, outlines its contribution to research and practice, and describes the avenues for further research.

Figure 1 Overview Sections of publication-based dissertation



Source: own illustration

1.2 Summary of research papers

Four research papers build this publication-based dissertation. Thus, each research paper is self-contained, leading to an individual introduction, discussion, and references respectively, as presented in the following four sections of this dissertation.

Regarding the methodology applied in this dissertation, a wide array of research approaches is used. For Research Paper I (Section 2), a systematic literature review, the proceedings proposed by Tranfield et al. (2003) are used. Research paper II (Section 3) follows a case study approach to investigate a relevant phenomenon in depth (Yin, 2011). Research Paper III (Section 4) employs a grounded theory research approach that and builds on a large sample of 112 in-depth interviews and follows the proceedings of Gioia et al. (2012). The following paragraphs summarize each research paper and present the current publication status.

1.2.1 Research Paper I: Systematic literature review (Section 2)

The first research paper (Section 2) of this dissertation, titled “*Measuring the Success of Corporate Venturing: Integrating Three Decades of Research*” is a systematic literature review. This study reviews the existing literature on the success measurement of venturing activities published since 1985. Thereby, it gives scholars a comprehensive overview and structure for measurement approaches and provides practitioners with implications to improve measurement approaches, and therewith to control and improve CV initiatives and outcomes.

While the selection and execution of corporate venturing activities (CV) is a central aspect of the management of all CE initiatives, the success of the CV relies also on the observation of its outcomes (Titus et al., 2017; Weiss & K. Kanbach, 2021). The literature on measurement approaches to corporate venturing (CV) outcomes however, presents a diverse array of measurement approaches. On the one hand, these approaches measure CV outcomes at different levels (e.g. the corporate or the venture unit) (e.g. Gompers & Lerner, 1998; Sykes, 1992). On the other side, measurement approaches comprise different qualitative and quantitative measures such as financial performance, new patents, gained knowledge, or contribution to strategic items (e.g. Bassen et al., 2006; Miller et al., 1988; Siegel et al., 1988). Three major issues result from this circumstance. First, there is no common understanding of how measurement of CV outcomes, essential for the management of activities, can be set up. Second, the different approaches in the literature rarely build on each other or are not normed with regards to outcome measurement. Third, there is no overview of the existing measurement approaches of extant CV research. As a result, there is a limited understanding of one vital component for the management of CE activities. To address this issue, the first research paper is set out to investigate the array of existing measurement approaches with the aim to provide transparency and structure in the broad field of CV research.

For this, a systematic review of the studies in the field is conducted, which follows the proceedings of Tranfield et al. (2003). The review gathers a preliminary sample comprising 464 studies which are systematically analyzed for redundancies, focus, and

relevance, leading to a final sample of 28 studies. These are then analyzed by their research foci and contributions in detail and finally structured and categorized.

The findings of the systematic literature review of this dissertation can be summarized into three main points.

First, the review builds three structural dimensions of measurement approaches that emerge from across the different studies. These are a) “*level of analysis*” (parent, program, and venture levels), b) “*measurement perspective*” (objective, subjective, and mixed measurement) and c) “*locus of opportunity*” (internal, external, and general CV activities). Second, nine specific clusters of different measurement approaches are defined, and build an integrated overview. These clusters allow the formation of meaningful groupings of the measurement approaches and reveal the heterogeneity of these approaches. Third, the specific measurement items in the array are identified and structured, leading to 114 financial and non-financial items used in approaches across levels of analysis and loci of opportunity. With these findings, the study contributes to research by giving transparency to a scattered field of research and providing scholars with structural dimensions of CV measurement. Furthermore, it helps to build consensus within the variety of CV success-measurement approaches with meaningful clusters. Additionally, the study provides relevant insights for practitioners, by making transparent the various measurement approaches and items and enable them to set up and improve the controlling of CV activities. This ultimately offers guidance to improve the management of these activities within CE initiatives.

The systematic literature review is co-authored with Dominik K. Kanbach and Lucas Costantino. It was submitted as a full paper to the *EURAM Conference 2021- “Reshaping capitalism for a sustainable world”*. After a double-blind peer review it was accepted in the Strategic Interest Group for Entrepreneurship and track for Business Models, Strategy, Innovation, and Entrepreneurial Venturing. Here the paper (Paper ID: 1197) was presented on June 17, 2021. EURAM – The European Academy of Management is one of Europe’s leading societies for the advancement of management research.

1.2.2 *Research Paper II: Empirical study (Section 3)*

The second research paper of this dissertation, titled “*Beyond Concepts: Uncovering Entrepreneurial Activities in Early-Stage Venture Creation*” is an empirical study that investigates the actions of individual entrepreneurs while creating a new venture. This study aims to facilitate a better understanding of the ambiguous actions and activities in new ventures creation.

To date, entrepreneurial action has been investigated from different perspectives to understand how new ventures are created. The challenges by which venture creation is accompanied have either been investigated on the firm or individual level. Due to their ambiguities, the understanding of entrepreneurial actions is limited for the early stage, and explanations from a firm-level perspective (e.g., resource availability and acquisition) fall short, as they do not specify how resources are used, gathered, and developed in the early stage. While first studies identify different dimensions of entrepreneurial action associated with entrepreneurial mindsets and frameworks (Fisher et al., 2020; Kuratko, Fisher, et al., 2021; Morris et al., 2001), it remains unspecified what entrepreneurs do and why, especially during the initial stages of venture creation, when individual resources are turned into organizational ones (Korsgaard et al., 2021; Thompson et al., 2020; Williams et al., 2021).

The study builds on a grounded theory research approach and investigates entrepreneurial action through 112 in-depth interviews, which are conducted with novice (first-time founders) and experienced entrepreneurs (at least one venture founded). The findings from this empirical study can be summarized in three major points. First, 67 types of entrepreneurial actions as well as their meaning and purpose are defined. Second, these actions are structured among 27 activities for both groups, by which three dominant dimensions of entrepreneurial activity emerge. Third, intra-group comparisons reveal, a) how entrepreneurs differ processually in the creation and use of individual and organizational resources and b) how these actions and resources are interlinked. Thereby, the study enhances the understanding of entrepreneurial actions and is the first study to empirically contribute to the emerging concept of Entrepreneurial Resourcefulness, as it

offers dimensions of entrepreneurial activity and offers concrete and tangible actions and their meaning. (Michaelis et al., 2022; Moss et al., 2022; Zahra, 2021). Furthermore, these findings offer practitioners a) the opportunity to improve entrepreneurship education formats, b) give investors a foundation for the evaluation of new ventures teams, and c) provide individuals with a structured overview on how to engage in early-stage venturing projects. Thereby, this study is an essential element of the dissertation that contributes to current research on entrepreneurial activity and clarifies the existing ambiguity in venture creation activity.

A preliminary version of this paper was presented at the 23rd Annual Interdisciplinary Conference on Entrepreneurship, Innovation, and Small-and-medium Enterprises -*G-Forum* (double blind peer reviewed) 2019 in Wien, Austria (September 25-27). An advanced version was presented at ISPIM Connects Valencia, (double blind peer reviewed) 2021, Valencia Spain (November 29-December 1).

This research paper is co-authored with Francie Lange, Nino Tomini, and Dominik K. Kanbach. It was submitted for publication in *Journal of Small Business and Entrepreneurship*. The paper is currently under double-blinded peer review. *Journal of Small Business and Entrepreneurship* is rated Q2 by SJR¹ and ranked C in the VHB JOURQUAL 3² ranking.

1.2.3 Research Paper III: Empirical study (Section 4)

The third research paper of this dissertation, titled “*Facebook and the Creation of the Metaverse: Radical Business Model Innovation or Incremental Transformation?*” is an empirical study. It takes a recent phenomenon as a communicated change of a large ICT

¹ SCImago Institutions Ranking (SJR) can be retrieved from www.scimagojr.com (accessed on August 31, 2022)

² The JOURQUAL 3 Ranking by the German Academic Association for Business Research (VHB) can be retrieved from www.vhbonline.org (accessed on August 29, 2022).

company under investigation. For the dissertation, this study is a valuable element to contribute to the understanding of drivers and effects of BMI and the question of how comprehensive a change of a BM can be and what its respective effects are, internally and externally.

Research on BMI as a central CE activity is emerging in several dimensions while a) defining BMI (Filser et al., 2021; Schneider & Spieth, 2013), identifying changes and influence on the BM (Baden-Fuller & Haefliger, 2013; Clauss et al., 2020), or investigating the antecedents and outcomes of BMI (Aagaard & Nielsen, 2021). However, whenever a change in the BM happens, it can radically change the way a company conducts business (Breier et al., 2021; Christensen et al., 2016) and how it is perceived by investors, customers, and competitors. (Fisher-Buttinger & Vallaster, 2008; Hatch & Schultz, 2003).

Therefore, the second study of this dissertation took the opportunity to investigate the recent move of the international company “Facebook”, which changed its name to “Meta” in October 2021. With that change, the company announced a new vision for social interaction on the internet, enabled through the application of the metaverse technology (Meta, 2021). While this change is ambiguous, it signals the introduction of a radically new BM. The study investigates this change to the BM and clarifies the change in terms of its impact on value creation, the value proposition, and value capturing activities.

Taking this example, the in-depth case study employs a qualitative content analysis of 153 data points, comprising academic studies and publicly available information, leading to three main findings. First, the results indicate that the communicated strategic refocusing does not resonate with a radical BMI pattern. Second, the refocusing might lead to incremental changes of the core elements in the BM, leading the BM to evolve into the innovation phase along the BM trajectory model. Third, the underlying logic of the communicated change primarily follows two aims: a) the improvement of the external perception of the company towards customers, investors, competitors, and b) the

signaling within the organization to initiate change along with technology advancements.

Being the first study to investigate the combination of the metaverse technology application in combination with BMI, it contributes to the understanding of trajectories of BMs (e.g. Tavassoli, 2015) and the change of BM components enabled through technology (Clauss, 2017). Additionally, it informs CE research about the drivers and consequences of BMI activities (Bashir & Verma, 2019). Furthermore, the study illuminates the differences between communicated changes and real impact on the BM. Hence, it is valuable for entrepreneurial management of CE initiatives, highlighting the benefits of external and internal signaling effects as a by-product of these activities.

This research paper is co-authored with Sascha Kraus, Dominik K. Kanbach, Peter M. Krysta, and Nino Tomini. It was submitted for publication in *International Journal of Entrepreneurial Behavior & Research*, where it was double-blind peer reviewed. A revised manuscript was resubmitted and accepted. The paper was published on February 23, 2022 in Volume 38, Issue 9 and is retrievable under: <https://doi.org/10.1108/IJEBR-12-2021-0984>. The *International Journal of Entrepreneurial Behavior & Research* is rated *Q1* by SJR and ranked *C* in the VHB JOURQUAL 3 ranking.

1.2.4 Research Paper IV: Conceptual paper (Section 5)

The fourth research paper of this dissertation is titled “*An Integrative Framework for Business Model Innovation in the Tourism Industry*”. It is a conceptual study that partially builds on the findings of the previous studies and proposes an integrated framework for BMI in dynamic service industries such as the tourism industry. Thereby, it connects the recent and relevant contributions to the field and is the first study that focuses on an integrated view of *what* aspects to consider, when BMI activities are executed and provides scholars with a frame for future research.

The Covid-19 pandemic affected societies and economies across the world. Especially, businesses in service industries needed to shut down their operations, leading to a loss of revenue or increasing costs for instance to implement safety measures. While these severe circumstances are one driver of change for service industries, the tourism industry is also affected by change resulting from climate change and resulting regulations and limitations as well as drastically changing customer preferences (Arcese et al., 2021; Kallmuenzer & Peters, 2018; Kraus, Clauss, et al., 2020; Peters & Kallmuenzer, 2018). BMI proves to be a suitable way for companies to overcome the challenging effects of change, as it can be a fruitful approach to finding and commercializing innovations through the very core of the firm (Chesbrough, 2010; Reinhold et al., 2017; Schaltegger et al., 2016).

Existing studies advance the understanding of BMs components and their innovations, however, the understanding of how to approach the innovation of BMs is limited and siloed (Zott et al., 2011), especially for service industries, and the tourism industry in particular. While existing studies focus on the effect of change on BMI success (Souto, 2015), others propose a structured process of BMI (Andrianto et al., 2021) *when* BMI activities are executed. There is, however, no understanding of *what* needs to be considered for BMI activities in service industries to take a holistic approach.

Therefore, the study builds on the existing literature and proposes an integrated framework, which considers four central aspects for BMI. First, change impulses are a starting point for BMI, which emerge from external and/or internal threats and opportunities. Second, BM design configuration across its three core areas (value creation innovation, value proposition innovation, value capture innovation) is essential and can lead to multiple BM scenarios, which need to be carefully evaluated and tested. Third, while doing so, three contextual factors, a) Service newness, b) Degree of change, and c) Destination characteristics) affect the potential of new BMs and are therefore fostering or limiting aspects of BMI. Fourth, when conducting BMI, the desired outcomes need to be measured and controlled, as they are accompanied by economic, ecologic, and social impact. With its proposed framework, the study contributes to the BMI literature, offers

guidance for future research, and offers practitioners a guideline for BMI activities in service industries.

This research paper is co-authored with Sascha Kraus, Andreas Kallmünzer, Dominik K. Kanbach, and Peter M. Krysta. It was submitted for publication where it was double-blind peer reviewed. A revised manuscript was resubmitted and accepted for publication in *Service Industries Journal* on September 11, 2022. *Service Industries Journal* is ranked C bin the VHB JOURQUAL 3 ranking and rated Q1 by SJR.

1.3 Journals and publication status

At time of submitting this publication-based dissertation, the publication status of the four research papers is as shown in Table 1.

Table 1: Publication status of the research papers

No.	Title	Publication status
I	Measuring the Success of Corporate Venturing: Integrating Three Decades of Research	Full paper accepted and presented at <i>EURAM Conference 2021</i> , 16-18 June 2021, Paper ID: 1197 Track: ST03_01/ST06_01/ST13_01 - Business Model - Strategy, Innovation, and Entrepreneurial Venturing
II	Beyond Concepts: Uncovering Entrepreneurial Activities in Early-Stage Venture Creation	Presented at the 23 rd Annual Interdisciplinary Conference on Entrepreneurship, Innovation, and Small-and-medium Enterprises - <i>G-Forum</i> (double blind peer reviewed) 2019 in Wien, Austria (September 25-27) Presented at ISPIM Connects Valencia 2021(double blind peer reviewed), Valencia, Spain on November 29-December 1) Submitted for publication in the <i>Journal of Small Business & Entrepreneurship</i> (ISSN 0827-6331); currently under double-blind peer review
III	Facebook and the Creation of the Metaverse: Radical	Published in <i>International Journal of Entrepreneurial Behavior & Research</i> (ISSN 1355-2554), Vol. 28, No. 9, pp.

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	Business Model Innovation or Incremental Transformation?	52-77 (Link: https://www.emerald.com/insight/content/doi/10.1108/IJEBR-12-2021-0984/full/html), DOI: 10.1108/IJEBR-12-2021-0984
IV	An Integrative Framework for Business Model Innovation in the Tourism Industry	Published in <i>The Service Industries Journal</i> ; (ISSN 0264-2069), Vol. 42 (13/14), (Link: https://www.tandfonline.com/doi/full/10.1080/02642069.2022.2127690), DOI: 10.1080/02642069.2022.2127690

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Introduction

Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of Management*, 37(4), 1019–1042.

2 Measuring the Success of Corporate Venturing: Integrating Three Decades of Research

Research Paper I: Literature Review

Full paper accepted and presented at *EURAM Conference 2021*, 16-18 June 2021, Paper ID: 1197

Track: ST03_01/ST06_01/ST13_01 - Business Model - Strategy, Innovation, and Entrepreneurial Venturing

Authors: Maurice M. Steinhoff, Lucas Costantino, and Dominik K. Kanbach

Abstract

Measurement approaches to corporate venturing (CV) success are highly diverse in the extant literature. Furthermore, these approaches rarely build on each other, making it difficult to derive comparable conclusions about CV outcomes. Building on a systematic review of three decades of research, the objective of this study is to provide transparency and structure in the broad field of CV research. This paper analyzes 28 studies in detail, resulting in two main contributions to the literature on the subject. First, three structural dimensions of measurement approaches emerge from across the different studies, namely, “level of analysis” (parent, program, and venture levels), “measurement perspective” (objective, subjective, and mixed measurement) and “locus of opportunity” (internal, external, and general CV activities). Second, an integrated overview of nine specific clusters structures the different measurement approaches. These clusters allow the formation of meaningful groupings of the measurement approaches, but also make transparent the approaches’ heterogeneity, as well as specific measurement items. Thereby, the study contributes to CV research by revealing and reconciling the variety of CV success-measurement approaches. The study also provides relevant insights for practitioners, by making transparent the various approaches to measuring the success of CV activities.

Keywords: Corporate Venturing; Success Measurement; Structured Literature Review

2.1 Introduction

Scholars and practitioners alike have continued to show a strong interest in corporate venturing (CV). Numerous empirical and theoretical publications in the field have arisen in the last decade, covering its antecedents, forms, approaches, and outcomes (Narayanan, Yang, & Zahra, 2009). The growing number and prominence of corporate venturing activities of established companies have fueled the increased academic interest (Brigl et al., 2018). In times of rapidly changing business environments, company leaders use CV to reach various financial and quantitative goals (e.g., boost revenues, increase the number of clients), as well as strategic goals (e.g., gain access to new technologies, accelerate innovation) (Brigl et al., 2018). In recent years, CV has strengthened its position as a corporate development activity and remains highly relevant (Hill & Birkinshaw, 2014; Lerner, 2013).

Even though CV is widely accepted as not only a financial investment but also a contribution to the strategic development of a firm (Narayanan et al., 2009), scholarly examination of CV outcomes and success factors is fragmented, resulting in a plethora of different definitions and measurement approaches (e.g., Garud & van de Ven, 1992; Hill & Birkinshaw, 2014). Hence, there is no common understanding of how to measure CV outcomes or draw robust conclusions. Highlighting this issue, Narayanan et al. (2009) encourage future research in this area and state a “need for the careful selection of CV outcomes and their measures” (Narayanan et al., 2009, p. 69). Kuratko and Audretsch (2013) stress, “Companies must create venture evaluation and control systems that assess venture performance on criteria that follow from the venture’s founding motive” (Kuratko & Audretsch, 2013, p. 303).

To the best of our knowledge, no review of existing approaches to the measurement of CV success resides in existing CV research. Such a review could support the scientific discussion of CV outcomes and lay the groundwork for further theoretical and empirical studies in this direction.

Often CV-activity outcomes are highly unpredictable, comparable to “ships sent out to sail uncharted waters” (Breuer, 2013, p. 2). These insecurities might lead to early termination of CV activities (Breuer, 2013). In this context, such a review could function as a guide and stimulate creativity for further developing existing measurement approaches or establishing new ones. Hence, building upon a systematic review of the literature, the research question that this study addresses is: *Which CV measurement approaches can be identified in the literature and how can they be categorized comprehensively?*

In this context, the objective of this study is to create transparency and structure within the landscape of CV success measurement. The review includes, on the one hand, literature explicitly dealing with the issue of success measurement in CV and, on the other hand, studies with different purposes but defining and measuring CV success as a “by-product.” In addition to the measurement approaches, this study reflects the authors’ theoretical considerations, to foster the critical discussion of CV success measurement. An organizing and integrative overview offers a guide for future research toward cumulative and generalizable findings.

To arrive at the defined goal, the study is organized as follows. The next part describes the method employed to conduct the systematic review, after which the descriptive results and study classification are outlined. Derived dimensions of CV success measurement are described. Building on these dimensions, the integrated overview and the study allocation are presented, and the respective measurement items are shown. The study closes with contributions to research and practice, study limitations, and directions for further research, as well as the conclusion.

2.2 Method of review

To analyze corporate venturing success-measurement, a systematic literature review was conducted, based on a three-step approach that Tranfield, Denyer, and Smart (2003) describe. The approach ensures replicability, by being explicit, scientifically rigorous, and transparent (Tranfield et al., 2003). Following previous literature reviews in the field of corporate venturing (e.g., Gutmann, 2019; Narayanan et al., 2009; Röhm, 2018),

pertinent criteria were defined for including studies, a replicable search strategy was followed, and a methodical approach to structuring the findings, based on previous research, was implemented.

The first step included the identification of the need for a review and preparation of a proposal for producing one. Then, the review was conducted. In this context, keywords for the search were defined, and the search was conducted in the databases of EBSCO-host Global Search, with access to 17 databases including the *EBSCO Business Source Complete*, *Elsevier Science Direct*, *Emerald Insight*, *Academic OneFile*, and *JSTOR*. The selection of publications utilized clearly defined criteria: First, only peer-reviewed quality journals in English were considered, and second, the quality assessment was conducted with a benchmark based on three major academic journal rankings: VHB Jourqual (JQ) 3 (Germany) from 2015, the Academic Journal Guide/ABS (UK) from 2018, and the JCR Impact Factors (IF) by Clarivate Analytics from 2019.³ As the journal rankings follow different methodologies, a conversion table provided by (Kraus & Dasí-Rodríguez, 2020) allows for comparability and a cut-off for papers rated “C” or equal (see Table 1).

Table 2: Conversion table for journal rankings

JOURQUAL 3 2015	AJG (ABS) 2018	JCR IF 2019
A+	4*	≥ 5.0
A	4	≥ 3.5
B	3	≥ 2.5
C	2	≥ 1.5
D	1	≥ 0

³ VHB JOURQUAL 3 retrieved from www.vhbonline.org; on June 26, 2020. AJG 2018 retrieved from <https://charteredabs.org/academic-journal-guide-2018-view/>; on October 18, 2020. JCR Impact Factors retrieved from <https://clarivate.com/webofsciencegroup/>; on October 20, 2020.

Source: Kraus & Dasí-rodíguez, 2020)

Based on an exploratory reading of the extant literature, the following search string was implemented, meaning that the database item had to contain the following words within its title, abstract, or keywords: “corporate vent* AND (measur* OR controlling OR performance OR success OR value).” The search resulted in a preliminary sample of 464 sources published between 1985 and 2019.

In this step, the sample was further narrowed, to balance comprehensiveness and feasibility. Following the identification of research items returned, the study abstracts were scanned and evaluated according to their relevance (e.g., direct/indirect relation to success measurement in CV). In this process, articles focusing on external CV (e.g., Corporate Venture Capital (CVC)), internal CV, or CV in general were considered relevant. Repetitive findings (56 articles) and those found to be irrelevant for the purpose of this review (356 articles) were excluded. The main reasons for the exclusion were (A) a lack of thematic relevance regarding performance measurement⁴ and (B) a lack of focus on CV (e.g., very wide focus on innovation or corporate entrepreneurship). Additionally, reading the full text of 28 articles resulted in their exclusion for the same reasons. While carefully reading the remaining articles and checking for cross-references, six additional articles were found and added to the final sample, comprising 28 articles included in the review.

In the third step, a report of the findings was created and disseminated. First, a descriptive analysis was created. Second, a thematic analysis outlines, links, and discusses the contributions. Finally, the findings were translated into implications that might allow researchers and practitioners to make better-grounded judgments.

⁴ Maula, Autio, and Murray (2003) were excluded because no performance measurement is conducted in their paper.

2.3 Descriptive results and classification

The 28 studies under review were published in 15 different journals.⁵ Table 2 provides an overview of the studies, including their journal rankings and sample sizes.⁶ Fourteen of the included articles were found in the *Journal of Business Venturing*, two in the *Journal of Product Innovation Management*, and the remaining 13 articles appeared in 13 different journals. The publishing period ranged from 1987 to 2017. Eight studies were published before 1995, six between 1995 and 2001, seven between 2006 and 2009, and eight after 2012. All 28 included studies are empirical; however, only 24 studies empirically measure CV performance, while five empirically investigate different concepts to conceptually develop measurement approaches.

The studies under review comprise two groups, according to their research foci. Six out of the 28 reviewed studies focus on the development of a performance-measurement approach for CV. The majority of the studies under review (22 out of 28) are allocated to the second group because they cover this topic by defining CV performance measurement as a by-product of researching and measuring related subjects.

⁵ Gompers and Lerner's (1998) publication medium is the publication platform of the National Bureau of Economic Research of the USA.

⁶ Some studies used additional methods of data collection to validate their findings, without stating the respective sample sizes. Table 2 contains the sample sizes of the "main" data-collection methods of the studies.

Table 3: Overview of studies included in the review

#	Author(s), year	Journal / Institution	JOUR-QUAL 3	AJG (ABS) 2018	JCR IF 2019	Impact Factor	H Index	Research focus	Surveys	Interviews	Secondary data anal.	Others *
"Direct" research focus	1 Block & Ornat, 1987	Journal of Business Venturing	A	4	7.590	7.76	154	Direct	42	-	-	-
	2 Miller et al., 1988	Journal of Business Venturing	A	4	7.590	7.76	154	Direct	-	-	112	-
	3 Sykes, 1992	Journal of Business Venturing	A	4	7.590	7.76	154	Direct	-	-	-	8
	4 Bassen et al., 2006	International Journal of Technology Management	C	2	1.348	1.19	51	Direct	-	-	-	-
	5 McGrath et al., 2006	MIT Sloan Management Review	C	3	2.706	2.19	87	Direct	-	>200	-	-
	6 Napp & Minshall, 2015	Research-Technology Management	C	0	2.449	1.35	58	Direct	-	>30	-	-
"Indirect" research focus	7 Siegel et al., 1988	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	52	-	-	-
	8 Sykes, 1990	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	31	-	-	-
	9 Tsai et al., 1991	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	-	-	161	-
	10 Garud & van de Ven, 1992	Strategic Management Journal	A	4	5.471	6.67	253	Indirect	-	-	-	719
	11 Ohe et al., 1992	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	38	-	-	-
	12 McGrath, 1995	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	-	>200	-	-
	13 Sorrentino & Williams, 1995	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	-	-	88	-
	14 Shrader & Simon, 1997	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	60	-	-	-
	15 Gompers & Lerner, 1998	National Bureau of Economic Research	-	-	-	-	-	Indirect	-	-	32364	-
	16 Thornhill & Amit, 2001	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	97	-	-	-
	17 Dushnitsky & Lenox, 2006	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	-	-	171	-
	18 Hill & Birkinshaw, 2008	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	95	-	-	-
	19 Kuratko et al., 2009	Business Horizons	C	1	3.444	4.49	67	Indirect	145	-	-	-
	20 Benson & Ziedonis, 2009	Organization Science	A+	4	2.790	3.86	211	Indirect	-	-	242	-
	21 Hill et al., 2009	Strategic Entrepreneurship Journal	A	3	6.200	3.69	31	Indirect	95	-	-	-
	22 Johnson, 2012	Journal of Small Business Management	B	3	3.461	4.02	94	Indirect	38	-	-	-
	23 Garrett & Neubaum, 2013	Journal of Product Innovation Management	A	4	5.000	5.27	126	Indirect	145	-	-	-
	24 Hill & Birkinshaw, 2014	Journal of Management	A	4	8.880	11.45	192	Indirect	95	-	-	-
	25 Garrett & Covin, 2015	Journal of Product Innovation Management	A	4	5.000	5.27	126	Indirect	145	-	-	-
	26 Covin et al., 2015	Journal of Business Venturing	A	4	7.590	7.76	154	Indirect	145	-	-	-
	27 Futterer et al., 2017	Long Range Planning	B	3	4.041	5.15	89	Indirect	128	-	-	-
	28 Makarevich, 2017	Creativity and Innovation Management	C	1	2.113	2.89	50	Indirect	34	-	-	-

* Sykes (1992) conducted 8 case studies; Garud & van de Ven (1992) coded 719 distinct events

Source: Own illustration

2.3.1 Dimensions of CV success measurement

Three dimensions for measuring the success of CV were identified across the studies in the sample, namely (1) measurement perspective, (2) locus of opportunity, and (3) level of analysis. These dimensions allow to structure the sample among common and mutually exclusive attributes, as shown in Table 3. The dimensions and respective scales were identified in the extant research and build on the thematic foci of the studies under review. In the following paragraphs, the three dimensions are discussed to lay the foundation for the integrated overview.

Table 4: Overview dimensions and categorization

#	Author(s), year	Locus of opportunity			Measurement perspective			Level of analysis			Data collection
		I	E	G	Su.	Ob.	Mi.	Pa.	Pr.	Ve.	
"Direct" research focus	1			✓			✓			✓	Survey
	2			✓		✓				✓	Secondary data analysis
	3			✓			✓			✓	Interviews, observations
	4		✓			✓			✓		Case study with one corporation (no further details)
	5			✓		✓			✓		Interviews, observations, secondary data analysis
	6		✓				✓			✓	Interviews, secondary data
"Indirect" research focus	7		✓		✓				✓		Surveys
	8		✓		✓			✓			Surveys
	9			✓		✓				✓	Secondary data analysis
	10	✓					✓			✓	Interviews, observations, secondary data analysis
	11			✓	✓					✓	Surveys
	12	✓					✓			✓	Interviews, secondary data analysis
	13			✓		✓				✓	Secondary data analysis
	14			✓			✓			✓	Surveys, secondary data analysis
	15		✓			✓			✓		Secondary data analysis
	16	✓			✓					✓	Surveys
	17		✓			✓			✓		Secondary data analysis
	18			✓			✓		✓		Surveys, follow-up phone calls/ secondary research
	19	✓			✓					✓	Surveys
	20		✓			✓			✓		Secondary data analysis
	21			✓			✓		✓		Surveys, follow-up phone calls/ secondary research
	22	✓			✓					✓	Surveys
	23	✓			✓					✓	Surveys
	24			✓			✓		✓		Surveys, follow-up phone calls/ secondary research
	25	✓			✓					✓	Surveys
	26	✓			✓					✓	Surveys
	27	✓			✓				✓		Surveys
	28	✓					✓		✓		Interviews, observations
Sum		11	7	11	10	8	11	9	5	15	

Pa. = Parent; Pr. = Program; Ve. = Venture // Su. = Subjective; Ob. = Objective; Mi. = Mixed // I = Internal; E = External; G = General

Source: Own illustration.

2.3.1.1 Locus of opportunity

The locus of opportunity is a dimension commonly used to categorize CV activities, applicable as another dimension for structuring CV measurement approaches. The

classification is based on the respective authors' explicit description of the research topic, as follows:

- “Internal”: studies dealing with internal corporate venturing (ICV);
- “External”: studies dealing with CVC;
- “General”: studies researching CV in general, without further specification.

The underlying challenges regarding the different loci are similar; therefore, findings of studies categorized by one locus can (at least partially) also apply to other loci (Napp & Minshall, 2015). Regarding the locus of opportunity, eleven of the reviewed studies were classified as “internal,” seven as “external,” and eleven as “general.”

2.3.1.2 Measurement perspective

The measurement perspective, namely, “subjective vs. objective,” is another dimension suitable for structuring the measurement approaches under review, according to their distinct characteristics. Among the studies analyzed, the most frequently applied distinction is between strategic and financial measures, followed by six other classifications, such as “objective vs. subjective.” Collectively, most papers reviewed (n=20) do not explicitly group their measures.⁷

The distinction “subjective vs. objective” by Shrader and Simon (1997, p. 56) applies as a set of umbrella terms for differentiating the measurement approaches from each

⁷ Within this group, two papers do not contain measures, namely, Sykes (1992) and McGrath et al. (2006). Nine papers only apply one or two measures in their approach, making an explicit categorization obsolete. Moreover, two studies, namely, Garud and van de Ven (1992) and McGrath (1995), employ approaches that are very individual and event-based, making a categorization inapplicable, leaving only seven studies without explicit categorizations.

other.⁸ Following their argumentation and the analysis of the other studies, three different “measurement perspectives” are defined, as follows:

- “Subjective” perspective: relies on an observer and general impressions, opinions, and feelings (e.g., perceived performance stated by managers);
- “Objective” perspective: independent of an observer (e.g., quantitative data analysis of traditional financial measures);
- “Mixed” perspective: relies on both subjective and objective perspectives.

Among the studies, ten are classified as “subjective,” eight as “objective,” and eleven as “mixed.”

2.3.1.3 Level of analysis

The level of analysis differentiates CV success measurement in extant research, it is argued, because different objectives on different levels require distinct measurement approaches (Napp & Minshall, 2015). Most prominently, Napp and Minshall (2015) emphasize the differences between the parent, program, and venture levels. According to their rationale, the parent firm can capture different types of relevant values from ventures and CV programs. Following their logic, exploitative value can be captured from ventures (e.g., leveraging own technologies) while explorative value can be captured from CVC programs (e.g., window on technology).

By the same token, Bassen et al. (2006) discuss the possibility of using distinctly balanced scorecards on the venture (“portfolio company”), fund, and parent-company levels (Bassen et al., 2006, p. 437). Likewise, in terms of incentives for venture managers, measurement-level adequacy is seen as important, and a measurement on the venture level is recommended because only this level can be directly influenced by the venture managers (Block & Ornati, 1987; Sykes, 1992). The broad perspective of the parent

⁸ Garrett and Covin (2015, p. 12) also use the word “subjective” to describe the nature of their measurement approach.

level considers that most corporations do not conduct CV primarily for financial returns. Rather, they want to generate strategic value that unfolds on the parent level (Sykes, 1990), where the “failure” of a venture might still create value if strategic benefits for the parent company outweigh the initial investment (Dushnitsky & Lenox, 2006, p. 758).

Following the analysis of the studies, three different levels of analysis are defined:

- Parent level: contribution of CV to the performance of the parent company;
- Program level: performance measurement of the CV unit and individual investments;
- Venture level: performance measurement of venture operations.

Although all studies do not explicitly discuss or justify the levels of analysis, it is possible to determine one “major” level of analysis. Finally, nine papers are classified as parent-level, five as program-level, and fifteen as venture-level measurements.

2.3.2 Integration of dimensions and study allocation

The two dimensions “locus of opportunity” (vertical) and “measurement perspective” (horizontal) were combined, resulting in an integrated 3x3 matrix. The 28 reviewed studies are categorized within the nine different clusters, as Figure 1 shows. As a third dimension the “level of analysis” was attached for an informative purpose.

Figure 2: Clustering matrix: distribution of studies

		Measurement perspective				Level of analysis		
		Subjective	Mixed	Objective	Sum	Parent	Program	Venture
Locus of opportunity	Internal	7 I	3 II	0 III	10	2	1	7
	External	2 IV	1 V	4 VI	7	4	3	0
	General	1 VII	6 VIII	4 IX	11	3	1	7
Sum		10	10	8	28	9	5	14

Source: Own illustration.

The studies along the dimensions are almost evenly distributed. Dimension 1 (locus of opportunity) categorizes the studies as internal n=10; external n=7; and general n=11. Dimension 2 (measurement perspective) is subjective n=10; mixed n=10; objective n=8. Dimension 3 (level of analysis) shows a high accumulation of studies measured at the venture level (n=14), followed by the parent level (n=9), and least represented by the program level (n=5).

There is a strong tendency toward measurement of internal CV activities from subjective or mixed perspectives, and not from an objective perspective. A potential explanation could be that by their nature, internal CV activities are less likely to generate data available to outsiders. Here, data regarding, e.g., the stock-market reaction to acquisition announcements (Benson & Ziedonis, 2009) or “probability of an IPO (x) pre-money valuation” (Gompers & Lerner, 1998, p. 47) is generated and can be examined. The following paragraphs describe the resulting nine clusters in detail, introduce the allocated studies, and briefly compare differences and communalities.

2.3.2.1 I - Subjective measurement of internal venturing activities

Containing seven studies, this cluster is the largest in the analysis. Futterer, Schmidt, and Heidenreich (2017) focus on internal corporate venturing (ICV) and employ a fine-grained item composition, measuring the perceived financial and non-financial performance of the corporation. Measuring at the program level, Thornhill and Amit (2001) apply only one proxy and ask CV professionals to indicate the degree (on a scale from one to seven) to which they agree or disagree with the statement that their “venture had been able to meet milestones on schedule” (Thornhill & Amit, 2001, p. 37). Kuratko, Covin, and Garrett (2009) focus on ICV and apply only one very general item, asking respondents to reply to one question only, namely, to indicate the state of their current ICV initiatives on a scale from one to four.

Table 5: Subjective measurement of internal venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Subjective measurement of internal venturing activities	Futterer et al., 2017	Perceived financial and non-financial venture performance	8	1) "Strongly disagree" to 7) "Strongly agree"	Surveys	✓		
	Thomhill & Amit, 2001	Perceived ability to generally meet milestones on schedule	1	1) "Strongly disagree" to 7) "Strongly agree"	Surveys			✓
	Covin et al., 2015	Perceived performance based on general expectations of parent corporation	4	1) "Strongly disagree" to 7) "Strongly agree"	Surveys			✓
	Garrett & Covin, 2015	Perceived performance based on general expectations of parent corporation	4	1) "Strongly disagree" to 7) "Strongly agree"	Surveys			✓
	Johnson, 2012	Perceived performance based on general expectations of parent corporation	4	1) "Strongly disagree" to 7) "Strongly agree"	Surveys			✓
	Kuratko et al., 2009	Perceived succes of current CV activities	1	1) Successful; 2) marginal; 3) unsuccessful; 4) impossible (e.g.: conflicting data; too soon to judge) to confidently evaluate venture success level	Surveys		✓	
	Garrett & Neubaum, 2013	Perceived performance based on general expectations of parent corporation	4	1) "Strongly disagree" to 7) "Strongly agree"	Surveys			✓

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

Johnson, in an unpublished dissertation in 2005, carried out the first systematic derivation of a measurement scale for CV performance on the venture level, afterward applied in a study that the author published in 2012. Later, subsequent researchers widely adopted and applied the same scale (Covin, Garrett, Kuratko & Shepherd, 2015; Garrett & Covin, 2015; Garrett & Neubaum, 2013), partially using a slightly modified version with minor verbiage changes. Johnson (2012) and his adopters measure ICV performance based on agreement with four statements, rated on a seven-point Likert Scale (1 = strongly disagree to 7 = strongly agree). Three statements ask for the ventures' fulfillment of general expectations and milestones/criteria set by the parent company; one directly asks if the venture is considered a success.

2.3.2.2 II - Mixed measurement of internal venturing activities

Makarevich (2017) identified priority innovation areas of the parent corporation, based on interviews with senior executives, and then compared these to the innovation areas

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of the ventures launched. Then, he divided the number of ventures with successful innovations in the priority areas by the number of initiated ventures, to arrive at a rate that captures the ventures' contribution to the corporation's priority innovation areas. Additionally, he gathered the number of patents granted to the respective CV units as a success proxy (Makarevich, 2017).

Table 6: Mixed measurement of internal venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Mixed measurement of internal venturing activities	Makarevich, 2017	Ventures' contribution to corporations priority innovation areas; number of patents	2	A) # of ventures contributing to priority areas; B) # of patents	Interviews, observations	✓		
	McGrath, 1995	Dichotomous ranking of market worth, firm worth and competitive insulation	3	A) "High" or "low"; B) Nominal classification	Interviews, secondary data analysis			✓
	Garud & van de Ven, 1992	Coding of observed events	1	"Success" or "mixed" or "failure"	Interviews, observations, secondary data analysis			✓

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

Following a unique approach and being the only longitudinal study in the sample, Garud and van de Ven (1992) collected data on a venture within a large corporation over 12 years. In this study, they visited monthly steering committees for six years, conducted annual interviews with corporate sponsors, and examined company records and trade publications. Each event that provided evidence of an outcome was coded as either “positive” (good news or successful accomplishment), “negative” (bad news), or “mixed” (results indicating elements of both success and failure) by the venture members (Garud & van de Ven 1992).⁹ Tangible results, as well as less tangible corporate sponsors’ and entrepreneurs’ “value judgments” regarding the success or failure of activities, were

⁹ “Positive (negative) outcomes reflect venture members’ assessment of performance above (below) their aspiration levels. Thus, outcome events, as measured in this study, incorporate any changes that may have occurred in venture members’ aspiration levels over time” (Garud and van de Ven, 1992, p. 94).

included. Events with “mixed outcomes” were not included in the analysis, to minimize classification error. To avoid bias, the importance of events was not weighted (Garud & van de Ven, 1992).

Representing a mixed measurement approach, McGrath (1995) included interviews, published materials, project plans, and reports, following a three-step approach. First, the researcher classified individual ventures on a strategic level, according to their outcome. Successful ventures that met or exceeded targets for market share, profitability, and growth were labeled as “financial success” and the remaining ventures were categorized as (for example) “discontinued,” “sold off,” or “limping.” Second, with the help of a “trajectory template,” all ventures were coded as “high” or “low” in the categories “market worth,”¹⁰ “firm worth,”¹¹ and “competitive insulation.”¹² Third, on an operational level, major disappointing events¹³ were identified to generate additional qualitative insights into the outcomes (McGrath, 1995, p. 126).

2.3.2.3 III - Objective measurement of internal venturing activities

Interestingly, no studies in the sample can be allocated to this cluster, underlining the tendency toward subjective measurement of internal venturing activities.

2.3.2.4 IV - Subjective measurement of external venturing activities

In a quite detailed approach, Siegel et al. (1988) include four strategic objectives and one financial objective in their survey, following a two-step approach. First, the

¹⁰ “Indicator of the attractiveness of a firm's products and services to its customer population” (McGrath et al., 2006, p. 121).

¹¹ “Venture is deemed to be more attractive than competing alternatives within the firm” (McGrath et al., 2006, p. 121).

¹² “Imitation or appropriation of advantage will be delayed” (McGrath et al., 2006, p. 121).

¹³ “Articulation by respondents (or documentation in published materials) that results for an important objective of the venture significantly and negatively differed from prior expectations” (McGrath et al., 2006, pp. 125–126).

individual objectives' importance to CVC managers is evaluated on a four-level scale. Second, the general levels of satisfaction with the objectives are measured on a different four-item scale. Thus, they employed measures for importance and satisfaction in their subjective measurement approach.

Sykes (1990) focuses on external CV and applies only one item, namely, the perceived contribution to the corporation's strategic objectives. Being the first researcher to employ perceived performance measurement at the parent level, Sykes (1990) measures perceived "strategic value" by asking corporate managers for "the overall contribution (added value) of (CVC) programs to their (corporation's) strategic objectives" (Sykes, 1990) on a five-level scale.

Table 7: Subjective measurement of external venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Subjective measurement of external venturing activities	Siegel et al., 1988	Importance and satisfaction regarding five mostly strategic items	5	A) 1) irrelevant; 2) desirable; 3) important; 4) major objective; B) 1) unsatisfactory; 2) satisfactory; 3) highly satisfactory; 4) outstanding	Surveys			✓
	Sykes, 1990	Perceived contribution (added value) of programs to corporations strategic objectives	1	- 1; 0; + 1; + 2; + 3	Surveys		✓	

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

2.3.2.5 V - Mixed measurement of external venturing activities

Napp and Minshall (2015) distinguish between different indicator categories (qualitative metrics, quantifiable nonmonetary metrics, and quantifiable monetary metrics) and different types of benefits (exploitational, exploratory, synergy, and “other” benefits). Napp and Minshall (2015) propose a measurement approach, in between all three connections of the parent, the CV unit, and the venture, that always employs a composition of financial and nonfinancial (including quantitative and qualitative) measurement items, such as “Revenue from business development,” “Number of strategic alliances,” and “Health of start-up” (Napp & Minshall 2015, p. 34). Thus, this study aims to measure CV success holistically at the program level and, thereby, can be distinguished from studies of other clusters of the derived matrix.

Table 8: Mixed measurement of external venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Mixed measurement of external venturing activities	Napp & Minshall, 2015	Soft, quantifiable non-monetary and monetary metrics	25	Values; evaluations, perceptions	Interviews, secondary data			✓

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

2.3.2.6 VI - Objective measurement of external venturing activities

All studies in this cluster rely on the analysis of financial data and examine external CV activities. Gompers and Lerner (1998) define CVC success as direct and indirect returns to corporate and other investors. Since they did not have access to information about returns, they used a two-step approach as a proxy. First, they calculated the probability of an IPO¹⁴ of the ventures in their database, based on historical data ranging over 12 years. As a second proxy for investor returns, they calculated the valuation of the purchased firms at the time of the investment. The rationale behind the calculation is that the higher the pre-money valuation¹⁵ (price paid per share), the lower are the direct financial returns to the investors (Gompers & Lerner, 1998). Based on these two “success proxies,” the authors compared VC and CVC performance, to arrive at a conclusion about CV success.

¹⁴ And, in a different set of analyses, they calculate the “probability that the firm had gone public, filed a registration with the U.S. Securities and Exchange Commission (a preliminary step before going public), or had been acquired for a valuation of at least twice the post-money valuation of the financing” (Gompers & Lerner, 1998, p. 26). Further, the probability is calculated as p-values from Pearson χ^2 -tests of the equality of three outcomes (Gompers & Lerner, 1998, p. 43).

¹⁵ “Product of the price paid per share in the financing round and the shares outstanding before the financing round” (Gompers & Lerner, 1998, pp. 26–27).

Table 9: Objective measurement of external venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Objective measurement of external venturing activities	Benson & Ziedonis, 2009	Stock market reaction to acquisition announcement	1	"Value"	Secondary data analysis	✓		
	Gompers & Lerner, 1998	Probability of an IPO (x) pre-money valuation	2	"Value"	Secondary data analysis	✓		
	Bassen et al., 2006	Financial, internal process and market/ strategy perspective within a balanced scorecard	12	-	Case study with one corporation (no further details)			✓
	Dushnitsky & Lenox, 2006	Tobin's Q	1	"Value"	Secondary data analysis	✓		

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

Examining preconditions for value creation through CVC, Dushnitsky and Lenox (2006) used panel data of CVC investments over 10 years. In this course, they measured CVC success as the Tobin's Q ("market valuation of a firm over the value of firm tangible assets") (Dushnitsky & Lenox, 2006, p. 756) of the corporate parent. Allegedly, this measure captures both the narrow financial returns and the strategic benefits of CVC investments and represents a reasonable proxy for a firm's competitive advantage. In contrast to accounting-based measures, it captures the lag between CVC investments and realized benefits, by reflecting expected future earnings (Dushnitsky & Lenox, 2006). Based on this indicator, further calculations can provide additional insights. For example, it is possible to derive the elasticity of Tobin's Q to annual CV investments (Dushnitsky & Lenox, 2006).

Employing regression analysis with data from a 16-year period, Benson and Ziedonis (2009) examined the acquisition of ventures by CVC investors. In this context, they examined the CV performance as the stock market's reaction to the announcement of a venture acquisition. The stock-market reaction was then used to estimate the discounted future value of the firm. The authors claim that "if markets are efficient, then stock prices reflect the discounted value of all future cash flows and incorporate all relevant information. Thus, the change in the stock price around an acquisition announcement is used to measure the market's expectation of the performance of the acquisition" (Benson

& Ziedonis, 2009, p. 336–337). Drawbacks to this approach are the limitation to estimation figures and the fact that the takeover of small firms might not lead to significant market reactions (Benson & Ziedonis, 2009).

Focusing on measurement concepts for external CV, Bassen et al. (2006) suggest the use of a broad range of metrics, tailored to individual targets and phases, and propose a measurement approach based on Kaplan and Norton’s (1992) Balanced Scorecard. These metrics should be viewed individually and not summarized into one single monetary evaluation (Bassen et al., 2006).

2.3.2.7 VII - Subjective measurement of general venturing activities

Using twelve distinct items, Ohe et al. (1992) employ venture success/failure statements and a dichotomous measurement scale. Their indicators reflect financial venture performance (e.g., cash flow status), growth perspectives (e.g., planning for cutbacks), the reputation of the venture, and the general status (“going concern”) within the firm. They summarize the answers into a “success index” that indicates the overall percentage of “success” answers.

Table 10: Subjective measurement of external venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Subjective measurement of general venturing activities	Ohe et al., 1992	Stock market reaction to acquisition announcement	12	"success" or "failure"	Secondary data analysis		✓	

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

2.3.2.8 VIII - Mixed measurement of general venturing activities

Susan A. Hill and Julian Birkinshaw from London Business School conducted three of the four studies in this cluster. While their measurement approaches vary over the years, certain communalities are detectable (Hill, Maula, Birkinshaw & Murray, 2009; Hill

& Birkinshaw, 2008, 2014). The studies build on a dataset for whose initial creation they used surveys. Respondents were asked to assess the CV unit's contribution to the parent corporation, according to eight-to-ten financial and strategic proxies, on a five-point Likert Scale. In addition, follow-up phone calls (or secondary research) were conducted two years after the initial survey to check on CV unit survival.¹⁶

Table 11: Mixed measurement of general venturing activities

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Mixed measurement of general venturing activities	Hill & Birkinshaw, 2014	Perceived strategic and financial performance, survival status	8	A) 1) Below expectation; 3) equal to expectation; 5) above expectation; B) "Dead" or "Alive"	Surveys, follow-up phone calls/ secondary research	✓		
	Hill et al., 2009	Perceived strategic and financial performance, survival status	9	A) 1) Below expectation; 3) equal to expectation; 5) above expectation; B) "Dead" or "Alive"	Surveys, follow-up phone calls/ secondary research	✓		
	Hill & Birkinshaw, 2008	Perceived financial, technological and entrepreneurial performance, survival status	10	A) 1) Below expectation; 3) equal to expectation; 5) above expectation; B) "Dead" or "Alive"	Surveys, follow-up phone calls/ secondary research	✓		
	Shrader & Simon, 1997	Perceived and data-based sales growth and return on sales	2	A) "Value"; B) Scale from 1 to 5	Surveys, secondary data analysis			✓
	Sykes, 1992	Performance oriented remuneration for CV managers	-	-	Interviews, observations			✓
	Block & Omati, 1987	Qualitative and quantitative indicators for performance-based remuneration of CV managers	-	Yes/No; 1) minor to 5) major	Survey			✓

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

An identical-item composition for perceived financial performance is part of the analysis of all three studies: Internal Rate of Return (IRR), contribution to top-line growth, and increased valuation of corporate stock are examined (Hill et al., 2009; Hill & Birkinshaw, 2008; Hill & Birkinshaw, 2014). The chosen measurement items of the strategic constructs (in 2008, called “technological” and “entrepreneurial performance”) vary between the studies. Notably, Hill and Birkinshaw reuse the three technological-performance indicators they employed in 2008 in the 2014 publication, under the umbrella of “strategic performance.”

¹⁶ CV unit is considered a survivor if it is still active (Hill & Birkinshaw, 2008: 435).

Comparably diverse in terms of data collection, Shrader and Simon (1997) gathered information through a mix of archival data and surveys/discussions with managers (Shrader & Simon, 1997). They first derived adjusted growth in sales¹⁷ and adjusted return on sales (ROS),¹⁸ based on archival data for different ventures, and followed by a subjective evaluation of the same two measures by venture managers. The managers were asked to assess their respective venture's performance relative to firms in their industry, on a scale from one to five (Shrader & Simon, 1997).

Sykes (1992) considers measurement items, financial (e.g., financial goal achievement) and nonfinancial (e.g., the achievement of critical milestones; the degree to which a venture needs assistance from corporate personnel), in the context of performance-oriented venture-manager remuneration. The tendency toward operational measures and disregarding strategic benefits to the mother corporation is observed in this cluster, comparable to subjective measurement at the venture level.

2.3.2.9 IX - Objective measurement of general venturing activities

The measurement approaches of the studies in this cluster are quite homogeneous. Three studies analyze secondary data for "traditional" financial measures, to evaluate the success of individual ventures. McGrath et al. (2006) use individual developed concepts to measure CV performance at the program level. See Table 11 for an overview of studies in this cluster.

Table 12: Objective measurement of general venturing activities

¹⁷ Formula: (((company sales year 3 - company sales year 0/ company sales year 1) - ((segment sales year 3 - segment sales year 1)/ segment sales year 1))) (Shrader & Simon, 1997, p. 56).

¹⁸ "Subtracting the segment mean ROS from the companies' self-reported ROS" (Shrader & Simon, 1997, p. 56).

Allocation	Author(s), year	Measurement summary	# of items	Scale(s)	Data collection	Par	Pro	Ven
Objective measurement of general venturing activities	Tsai et al., 1991	Market share gain and ROI	2	Value	Secondary data analysis			✓
	McGrath et al., 2006	Concept of "real options"; flexible/ case-specific and learning-oriented metrics	13	1) "Strongly disagree" to 7) "Strongly agree"	Interviews, observations, secondary data analysis		✓	
	Miller et al., 1988	Measurement of "V" (based on ROI regressions)	1	"Value"	Secondary data analysis			✓
	Sorrentino & Williams, 1995	Market share	1	"Value"	Secondary data analysis			✓

Par = Parent level; Pro = Program level; Ven = Venture level

Source: Own illustration.

Following similar approaches and even relying on the same data set, including data on the first four years of operation of corporate ventures, Tsai, McMillan, and Low (1991) and Sorrentino and Williams (1995) examine individual ventures' performance. While Tsai et al. (1991) calculate venture success based on market-share gain and profitability (ROI), Sorrentino and Williams (1995) exclusively employ market share as a performance measure. Miller et al. (1988) introduce an individual approach to measuring CV performance called "V," based on a regression analysis of the return-on-investment value of the respective ventures.

McGrath et al. (2006) conclude that CV projects are best measured by applying their developed concept of "real options." This requires the management to use two very different measurement approaches within one company: traditional metrics in the company's core business, with a focus on operational excellence, and more flexible and learning-oriented evaluations in CV (McGrath et al., 2006). The "real options" concept includes a composition of 13 measurement items, such as the assessment of demand for a product, the industry novelty, or the potential for commercialization cost potentials (McGrath & MacMillan, 2000). Such learning-oriented indicators could measure the creation of a potentially valuable IP, new organizational capabilities, or the introduction of new products (McGrath et al., 2006).

2.3.3 Details on measurement items

Integrating the studies with their respective measurement items results in an overview that contains a total of 114 unique financial and nonfinancial measurement items (see Table 12).¹⁹ The reviewed studies contain a majority of nonfinancial measurement items (n=75) and a minority of financial measurement items (n=49).

¹⁹ In total, 144 measurement items were identified. Identical measurement items were counted once, leading to 114 unique items.

Table 13: Overview of measurement items per dimension

Locus of opportunity	Measurement perspective			Objective	
	Subjective	Mixed	Non-financial	Financial	Non-financial
Internal	<p>Financial</p> <ul style="list-style-type: none"> Cash flow (perceived) Adherence to budget (perceived) Return on investment (perceived) Share of venture is performing (or perceived) well in terms of the criteria (e.g., financial returns, market share) for parent corporation considers (or considered) important to the venture's success (perceived) 	<p>Financial</p> <ul style="list-style-type: none"> States growth (perceived) Return on investment (perceived) Share of equity (perceived) Start-up profit margin (perceived) Return on assets (perceived) Market worth (perceived) Market share (perceived) How work (perceived) non-financial work within firm 	<p>Non-financial</p> <ul style="list-style-type: none"> Number of patents per venture (P) Share of ventures contributing to corporations priority innovative areas (N) Competitive insulation (perceived) "Event coding" 		
External	<p>Financial</p> <ul style="list-style-type: none"> Share of the corporate sales (perceived) Signaling effect within the corporation (perceived) Share of current internal venturing initiative (perceived) This venture generally meets (or met) the expectations of the parent corporation (perceived) The parent corporation views (or viewed) this venture as being successful, overall (perceived) Degree to which parent believes that venture address its key initiatives on table for each stage of its development (perceived) Learning/acquisition of new knowledge for parent consideration (perceived) Ability of venture to generate meet initiatives (perceived) 	<p>Financial</p> <ul style="list-style-type: none"> Revenue of startups with parent firm and parent firm customers Revenue of parent from business developed with start-up Cost saving gained through collaboration with start-up Revenue of parent firm from customers dealing with start-up CVC with continued revenue with customers Third-party funding for start-up 	<p>Non-financial</p> <ul style="list-style-type: none"> # of customers parent not start-up solutions # of internal business solution benchmarked # of "open innovation events" # of strategic alliances # of Joint Development Agreements # of portfolio start-ups having contacts with parent firm # of start-up specific development programs # of start-up operations (or co-venturing) # of start-up square miles contracts # of investments of the CVC unit Relationship of parent with start-up (perceived) Degree to which start-up fills a gap in parent technology portfolio (perceived) Start-up contribution to patents development (perceived) Evolution of synergies created (perceived) R&D reduction by CVC activities (perceived) Substitution with the CVC unit (perceived) Methods of startups (perceived) 	<p>Financial</p> <ul style="list-style-type: none"> Stock market reaction to acquisition announcement Tobin's Q Probability of an IPO Pre-emptive valuation of treatments Return on capital employed (ROCE) Normalized profit through approximations of events Cost against budget Number of days per phase deal flow screening 	<p>Non-financial</p> <ul style="list-style-type: none"> Build appropriate IT tool and deadline # of meetings conference calls per quarter # of investments # of co-ventures # of joint d. alliances # of days per reaction # of qualified updates
General	<p>Financial</p> <ul style="list-style-type: none"> Cash flow rates (perceived) Share performance against plan (perceived) Percentage of venture revenue of the total company sales (perceived) Share of performance against plan (perceived) Operational profit rates (perceived) Accountable profit rates (perceived) Profit rate of sales compared with that of main business (perceived) 	<p>Financial</p> <ul style="list-style-type: none"> Contribution to top-line growth (perceived) Financial return to the corporation (e.g. IRR) (perceived) Increased valuation of corporate stock (perceived) Investment in disruptive technologies has potentially cannibalize existing technologies (perceived) States growth (perceived) Return on sales (perceived) VA-G value growth 	<p>Non-financial</p> <ul style="list-style-type: none"> Development of strategic relationships with external suppliers customers/competitors (perceived) Creation of patents completed (perceived) Retention/revocation of employees (perceived) A fraction new hires/employees (perceived) Verification of startup culture (perceived) Funding for internal entrepreneurs (perceived) Increased recognition of the importance of new business development (perceived) Creation of new computers has increase demand for products or technology (perceived) Increased visibility/awareness of corporation (perceived) Creation of breakthrough technology for the corporation (perceived) Creation of options on emerging technology (perceived) Survival (perceived) 	<p>Financial</p> <ul style="list-style-type: none"> Market share Market share gain Return on investment Measurement of "CV" (based on ROI regression) 	<p>Non-financial</p> <ul style="list-style-type: none"> Enhancement to intellectual property Development of superior human capital Innovations to improve the company/ventures Creation of vital new organizational capabilities (e.g. serving a new customer segments) "Fast Option" concept

Source: Own illustration.

For the clusters with studies allocated to objective measurement, studies favor financial measurement items over nonfinancial items. This is not surprising, as financial items build on commonly agreed-upon and objectively measurable indicators (e.g., return on

investment or stock-market reaction) and, therefore, contribute to objective measurement.

Surprisingly, however, only studies in the objective-measurement clusters introduce new, individually developed measurement items, namely, the measurement of “V” (financial, introduced by Miller et al., 1988) and the “real options” concept (nonfinancial, introduced by McGrath et al. 2000).

In contrast to the tendency toward financial items in objective approaches, there is a tendency toward nonfinancial items in studies with subjective-measurement approaches. Interestingly, almost all studies also use financial-measurement items. However, these items are measured as “perceived,” meaning study participants subjectively evaluate these indicators (e.g., perceived revenue, perceived return on investment).

The studies applying mixed-measurement perspectives combine different financial and nonfinancial measurement items. Interestingly, subjectively assessed financial-measurement items (e.g., perceived financial return, if investment) can also be found in this field of studies.

Overall, the clustering reveals that internal venturing activities are rather measured with subjective assessments of financial and nonfinancial performance, whereas compositions of measurements can be identified for external venturing activities. Furthermore, the dispersion of various measures applied for general venturing activities could be interpreted as a reflection of the wide spectrum of CV objectives or as a discordance in research.

2.4 Conclusion

The structured literature review identifies various measurement approaches out of 28 studies and categorizes them along two measurement dimensions in nine unique clusters. Thereby, the study provides contributions to both research and practice. First, the

derived dimensions for structuring CV measurement approaches allow scholars to make better sense of the myriad approaches used to measure CV success.

Second, the integrated overview, applying the “locus of opportunity” (internal, external, general) and “measurement perspective” (subjective, objective, or mixed), allows the creation of meaningful clusters within the approaches. This enhances the understanding of CV measurement approaches and their defining characteristics. Definitional thresholds based on salient dimensions, such as this study proposes, will allow an improved understanding and will better decompose CV measurement according to its distinct components and contextual conditions, as Gutmann (2019) suggests. The findings should also encourage future researchers in this field to attentively and explicitly consider those boundary conditions when designing success measurement approaches.

Consequently, the detailed analysis and categorization of CV success-measurement proxies deepen the understanding of the wide spectrum of indicators used and allows researchers to grasp the large variety of potential performance indicators. Most importantly, the study contributes to the discussion on CV outcomes by making transparent and reconciling the variety of measurement approaches employed in extant research.

For practice, this study provides valuable insights into the design of existing or new success-measurement approaches, with an overview of the wide array of applicable approaches and proxies. Specifically, the study shows that various loci of opportunity and measurement perspectives are considered when measuring CV success. In this course, the integrated overview is an intuitive and easily understandable tool, allowing practitioners to grasp the different applied measures. Therefore, the study can serve as an instrument for the initiation of CV activities as well as the designing or adjustment of suitable measurement approaches.

2.5 Limitations and further research

The study comes with several limitations, which can also serve as a potential starting point for further research. First, the selected approach does not allow an evaluation of the individual measurement approaches. Therefore, the clustering of the measurement approaches does not imply recommendations or “best-practices” for designing a measurement system. Instead, the insights based on this (to our best knowledge) first literature review on CV success measurement provide an in-depth understanding of the variety and heterogeneity of existing approaches. However, future research may find it valuable to critically and systematically assess CV success-measurement approaches based on their context-characteristics and, accordingly, conceptualize an evaluation for the measurement approaches.

Second, the measurement approaches this study presents are by no means exhaustive but, rather, illustrate the large variety of possible approaches that future research could consider. Given the wide range of financial and nonfinancial benefits of CV, new and creative ways for measuring CV success should additionally be developed. Moreover, the current dominance of cross-sectional studies should encourage future researchers to delve into longitudinal measurement approaches for CV success.

Third, the study does not distinguish between different CV modes (e.g., licensing, acquisitions, CVC). On the one hand, this issue stems from the unavailability of comprehensive information over all studies; on the other hand, the analysis would have been very fine-grained and was, therefore, out of scope. The overarching analysis of differences between internal and external modes of CV was seen as a reasonable compromise. However, future research should focus on defining CV-mode-specific performance indicators and measurement approaches.

Overall, a better common grounding for coherent and cumulative empirical work is necessary. Therefore, future research should emphasize theory-building, to lay the foundations for the development of a commonly applicable measurement framework that fits into the wider context of a general research framework, as Narayanan et al. (2009) also

propose. Guided by such a common foundation, future researchers could more consistently design their measurement approaches.

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3 Beyond Concepts: Uncovering Entrepreneurial Activities in Early-stage Venture Creation

Research Paper II: Empirical research paper

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Abstract

The creation of new ventures is accompanied by different entrepreneurial challenges at the individual and firm levels. Adjacent research studies focus either on the individual or on the firm level. However, there is a limited understanding of what entrepreneurs do and why, when turning individual resources into organizational ones in the early stage of venture creation. We employ a grounded theory research approach building on 112 in-depth interviews with novice and experienced entrepreneurs. Based on these findings we define the meaning and purpose of entrepreneurial action and identify three dimensions of entrepreneurial activity. Furthermore, by contrasting the findings across groups and dimensions, we reveal how entrepreneurs differ in the creation and use of individual and organizational resources and how these are interlinked with activities during early-stage venture creation. Thereby, we enhance and enrich the still emerging concept of Entrepreneurial Resourcefulness by contributing concrete and tangible actions and their meaning. Practitioners such as founders, educators, and investors benefit from the study's implications for entrepreneurship education and early-stage venture creation.

Keywords: Entrepreneurial activity, early-stage ventures, entrepreneurial experience, venture creation, resourcefulness, capabilities

3.1 Introduction

It is entrepreneurs who create new ventures (Gartner, Carter, and Reynolds 2010). During this venture creation process, it is the management of external and internal resources which builds the basis for the venture's future existence (Brush, Greene, and Hart 2002; Williams et al. 2021; Pleitner 1986). While doing so, entrepreneurs face several challenges including the liabilities of newness and smallness (Stinchcombe 1965; Freeman, Carroll, and Hannan 1983) contributing to high failure rates. While many new ventures still fail, entrepreneurship has become a relevant field of research, aiming to understand the ways in which entrepreneurs identify and create opportunities, how they act in resource-scarce environments, and how they build and develop their resource base. Therefore, the aim of the present study is to better understand what entrepreneurship as a practice comprises (Morris, Kuratko, and Schindehutte 2001; Hindle 2004) and how entrepreneurs pursue their entrepreneurial endeavors (Hindle 2004; Shepherd and Patzelt 2018) as they create new organizations (Gartner, Carter, and Reynolds 2010).

The process of venture creation, by its very nature, comes with several types of challenges, specifically in the early stage. To begin, entrepreneurs must turn individual resources into organizational resources and thereby construct a resource base necessary to build a successful organization (Baker and Nelson 2005; Brush, Greene, and Hart 2002). Simultaneously, entrepreneurs need to link market demands with innovative, often technology-intensive products or services (Osborne 1995; Amit, Glosten, and Muller 1993; Bouncken, Kraus, and Roig-Tierno 2021; Kraus, Roig-Tierno, and Bouncken 2019). Additionally, due to resource constraints, entrepreneurs can engage with highly innovative behaviors (Saleh and Wang 1993) to mobilize external resources (Fisher, Neubert, and Burnell 2021; Zane and DeCarolis 2016; Bouncken and Kraus 2022). In doing so, entrepreneurs face additional barriers and challenges related either to the venture or to the entrepreneur(s) themselves. The former, for instance, comprises the challenge to find first paying customers to gain traction, to build a team with the right composition of the relevant competencies, and to overcome the problem of adverse selection when signaling investors of being capable to pursue opportunities and to create wealth (Michael, Storey, and Howard 2008; Giardino et al. 2015). Challenges arise from deficits in

knowledge, skills and abilities within various domains, from diverse personal backgrounds, in varying aims and motivations, or related to risk assessment and risk perception when realizing ideas (Garba and Aliyu 2017; Džananović and Tandir 2020; Greenbank 2006). The biggest challenge entrepreneurs face overall is attempting to break through these barriers and not losing their high degree of entrepreneurial spirit as they do so (Stevenson and Jarrillo-Mossi 1986; Jarillo 1989). Those companies that cannot rise to these challenges remain small or ultimately fail. However, the understanding of entrepreneurial action to overcome these challenges is still limited.

On the one hand, a dominant logic prevails in the field of entrepreneurship, resource-based theory (RBT), which aims to explain how access to critical resources, such as financial, human, and networks, influence dependent variables, such as survival, performance, and competitive advantage (Barney 1991). In this regard, various strands of literature discuss the ways in which ventures identify, develop, attract, acquire, or accumulate internal and external resources (Barney, Ketchen, and Wright 2011; Sirmon et al. 2011; Maritan and Peteraf 2011; Hitt et al. 2011) across the entrepreneurial process (Amit and Schoemaker 1993; Helfat and Peteraf 2003; Jarillo 1989; Lorenzoni and Ornati 1988; Sirmon et al. 2011). This strand of research begins from the standpoint of an existing firm. However, in the early stage specifically, when firms are not yet in existence, an understanding of the processes and capabilities that explain how resources are mobilized does not yet exist theoretically.

On the other hand, entrepreneurs and their ways of thinking and acting are at the center of observation. Here, “an entrepreneur who does not have any resource strengths must construct a resource base— identifying, specifying, combining, and transforming personal resources into a new venture. This is the entrepreneurial challenge.” (Brush et al., 2002, p. 77). Thus, not only access to resources, but also how entrepreneurs use them. Alvarez and Busentiz (2001) highlight personal qualities in this respect, such as “the founder’s unique awareness of opportunities, the ability to acquire the resources needed to exploit the opportunity, and the organizational ability to recombine homogeneous inputs into heterogeneous outputs” (p. 771), to underline the relevance of a creative vision and the necessary capabilities for the successful entrepreneur.

Over the last two decades, scholars have developed several concepts to explain entrepreneurial thinking and acting and their interplay. From one perspective, the aim is to examine cognitive processes, such as causation and effectuation (Sarasvathy 2001a; An et al. 2020; Chandler et al. 2011; Ye 2016). In contrast, entrepreneurial action is the object of study, leading to new concepts, such as Opportunity Creation, Bootstrapping, and Entrepreneurial Activity (Servantie and Rispal 2018; Korsgaard, Müller, and Welter 2021; Fisher 2012). These concepts, such as Causational and Effectual behavior, or a bias towards exploitation, communication, and resource management, attempt to explain how entrepreneurs think and reason or how they act in the later stages of growth (Fisher et al. 2020; Mueller, Volery, and von Siemens 2012). In the early stages, however, research of the variety and diversity of actions and their meaning for the venture creation process is limited. It is therefore beneficial to investigate how individuals turn individual resources into organizational resources for the emerging venture, and how these resources are linked with respective actions to ascertain the purpose of different entrepreneurial actions. In the light of this discussion, this study aims to address the question: What activities do entrepreneurs perform in early-stage venture creation?

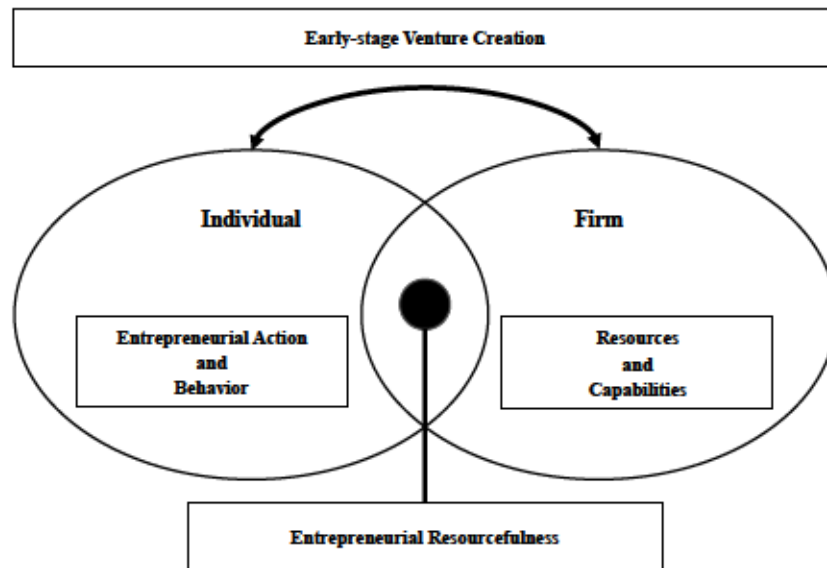
The study aims to contribute to the entrepreneurship literature in several ways. Firstly, it aims to establish an in-depth understanding of entrepreneurial action and behavior (Kuratko, Fisher, and Audretsch 2021; Shepherd et al. 2019; Wood, Bakker, and Fisher 2021). Secondly, it addresses the need to understand how entrepreneurial experience shapes entrepreneurial behavior (Fisher 2012; Reuber and Fischer 1992). Thirdly, by using an empirical approach, it addresses the call for further research encouraged in recent conceptual studies in the field (Williams et al. 2021; Zahra 2021; Kuratko, Fisher, and Audretsch 2021).

3.2 Theoretical foundation

This study takes a grounded theory approach to extend the knowledge of entrepreneurial action. Therefore, we initially offer a brief review of the relevant literature on

resources and capabilities and entrepreneurial decision-making and behavior, followed by a discussion of the concept of Entrepreneurial Resourcefulness as being an emerging concept in the research field. In Figure 1, we integrate the concepts which serve as the basis for our research.

Figure 3: Theoretical foundation



Source: own illustration

3.2.1 Resources and capabilities in entrepreneurship

Research on activities in entrepreneurship emphasizes the relevance of RBT to explain how resources can be combined or developed over time to generate an outcome, such as growth or superior firm performance (Barney 1991; Peteraf 1993; Penrose 1959; Amit and Schoemaker 1993). Resources can be defined as either: (tangible or intangible) assets that the organization owns, controls or to which it has access, or organizational capabilities, which enable an organization to perform a coordinated set of tasks using organizational resources to achieve a particular end result (Helfat and Peteraf 2003). Entrepreneurial resources are composed of five diverse resource types, namely: assets, human capital, financial capital, physical capital, and relationship capital (Kellermanns et al. 2016).

While resources are the subject of what the firm owns or to which it has access to, capabilities focus on what the firm does with those resources. These comprise a set of

existing routines and processes (Rumelt 1984; Penrose 1959; Teece 2016). *Dynamic capabilities* have been identified as a major driver for lasting competitive advantage in dynamic environments (Teece, Pisano, and Shuen 1997; Zahra, Petricevic, and Luo 2022; Leemann, Kanbach, and Stubner 2021). Zahra, Sapienza, and Davidsson (2006) define *dynamic capabilities* as being different from (normal) *substantive capabilities*, in that *dynamic capabilities* are those that change or reconfigure existing *substantive capabilities*. In other words, these capabilities enable the firm to change the way it does things. However, the question that arises in the light of new venture creation is: When do these substantive and dynamic capabilities actually come into existence as a new firm emerges? Past research has identified the first associations with entrepreneurship, e.g., entrepreneurial capabilities (Vu 2020) and dynamic entrepreneurial capabilities (Lanza and Passarelli 2014).

We take capabilities into consideration in our own investigation, as the latest research indicates that early-stage activities of entrepreneurs can be a foundation for capabilities to flourish in later stages of the organization (Mueller, Volery, and von Siemens 2012; Kor, Mahoney, and Michael 2007; Zahra 2021). Additionally, entrepreneurial capabilities, such as sensing, selecting, shaping, and synchronizing opportunities have been identified (Birkinshaw 2001; Felin, Zenger, and Tomsik 2009; Bingham, Eisenhardt, and Furr 2007), but lack a detailed explanation of how they occur. For instance, Afzal, Siddiqui, and Dutta (2018) found a positive influence of entrepreneurial capabilities, such as perceived capabilities, fear of failure, and knowledge transfer on innovation performance and new venture performance. Yi, Han, and Cha (Yi, Han, and Cha 2018) explain that entrepreneurship plays a significant role in creating corporate capabilities, e.g., marketing, R&D, operations capability and has a positive effect on dynamic capabilities. Thus, during the firm creation process specifically, these capabilities may be vital. Again, research to date lacks in-depth knowledge of which concrete actions these capabilities can execute and how they interact with different types of internal and external resources. Although capabilities are evident at the firm level, they are executed by individuals (Teece 2012). In examining the firm creation process, we focus on the entrepreneur as ‘the executing individual’ in the remainder of this article.

3.2.2 *Entrepreneurial thinking and acting*

In research studies, the entrepreneur is the core of entrepreneurship. Here, we follow McMullen & Shepherd's (2006) definition, seeing the entrepreneurship as an organizational or economic function performed by an individual. Thus, we do not consider their personality (i.e., innovative, risk-seeking, resilient, etc.) or position (i.e., small business manager, owner, etc.) (Salmony and Kanbach 2022; Salmony, Kanbach, and Stubner 2021). Our definitional foundation is in economics, where the entrepreneur has been traditionally conceptualized in this manner (Casson 1982, 22). It is worth mentioning here that entrepreneurs per se do not exist but are individuals who become entrepreneurs while creating a new venture.

In considering the entrepreneur through the lens of observation, an interplay of three elements forms entrepreneurial thinking and acting: (a) cognitive abilities, (b) behavioral characteristics, (c) and emotional aspect that together form the entrepreneurial mindset (Kuratko, Fisher, and Audretsch 2021). All these elements allow for information processing, reasoning, and decision-making (Read and Sarasvathy 2005; Dew et al. 2009; Baron 2009; Engel et al. 2017). As entrepreneur's cognitive reasoning has been understood to be the main differentiator between "normal" individuals (Kuratko, Fisher, and Audretsch 2021), several concepts have been introduced which connect entrepreneurial thinking and acting. These comprise Causation, Effectuation, and Bricolage (Fisher 2012).

Causation and Effectuation are defined as two opposing approaches to entrepreneurial reasoning and decision-making (Sarasvathy 2001a; Dew et al. 2009). The main difference can be found in "Causational" reasoning that emphasizes the acquisition of the necessary means to achieve desired end states. In contrast, "effectual" logics imply the use of existing means to create yet unknown end states. More recently, the focus has shifted to the effect of their combined application in decision-making processes on firm performance that indicate positive outcomes (Smolka et al. 2018; Laskovaia, Shirokova, and Morris 2017). Experienced entrepreneurs rely on causational approaches, while first-time entrepreneurs often follow effectual approaches when creating a firm (Chandler et al. 2011). In addition, contextual and environmental changes in the market lead

to a shift in entrepreneurial reasoning, as crises generate a higher degree of uncertainty (Khurana, Dutta, and Schenkel 2022). A third dominating concept, Bricolage (Lévi-Strauß 1962), has evolved in entrepreneurship research (Baker and Nelson 2005) asserting that entrepreneurs first start with themselves and their own (resource) situation, before taking action and creating something from what is presently available. Busch and Barkema (2021) recently found that new ventures can employ such approaches to entrepreneurship at scale at later stages of the firm. These approaches are useful to understand the decision-making logic of entrepreneurs in terms of how they approach the creation of new firms, nonetheless, the concepts do not explain what is actually carried out post hoc.

3.2.3 *Entrepreneurial action and behavior*

Besides the understanding entrepreneurial reasoning, it is actions that are ultimately necessary to realize the ideas and opportunities through which new firms are created (Kuratko, Fisher, and Audretsch 2021; Bird and Schjoedt 2009). These actions (the *what*) form entrepreneurial behavior in terms of *how* various activities are carried out by individuals in organizations (Gartner, Carter, and Reynolds 2010). Entrepreneurial action is defined as “a purposeful and consequential human activity, in which entrepreneurs engage to introduce something new to the world” (Wood, Bakker, and Fisher 2021, 148). Bird and Schjoedt point out that:

“the end of all the cognition and motivation of entrepreneurs is to take some action in the world, and by doing so, give rise to a venture, an organization. Thoughts, intentions, motivations, learning, intelligence without action does not create economic value. The very nature of organizing is anchored in actions of individuals as they buy, sell, gather, and deploy resources, work, etc.” (Bird and Schjoedt 2009, 327). Thus, actions clearly go beyond entrepreneurial intentions formed by cognitive processes (van Gelderen et al. 2018).

Despite existing concepts of entrepreneurial action, such as *Creation of opportunities* (Alvarez and Barney 2007), *Bootstrapping* as a technique to overcome shortage of

resources (Grichnik and Singh 2010), the concept of *Entrepreneurial Hustle* emerged recently as an action-oriented construct (Fisher et al. 2020). It describes the entrepreneur's urgent, unorthodox actions that are intended to be useful in addressing immediate challenges and opportunities under conditions of uncertainty. While the construct appears to be valid, it falls short when it focuses specifically on the early stage of venture creation and only abductively connects actions to opportunity recognition, learning, and resource utilization. Another empirical study (Mueller, Volery, and von Siemens 2012) investigated startup entrepreneurs and growth entrepreneurs. By observing 12 individuals in their day-to-day work, the study identified the actions that individuals take in the firm. While growth entrepreneurs spend 77% of their time on exploitation compared to 65% of startup entrepreneurs, the main differences in the actions between these two groups highlight a switch from "doing" to "managing" as the organization develops that includes a bias towards communication with internal partners. The study indicates that startup entrepreneurs spend significantly more time on analytical and conceptual work and on environmental monitoring, while growth entrepreneurs spend the majority of their time on organizational development.

Taking the cognitive components mentioned above and the results of the identified empirical studies into consideration, a question remains about which actions follow which thinking processes and in what timely manner they occur (i.e., sequential, parallel, patterned). Thus, there is a gap in understanding entrepreneurial action and, more specifically, what entrepreneurs do with which resources during venture building, meaning the step towards creating an existing venture.

3.2.4 *Entrepreneurial Resourcefulness*

Entrepreneurial Resourcefulness is an umbrella term describing the creative pursuit of opportunities despite resource limitations (Fisher, Neubert, and Burnell 2021). Having its roots in the psychology and sociology literature (Zauszniewski 2016), Resourcefulness describes how individuals use and control internal resources to manage difficult, stressful, and challenging situations. Adopted by management scholars (Kanungo and Misra 1992; Misra and Kumar 2000), it became established in the entrepreneurship

literature as a concept of action well suited to the uncertain conditions and risky environments in which entrepreneurs operate (Bradley, Shepherd, and Wiklund 2011; Bradley 2015).

Serving as a concept to explain how entrepreneurs behave when acting under resource constraints, the latest research offers conceptual insight into what resourcefulness is and how entrepreneurs deploy it. Reypens, Bacq, and Milanov (2021) found that Resourcefulness manifests in dynamic combinations of resource seeking and *Bricolage*. Williams et al. (2021) develop the concept further, describing resourcefulness as “[...] a (I) boundary-breaking behavior of (II) creatively bringing resources to bear and deploying them (III) to generate and capture new or unexpected sources of value in the process of entrepreneurship.” (Williams et al. 2021, 4). While these descriptions leave room for interpretation about the actions needed to be resourceful, Zahra (2021) combines resourcefulness with the RBT to emphasize that resourcefulness primarily comprises the management of resources. As the studies on entrepreneurial resourcefulness are relatively conceptual, the recent study puts the entrepreneur themselves into focus to examine the impact of subjective preferences and the perception of the external environment on resourcefulness (Michaelis et al. 2022). However, these concepts currently provide only a limited understanding of how entrepreneurs act when being resourceful in creating new ventures.

As the understanding of the type and form of actions that early-stage entrepreneurs take is limited, the aim of this study is to address this gap. As Fisher (2012) stresses, traditional and emerging models must be combined to explain how entrepreneurs behave and perceive the meaning of the diversity and variety of actions when launching new ventures.

3.3 Methodology

We employ an exploratory approach using grounded theory methodology (Strauss & Corbin 1998) to inductively identify and interpret the actions of entrepreneurs in the

early-founding stage of firm creation. Thus, we follow the approach of similar studies in entrepreneurship research (e.g., Fisher et al., 2020; Ko & Liu, 2015, and recommendations to empirically study entrepreneurial behavior (Gartner, Carter, and Reynolds 2010).

3.3.1 Data set

We conducted 112 semi-structured interviews with two groups of entrepreneurs. We sampled the interview partners across two groups: 1) persons who are considering founding a startup or have been working on their idea for a year or less, labeled as Novice Entrepreneurs (NE); and 2) entrepreneurs who have more than three years of entrepreneurial experience and/or have founded multiple companies, labeled as Experienced Entrepreneurs (EE). The sampling strategy follows established research approaches in the field of entrepreneurial cognition and behavior (e.g. Dew et al. 2009; Engel et al. 2017; Mueller, Volery, and von Siemens 2012), taking into account the influencing factor of entrepreneurial experience. The inclusion of experience as a distinctive factor in our data aims to avoid bias in the overall sample because we take a more differentiated perspective. Specifically, we can observe the potential effects of entrepreneurs' experiences on their actions and activities.

The final sample comprises 46 interviews with NE and 66 with EE. We initiated data collection in June 2019 and conducted the last interview in October 2021. All interviews were conducted either in person, via telephone, or via video call in German or English. The recordings were transcribed immediately after the interview and integrated into MAXQDA. Table 1 presents the characteristics of the interview sample.

Table 14: Data set and interview characteristics

Aspect	Novice Entrepreneurs	Experienced Entrepreneurs
Number of inter-views	46	66
Avg. lengths of inter-views (min)	~19 minutes	~26 minutes
Total length of audio records (hours)	~15 hours	~29 hours
Length of transcripts in words	~95.000	~178.000

Source: Own illustration.

3.3.2 Data analysis

We followed Gioia, Corley, and Hamilton's (2012) method to ensure high validity of our research. Building on a three-step approach, 1st-order concepts are identified based on the initial coding. Subsequently, these 1st-order concepts are organized into 2nd-order theory-centric themes. Finally, the 2nd-order themes are distilled into overarching theoretical, aggregated dimensions. This static data structure is then transferred into a grounded theory model, describing the dimensions of entrepreneurial activity and corresponding actions of entrepreneurs in the early stage.

To ensure inter-coder reliability, researchers coded independently all interviews across both groups with MAXQDA. Finally, results were compared, discussed, and consolidated. This iterative process allowed us to generate objective, in-depth findings presented in the next section.

3.4 Results

The presentation of our results provides a holistic overview of how we organized and structured our findings to enrich current theory. After analyzing our data, we are able to identify three dimensions being equal for novice and experienced founders, namely Entrepreneurial Alignment (EA), Resource Enhancement (RE), and Value Generation

(VG). Each dimension includes a subset of 27 activities in total for both groups. All 27 activities find their expression in 67 actions. The following sub-sections present our findings, together with the three equally identified dimensions for NE and EE.

3.4.1 Dimension I: Entrepreneurial Alignment

Entrepreneurial Alignment (EA) puts the founder themselves at the center of the action. The data refer to actions strongly relating to the founder and their attitudes, postures, mindsets, etc. We could identify five actions in total in each group of entrepreneurs. Table 2 (NE) and Table 3 (EE) summarize our analysis using the Gioia method for Dimension I (EA). Four out of the five activities in the first dimension are found in both groups, specifically *Reflecting*, *Envisioning*, *Requesting*, and *Recognizing*. Both NE and EE exhibit these activities but perform them differently, which becomes clear with the following executions. When NE *Reflect*, this activity is characterized by critical reflection, the evaluation of alternatives, and consideration of how to handle pitfalls. EE, in contrast, evaluate intellectually, think critically, and access incentives for self-development when they *Reflect*. *Envisioning* finds different specifications in both groups. NE *Envisioning* is characterized by the actions of dreaming to make an impact, having the ambition to be successful, and being overconfident. EE create a vision, gain motivation, and find a purpose and clarity while they are *Envisioning*. The third activity, *Requesting*, is also executed differently within the two groups of entrepreneurs. For NE, *Requesting* means seeking and postulating contextual support, searching for a co-founder and team members, and demanding tangible and intangible assets. For EE, *Requesting* considers the analysis of the situation and the incorporation of external feedback. Hence, *Requesting* puts more emphasis on asking the right questions and receiving feedback than demanding assets and input (as is the case for NE). Lastly, the activity, *Recognizing*, is found within both groups. For NE, using creative (business) methodologies to process information and create clarity and understanding of the problem are primary expressions when *Recognizing*. The actions of EE differ slightly when they *Recognize* as they process information, recognize opportunities, and define the features of their ideas.

In addition to the four activities that are similar for both NE and EE but differ in the particularity of their actions, we could identify one activity that was exclusive for each group. Specifically, NE dispose over the activity *Educating*, which can be described as the actions of consciously selecting education formats, participating in courses and workshops, and acquiring knowledge. As their fifth activity, EE have *Risking*, which underlines the founder's exposure to risk and engagement in critical thinking.

Table 15: Dimension I: Entrepreneurial Alignment – Novice Entrepreneurs

1 st -level Concepts	2 nd -order Themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Critical reflection of team composition based on commitment issues, time boundaries, and lacking competencies to develop the respective business idea ▪ Critical reflection on the complexity of the business idea and the resulting challenges and possible pitfalls ▪ Reflection on the liability and anticipation of planned product and services (e.g., critical mass required, niche market, high initial investment) 	Reflecting critically	Reflecting
<ul style="list-style-type: none"> ▪ Reflection on competitive forces that use the business idea as copy-cat ▪ Evaluation of personal alternatives (e.g., began first in consulting and found the business later) 	Evaluating alternatives	
<ul style="list-style-type: none"> ▪ Reflection on personal and business-related consequences of the entrepreneurial journey (e.g., failure, loss of money) ▪ Reflection of business progress to identify pain-points and facilitate learning for the further entrepreneurial journey 	Reflecting to deal with pitfalls	
<ul style="list-style-type: none"> ▪ Ambitious vision of the founder to make an impact and change the "world" ▪ Ambition to develop a great and unique product or service that is highly anticipated by users 	Dreaming to make an impact / change	Envisioning
<ul style="list-style-type: none"> ▪ Become successful very fast and grow very fast ▪ Ready for failure (scale fast or fail) ▪ Bringing an inherited entrepreneurial mindset to life 	Having the ambition to be successful	
<ul style="list-style-type: none"> ▪ Convinced by own idea and overconfident about customer and user anticipation of the business idea ▪ Thinking they can develop the business idea very fast on their own 	Being overconfident	
<ul style="list-style-type: none"> ▪ Requesting access to relevant data and information that are related to either the product development, supportive institutions and venture capitalists (VC), or investors ▪ Need for guidance and mentorship during the entrepreneurial journey (e.g., experienced coach, subject-matter experts, investors, business angel) ▪ Need for financial investments to gain traction for development of the respective business idea (high initial investment needed) ▪ Need for contextual support to solve specific business issues, mainly legal, tax, or IT ▪ Seeking financial support through investors, VCs, business angels, public grants 	Seeking and postulating contextual support	Requesting
<ul style="list-style-type: none"> ▪ Actively seeking appropriate co-founders who compensate for lack of skills of existing founders ▪ Postulation towards supportive institutions to facilitate and enable co-founder matchmaking 	Searching for co-founder(s) /team member(s)	
<ul style="list-style-type: none"> ▪ Active postulation for the requisite infrastructure to develop the business idea (ideally provided by supportive institutions) ▪ Requesting access to space, tools, and equipment ▪ Requesting to be provided with software and methodological competencies 	Demanding tangible and intangible assets	
<ul style="list-style-type: none"> ▪ Brainstorming ▪ Creative thinking about the extent to which the team can realize the idea with existing resources ▪ Inspiration from educational formats, trends, podcasts, or crises that facilitate timing 	Using creative (business) methodologies to process information	Recognizing
<ul style="list-style-type: none"> ▪ Problem understanding as a basis on which to develop the solution ▪ Hypotheses-based working as an appropriate approach to identify problems that the business idea aims to solve 	Creating clarity and understanding the problem	
<ul style="list-style-type: none"> ▪ Selection of graduate study programs with a strong focus on entrepreneurial learning and mindset ▪ Gaining relevant qualifications that help to develop the respective venture ▪ Listening to podcasts, YouTube videos, or reading relevant literature 	Consciously selecting educational formats	Educating
<ul style="list-style-type: none"> ▪ Participating in creative workshop formats to foster entrepreneurial thinking and venture building ▪ Participation in online courses to gain relevant competencies 	Participating in courses and workshops	

Beyond Concepts: Uncovering Entrepreneurial Activities in Early-stage Venture Creation

<ul style="list-style-type: none">▪ Acquiring contextual knowledge such as E-Commerce, Data Analytics, etc.▪ Acquiring methodological knowledge▪ Intrinsic motivation of founders to deal with actual trends in entrepreneurship and the topical focus of the research idea	Acquiring knowledge	
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Source: Own illustration.

Table 16: Dimension I: Entrepreneurial Alignment – Experienced Entrepreneurs

1 st -level Concepts	2 nd -order Themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Intellectual evaluation after a specific situation or after performing an action ▪ Comprises the field of learning which arises after the assessment of the situation ▪ Potentially, trigger for new behavior/action 	Evaluating intellectually	Reflecting
<ul style="list-style-type: none"> ▪ Reflecting in the sense of critical (subjective) assessment or reflecting in the sense of neutral objective) 	Thinking critically	
<ul style="list-style-type: none"> ▪ In some cases, being strict with oneself or being critical of oneself (basis for self-development) ▪ Potentially, trigger for new behavior/action 	Assessing incentives for self-development	
<ul style="list-style-type: none"> ▪ Founder themselves has a strong vision ▪ Founder actively combines input of environment and personal thoughts 	Creating a vision	Envisioning
<ul style="list-style-type: none"> ▪ Founder themselves follows a strong, intrinsic motivation ▪ Founder themselves has a clear purpose in mind and actions are aligned with this purpose 	Gaining motivation	
<ul style="list-style-type: none"> ▪ Founder themselves has a clear purpose in mind and actions are aligned with this purpose 	Finding purpose	
<ul style="list-style-type: none"> ▪ Analyzing the status quo can involve assessment of the strengths and weaknesses of the founder, the team, and/or idea ▪ Thinking analytically about the current situation ▪ In-depth mental exchange of current situation 	Analyzing the situation	Requesting
<ul style="list-style-type: none"> ▪ Reaching out to external parties to integrate their feedback and input ▪ Consciousness of the necessity to be challenged by external parties ▪ Asking external parties important and relevant questions ▪ Being aware of being wrong, constant consciousness that own assumptions can be wrong 	Implementing outside feedback	
<ul style="list-style-type: none"> ▪ Actively perceiving and analyzing the environment ▪ Processing the gathered information ▪ After this process, opportunity recognition takes place 	Processing information	
<ul style="list-style-type: none"> ▪ If necessary, the founder is able to change own perspective to consider problems from different angles ▪ The consequence of the process is that opportunity recognition takes place 	Recognizing opportunities	Recognizing
<ul style="list-style-type: none"> ▪ Derivation and determination of important aspects and factors for the idea (after perceiving and analyzing the environment) 	Deriving factors for the idea	
<ul style="list-style-type: none"> ▪ Founder themselves inhere a certain degree of risk affinity ▪ Consciousness that founder needs to put themselves in position of uncertainty to reach goal 	Exposing towards risks	Risking

Source: Own illustration.

3.4.2 Dimension II: Resource Enhancement

Resource Enhancement (RE) comprises activities involving the use and allocation of resources through the founder. In comparison to Dimension I, the interplay of resources and the founder themselves comes to the fore. In addition, the data stress a stronger difference between the two groups since they share only one common activity (*Deciding*). The other activities for NE are distinct (*Limiting, Collaborating, Exchanging*) and EE (*Concentrating, Improvising, Combining, Transferring*). Tables 4 and 5 consolidate the respective activities and actions of the two groups.

Deciding has been identified in both groups; however, the actions describing this activity vary slightly for NE and EE. When *Deciding*, NE base their decisions on existing resources; they commit themselves to the idea of development and embrace the awareness and encouragement of failure. EE, in contrast, understand *Deciding* more as an activity for setting awareness and making conscious decisions in all contexts. Consequently, EE recognize the general importance of *Deciding*, whereas NE consider this importance only in particular contexts.

For NE, several actions form the activity, *Limiting*. Here, NE tend to allocate resources pragmatically, to execute tasks themselves, and to reduce personal risk(s). For NE, *Limiting* is a universal approach for a resource-scarce environment since the activity is characterized by restrictions and reductions. The activity, *Collaborating*, implies the dependence on third parties by building partnerships with external parties, outsourcing tasks, and participating in startup assistance programs. The fourth activity in the second dimension, aggregated as *Exchanging*, enhances predominantly two types of resources, specifically network and knowledge. While *Exchanging*, NE disseminate knowledge and exchange with others formally and informally.

In addition to *Deciding* as a common activity for both groups, EE dispose over four further activities in the second dimension: *Concentrating*, *Improvising*, *Combining*, and *Transferring*. The activity, *Concentrating*, includes the actions of setting focus and aligning efforts and prioritizing goals. This activity aims to bring structure to an unorganized system. A further, executed activity, summarized as *Improvise*, is characterized by the actions: creating something with existing resources, developing quick-fixes, and reacting spontaneously. *Combining*, identified as a central activity of EE, covers the integration of various resources (e.g., team, knowledge, finance, networks) rather than specific resources.

Specifically, EE allocate resources, bundle resources, and try to overcome resource scarcity while *Combining*. Lastly, we identified the activity, *Transferring*, while formed through actions to integrate learnings into operations and developing capabilities. This

activity positions the transfer of resources at the center and provides first indications of how the founder uses and allocates the resources to generate value accordingly.

Table 17: Dimension II: Resource Enhancement – Novice Entrepreneurs

1 st -level Concepts	2 nd -order Themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Active and deliberate decisions based on existing resources (e.g., go-to-market) ▪ Evaluation of alternatives resulting in full commitment of the team to develop the business idea ▪ Limiting the commitment if progress does not meet the founder's expectations and the preset milestones 	Making decisions based on existing resources	Deciding
<ul style="list-style-type: none"> ▪ Full team commitment to develop and scale the idea ▪ Formal/informal agreement of the founder to show full commitment 	Committing to idea development	
<ul style="list-style-type: none"> ▪ Establishment of the surrounding cultural conditions to foster internal commitment, motivation, and passion regarding the idea ▪ Failure of the venture and progress is encouraged. If the commitment does not bear the desired outcome, the founder has at least the learning 	Embracing awareness and encouragement from failure	
<ul style="list-style-type: none"> ▪ Pragmatism in progress. Saving resources in tools by using alternatives ▪ Limited financial resources reduce progress of the respective idea 	Allocating resources pragmatically	Limiting
<ul style="list-style-type: none"> ▪ Making preferred rather than buying ▪ Resistance to pay external partners for contextual support due to the understanding that they can acquire the knowledge on their own ▪ Prioritization and deliberation of next steps and working packages owing to limited resources 	Preferring to execute tasks on their own	
<ul style="list-style-type: none"> ▪ Limiting resource and commitment allocation to avoid significant impacts of failure ▪ Keeping running costs at a minimum to hedge the risk of failure 	Reducing personal risk(s)	
<ul style="list-style-type: none"> ▪ Collaboration with financial institutions to scale the business idea rapidly ▪ Collaboration with subject-matter experts who support the development and validation of the business idea and provide access to relevant networks and communities ▪ Collaboration with potential customers as focus groups to receive feedback and validate the business idea 	Building partnership with external parties	Collaborating
<ul style="list-style-type: none"> ▪ Outsourcing specific business development steps to family and friends who have experience in a specific focus area (e.g., legal) ▪ Collaboration as a mechanism to accelerate product development by outsourcing specific tasks owing to lack of internal competencies 	Outsourcing tasks	
<ul style="list-style-type: none"> ▪ Collaboration with supportive organizations, such as incubators, to have a structured methodological approach to develop the business idea ▪ Participation in supportive startup programs for guidance, exchange, and access to relevant resources 	Participating in startup assistance programs	
<ul style="list-style-type: none"> ▪ Active knowledge and experience dissemination with founder in the same phase to foster exchange and mutual learning ▪ Exchange with complementary individuals who bring a new perspective to the idea ▪ Approaching experienced entrepreneurs (best practices, project management, learnings, pitfalls) for guidance and an entrepreneurship blueprint 	Disseminating knowledge	Exchanging
<ul style="list-style-type: none"> ▪ Interactive and continuous exchange with mentors and advisors to validate, develop, and scale the business idea ▪ Contextual exchange with individuals in the founder's network (e.g., subject-matter experts, VCs, academia) ▪ Informal events for exchange in an inspiring and constructive atmosphere ▪ Exchange as a crucial step to identify potential problems and get to know problem-solving approaches 	Having formal and informal exchanges	
<ul style="list-style-type: none"> ▪ Active engagement in networks to present the idea, receive feedback, and identify potential partners ▪ Development of individual expert and founder networks 	Building a network	

Source: Own illustration.

Table 18: Dimension II: Resource Enhancement – Experienced Entrepreneurs

1 st -level Concepts	2 nd -order Themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Underlining the importance of deciding, as no decision is considered as stagnation, procrastination, ... ▪ Awareness that deciding can also imply wrong decision; accepting this scenario as making wrong decisions/failure is part of the process and creates learnings 	Setting awareness	Deciding
<ul style="list-style-type: none"> ▪ Actively making a decision because founder is for/against something ▪ Conscious choice of one option out of a set of option; if there is just one option, decision in favor of this option instead of not deciding 	Making decision consciously	
<ul style="list-style-type: none"> ▪ Setting the focus on a specific resource or aspect ▪ Concentration on one specific aspect/resource as it is considered the most important one at this moment ▪ Involves the awareness that the essentials are clear ▪ Consciously focusing on one aspect/resource to create structure (not because everything is too overwhelming) 	Setting focus	Concentrating
<ul style="list-style-type: none"> ▪ Concentrating can be considered in the sense of “bundling” ▪ Conscious focus, not concentrating because everything is a struggle ▪ Concentrating in the sense of bundling 	Aligning efforts and prioritizing goals	
<ul style="list-style-type: none"> ▪ Creation of something out of nothing (closely related to bricolage) ▪ Use means for different ends ▪ Resources are misused to deploy 	Creating with existing resources	Improvising
<ul style="list-style-type: none"> ▪ Using creativity to solve problems and difficult situations ▪ Solution-oriented behavior? 	Developing quick fixes	
<ul style="list-style-type: none"> ▪ Actions are characterized by a certain degree of spontaneity 	Reacting spontaneously	
<ul style="list-style-type: none"> ▪ Resources are allocated by the founder ▪ Resources are deployed by the founder 	Allocating resources	Combining
<ul style="list-style-type: none"> ▪ Connection of means/resources to make them useful, valuable, beneficial ▪ Combining resources in a way to create/develop resources not available at the moment 	Bundling resources	
<ul style="list-style-type: none"> ▪ Action with the goal of solving or minimizing scarcity of resources ▪ Combining, mixing, and allocating resources to overcome a resource-constrained environment 	Overcoming resource scarcity	
<ul style="list-style-type: none"> ▪ Convey different types of resources ▪ When transferring resources, value transmission may take place ▪ Transferring theoretical into practical knowledge particularly 	Integrating learnings into operation	Transferring
<ul style="list-style-type: none"> ▪ Coming from abstract level to concrete level, especially in realizing the idea ▪ Ability to transfer resources while recognizing their combined potential 	Developing capabilities	

Source: Own illustration.

3.4.2.1 Dimension III: Value Generation

Value Generation (VG) comprises activities of NE and EE emphasizing the potential outcomes of their resource allocation. Consequently, this dimension includes activities that drive initial value creation at the individual and venture level. Differences across the groups were evident on this dimension as only one activity, *Developing*, is similar for both groups. NE execute *three* activities (*Developing*, *Committing*, *Validating*), while EE execute *five* activities (*Developing*, *Adjusting*, *Optimizing*, *Iterating*, *Growing*) as presented in Tables 6 and 7.

Developing, the activity found in both groups, comprises different actions for NE and EE. When *Developing*, NE complete sequential working packages and work on the initial product “in the backyard”. EE put more emphasis on fast improvement and advancement of an object when they *Develop*, which is partially open to partners and customers. They improve, advance, and/or build on what exists.

In analyzing NE, *Committing*, is formed by actions such as managing the project, aligning all team members, and orienting towards goals. *Validating* deals with the actions of getting feedback and testing and validating the business idea. EE, however, dispose over a more diverse set of activities and corresponding actions in this dimension. In addition to the joint action, *Developing*, we identified four activities, namely *Adjusting*, *Optimizing*, *Iterating*, and *Growing* respectively. *Adjusting* refers to the actions of re-creating the existing, fine-tuning, and updating constantly from the status quo. While *Optimizing*, EE try to become more (capital) efficient and solution-oriented in work. *Iterating* demonstrates the importance of general goal achievement; therefore, entrepreneurs constantly try to test and realize new inputs and ideas. *Growing* entails the actions of identifying and creating synergies, increasing capacity, and generating more output.

Table 19: Dimension III: Value Generation – Novice Entrepreneurs

1 st -level Concepts	2 nd order themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Completion of specific milestones in the product development process (e.g., launch of website, business plan) ▪ Incremental completion of work packages 	Sequentially completing working packages	Developing
<ul style="list-style-type: none"> ▪ Development of (rapid) prototypes to receive fast feedback on the idea and to understand which problems will be tackled ▪ Development of Minimum Viable Product (MVP) 	Developing the initial product	
<ul style="list-style-type: none"> ▪ Structured project management to achieve timely preset milestones ▪ Setting up the project management structure (e.g., communication channels, meeting frequencies) 	Managing the project	Committing
<ul style="list-style-type: none"> ▪ Intrinsic motivation of the founders to develop and scale the respective business idea ▪ Surrounding cultural conditions to enable project management completion 	Aligning all team members	
<ul style="list-style-type: none"> ▪ Definition of KPIs to track project management and progress ▪ Definition of dead-ends if the milestones and KPIs are not achieved 	Orienting towards goals	
<ul style="list-style-type: none"> ▪ Professional feedback from investors, VCs, and subject-matter experts ▪ Feedback to broaden the horizon and to reflect on the idea from different perspectives ▪ Critical feedback is expected ▪ Bird's eye view of the project from experienced people ▪ Collaboration with challengers who provide continual and thorough feedback 	Getting feedback	Validating
<ul style="list-style-type: none"> ▪ Reality check of the business idea ▪ Validation of the initial hypotheses and the relevance of the underlying problem/customer need ▪ Testing the product with selected individuals or focus groups ▪ Validating targeted markets ▪ Understanding the value proposition that the product generates to the customers ▪ Exploration of monetization opportunities 	Testing and validating the business idea	

Source: Own illustration.

Table 20: Dimension: Value Generation – Experienced Entrepreneurs

1 st -level Concepts	2 nd -order Themes	Aggregate Dimension
<ul style="list-style-type: none"> ▪ Build on what already exists ▪ Advancement and further development of existent (e.g., team, product, knowledge, ...) 	Improving and advancing	Developing
<ul style="list-style-type: none"> ▪ Making use of existing ▪ Actions to extent and expand specific resource(s) 	Building on the existing	
<ul style="list-style-type: none"> ▪ Calibration and configuration of status quo, idea, resources, postures, ... ▪ Conviction that change creates value ▪ Implying and realizing agile working methods 	Re-creating the existing	Adjusting
<ul style="list-style-type: none"> ▪ Calibration and configuration of status quo, idea, resources, postures, ... ▪ Minor changes 	Fine-tuning	
<ul style="list-style-type: none"> ▪ Importance of constantly adapting the status quo, not considering aspects as fixed and static ▪ Not being persistent with status quo 	Constantly updating status quo	
<ul style="list-style-type: none"> ▪ Involved team members are efficient and effective ▪ Especially using capital in most efficiently ▪ Conscious use of resources to create the best output given what is at hand 	Becoming more efficient	Optimizing
<ul style="list-style-type: none"> ▪ Strong focus on outcome (output-orientation) ▪ Involved team members work with provisional, temporary solution (solution-oriented behavior) ▪ Not striving for the perfect solution but rather focusing on generating output 	Solution-oriented work	
<ul style="list-style-type: none"> ▪ Rebuilding processes or actions to get better and to reach a better outcome ▪ Rerun actions to generate output 	Constantly trying and testing	Iterating
<ul style="list-style-type: none"> ▪ Build-measure-learn approach and every iteration of action creates learnings ▪ Partly cyclical repetitions with the aim to advance ▪ Realizing and implementing feedback (especially of the product) 	Realizing new inputs and updates	
<ul style="list-style-type: none"> ▪ Discover first synergies and make use of them ▪ Awareness that the realization of the idea comes with growth 	Identifying and creating synergies	Growing
<ul style="list-style-type: none"> ▪ Building capacity to grow ▪ Behaviors are characterized with the aim of growth (building team, collecting/generating more capital, etc.) 	Increasing capacities/generating more output	

Source: Own illustration.

In summary, we developed a theoretical construct of 27 activities related to 67 actions embedded in the three dimensions. We determined differences between the two groups, even though several activities were identified in both NE and EE groups, which differed on particular actions and how they are carried out. Based on these results, we are able to outline a holistic picture of the activities and actions entrepreneurs perform in early-stage venture creation.

A comprehensive overview, including definitions for each of the 27 activities, is presented in Table 8. The differences between NE and EE activities become evident and are underlined in the distinguishing definitions. Therefore, we have achieved integration

of our practical findings at the conceptual level of comparative research studies (de Clercq and Voronov 2009; Gross, Carson, and Jones 2014).

Table 21: Dimensions and Activities of Novice and Experienced Entrepreneurs

Novice Entrepreneurs	Experienced Entrepreneurs
Dimension 1: Entrepreneurial Alignment	
<p>Reflecting Critical examination of the business idea and project management to avoid common and repetitive entrepreneurial pitfalls</p> <p>Envisioning Enthusiastic and abstract ideology to create something meaningful and unique that will have a lasting impact</p> <p>Requesting Concrete postulation of external support to further develop the business idea</p> <p>Recognizing Interactive accumulation and formation of ideas from scratch through use of creative thinking methodologies</p> <p>Educating Founder's intention to acquire the necessary competencies, knowledge, and skills to develop the business idea</p>	<p>Reflecting Critical examination of the environment to achieve unbiased postures/attitudes</p> <p>Envisioning Cogitating on thoughts around purpose and vision of the respective ideas which are driven by the founder's personal (intrinsic) motivation</p> <p>Requesting Aiming to receive outside feedback to constantly challenge the status quo and own postures regarding the business</p> <p>Recognizing Processing of information regarding the idea and environment to determine opportunities and to create options</p> <p>Risking Active exposure to situations, implying uncertainty to take affordable losses and high returns</p>
Dimension 2: Resource Enhancement	
<p>Deciding Fully committed to work on the business idea or to discontinue idea development if the commitment does not produce the desired outcome</p> <p>Limiting Being restricted in resource allocation to operate in a resource-scarce environment</p> <p>Collaborating Interacting with external parties to overcome deficiency of resources</p> <p>Exchanging Dissemination of knowledge and experience with external parties to generate learnings and, in turn, to accelerate the business idea</p>	<p>Deciding Conscious decision-making while choosing a concrete option and consequently moving in a definite direction</p> <p>Concentrating Intentionally setting a focus of action with clear understanding of the essential steps to operate effectively in an uncertain environment</p> <p>Improvising Solution-oriented behavior characterized by creativity to repurpose resources to counter problems and overcome a lack of resources</p> <p>Combining Allocating and deploying resources for use interconnectedly to overcome scarcity</p> <p>Transferring Ability to move resources from an abstract to a concrete level by adequately applying them</p>
Dimension 3: Value Generation	
<p>Developing Interactive and incremental progress of the business idea with the support of external parties</p> <p>Committing Predefining milestones and work packages to follow a structured and sequential project roadmap</p> <p>Validating Ambition to generate and integrate feedback from external parties to improve the business idea</p>	<p>Developing Extensive expansion and strengthening of existing resources to achieve returns</p> <p>Adjusting Consequent calibration of activities and posture to remain unbiased and flexible</p> <p>Optimizing Efficient and effective use of resources characterized by a high level of outcome orientation</p> <p>Iterating Repeating and rebuilding similar actions for continuous improvement for convergence of valued options</p> <p>Growing Expanding business activities and discovering synergies to access and uncover potential while remaining efficient</p>
Source: Own illustration.	

3.5 Discussion

The purpose of this study was to delineate and to precisely express the concrete actions and activities that entrepreneurs perform in early-stage venture creation. Our study results provide a deeper understanding of the underlying activities of individuals when creating new ventures in the early stage. We have addressed the research question by providing an in-depth understanding of the entrepreneurial actions and activities during early-stage venture creation. In the following section, we contextualize our results within the adjacent academic discussion by contrasting and connecting our findings with the theoretical underpinnings.

In essence, our findings reveal different entrepreneurial activities of NE and EE groups. In accordance with the data, every entrepreneurial activity is composed of different action sets that vary between the two experience levels of entrepreneurs. We identified 27 different activities clustered in three dimensions, namely: Entrepreneurial Alignment (*EA*), *Resource Enhancement (RE)*, and *Value Generation (VG)*.

3.5.1 Overcoming resource constraints

Our findings reveal the strategies entrepreneurs use to manage a lack of resources. Here, *Bootstrapping* is used by both groups as a technique to overcome resource scarcity (Grichnik and Singh 2010). Through *Improvising*, *Combining*, and *Concentrating*, EE use the resources at hand to interconnect and repurpose them to operate efficiently and goal-oriented. In uncertain and challenging environments, EE use focused but improvised “good enough” solutions to iteratively improve creatively. In contrast, NE use strategies of *Limiting*, *Exchanging*, and *Collaborating* to manage resource scarcity. Here, NE restrain the allocation of resources to minimize potential losses or failure, or they interact with partners and experts to overcome resource deficiencies, such as limited capacity or knowledge gaps. This indicates that EE use existing resources independently and improvise, whereas NE rely on external stakeholders to compensate for internal resource restraints, a strategy that prior studies support (Fisher et al. 2020). As EE creatively repurpose and transform internal resources to build a “good-enough” solution, NE aim to achieve the necessary quantity and quality of resources to build their

“optimal” solution. In this case, the behavior of EE can be related to the theoretical concept of entrepreneurial bricolage described as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker and Nelson 2005, 333). This is evident in EE activities of *Improvising*, *Combining*, and *Transferring* that enriches the understanding of the dynamic combination of resource seeking and Bricolage (Reyvens, Bacq, and Milanov 2021).

While our study adds new actions to the field of entrepreneurship research, we identify connections with the construct of Entrepreneurial Resourcefulness. Zahra (2021) pointed out that entrepreneurs have to create or develop resources by “[...] recombining existing resources in novel ways using innovative and proprietary processes” (Zahra 2021, 8). The dimensions of EA and RE reveal, in particular, that entrepreneurs carry out activities such as *Reflecting* and *Requesting* (EA) or *Concentrating* and *Improvising* (RE) when building new resources from scratch, intending to transform individual resources into organizational ones. Hence, entrepreneurs find ways to repurpose internal or external resources to create new versions for emerging ventures. Of note is that the ability to *repurpose*, *combine*, and *transform* resources is evident only with EE, indicating the effect of learning and experience. Overall, our study reveals that NE aim to develop a solid resource base to approach problems of internal resource scarcity. In contrast, EE use the resources at hand and repurpose them to develop an adequate solution.

Scholars have identified how *Resourceful Narratives* help entrepreneurs to mobilize support from external stakeholders (Fisher, Neubert, and Burnell 2021). Activities identified in this study, e.g., *Improvising*, *Combining*, and *Transferring*, are the activities of EE that can potentially be used to construct these narratives to convince stakeholders of their value. Also of note is that the use of narratives was not only mentioned when generating value through *Optimizing*, but also while *Requesting* feedback from outsiders during EA. Conversely, NE pursue activities of *Requesting* in the first dimension, *Exchanging*, *Educating*, and *Collaborating* in the second, and *Validating* in the third. As EE are in a more precise and goal-oriented mode to support mobilization, NE are in a more challenge-oriented activity mode to compensate for lack of resources, capacities and capabilities.

3.5.2 *Opportunity realization and goal orientation*

The different ways in which entrepreneurs identify and set goals and the resulting actions can be identified. The analysis shows that the goal-setting orientation of NE is inward-driven and related to internal challenges associated with resource constraints. NE follow problem-focused goal setting to build the resource base necessary to craft a solution. In contrast, EE are outward-driven and pragmatic using resources at hand to achieve goals with “good enough” solutions for the problems at hand. Hence, EE have a stronger motivation to build solutions with the existing resources and rapidly internalize feedback from the outside. The goal orientation towards problems or solutions can be related to similar concepts in entrepreneurship research. With the focus and reasoning oriented towards internal problems and challenges, NE follow a more causal decision-logic, while *Recognizing* needs and then *Educating* for missing knowledge or *Developing* a defined solution sequentially. Hence, they aim to build the right quantity and quality of means to achieve a pre-set and desired end state. Conversely, and in line with Ruiz-Jiménez et al. (2021), EE follow a combination of effectual and causal logic, allowing them to use the means at hand to progress towards a flexible end-state when *Envisioning* and *Recognizing* (EA), *Deciding* and *Combining* (RE), and *Adjusting* and *Iterating* (VG). This is consistent with findings from other research studies that explore the impact of entrepreneurial experience on entrepreneurial reasoning (Fisher 2012; Sarasvathy 2001b; Dew et al. 2009) and add tangible activities to these different modes of action.

The diverse approaches in entrepreneurial reasoning, and the inward and outward goal-setting of EE and NE, reveal diverse approaches in entrepreneurial thinking and opportunity recognition. While NE focus on the internal resource scarcity (Limiting and Requesting) and less on the surrounding environment, it is difficult for NE to identify and create opportunities for their defined and desired solution. Hence, EE perceive resource constraints as an opportunity to build a solution while constantly Adjusting and Optimizing to flexibly adapt the solution to generate value early on.

3.5.3 Entrepreneurial progression

The identified activities reveal that the processual aspect (*what is done when*) differs between NE and EE. NE follow a sequential, unconnected, and perfectionist-driven process, whereas EE follow a parallel, interconnected, and imperfection-driven iterative process across the three dimensions.

For EA, it becomes clear that NE, while *Envisioning through Dreaming and Becoming Overconfident*, define the aim of developing a purpose-driven and impact-oriented venture with the potential to change the world. Nevertheless, NE focus more on challenges than on opportunities. NE express their risk-aversion and fear of failure and are aware of the resource-deficiencies. Based on the EA of NE, the activities can be described as passive and challenge-focused. NE lack the means to accelerate the development of the business idea as they focus on resources and competencies that they lack. Hence, they are aware of the absence of resources and perceive this as an obstacle, believing they are unable to manage on their own. In contrast, EE have a strong and active focus towards the solution by *Developing, Optimizing, and Growing*, and they instantly transfer and repurpose the resources at hand to develop an imperfect solution. They are outward-oriented, as far as internalizing external feedback is concerned, to constantly and incrementally developing and improving the identified solution.

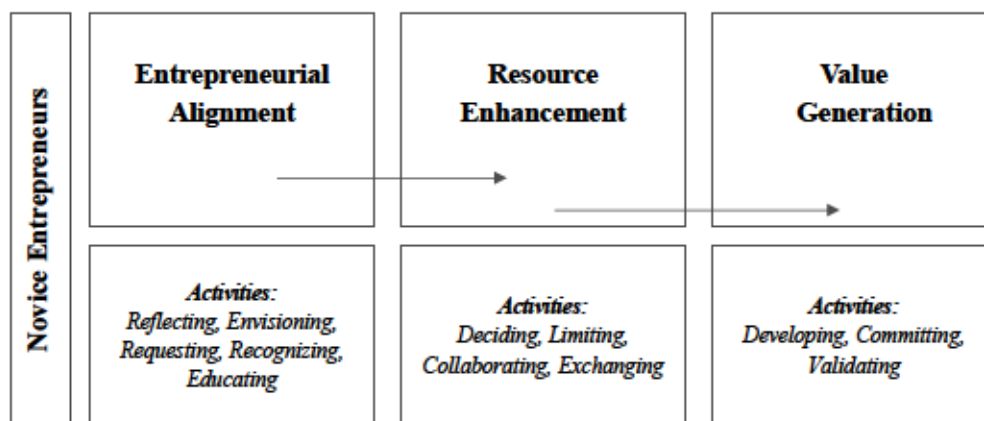
Due to resource scarcity and the strong challenge focus, NE in the RE dimension rely heavily on external partners for support. They approach partners and experts to provide them with contextual support and experience to overcome internal challenges. Hence, NE actively aim to build their ideal resource base towards the identified solution. However, they do not fully enter an action mode towards the solution as their focus is on challenges. Conversely, EE are fully aware of the resources at hand, and they succeed in *Combining, Transferring, and Repurposing* existing resources autarkically towards solutions.

In the VG dimension, NE shape their activities and actions towards the solution. Hence, they first develop prototypes, receive external feedback, and set up a clear project management structure with milestones. In contrast, EE try to scale and grow their offerings by improving the solution and expanding capacity. The value generation for EE is

characterized by an iterative and dynamic adaptation to the existing solution with new and valuable input.

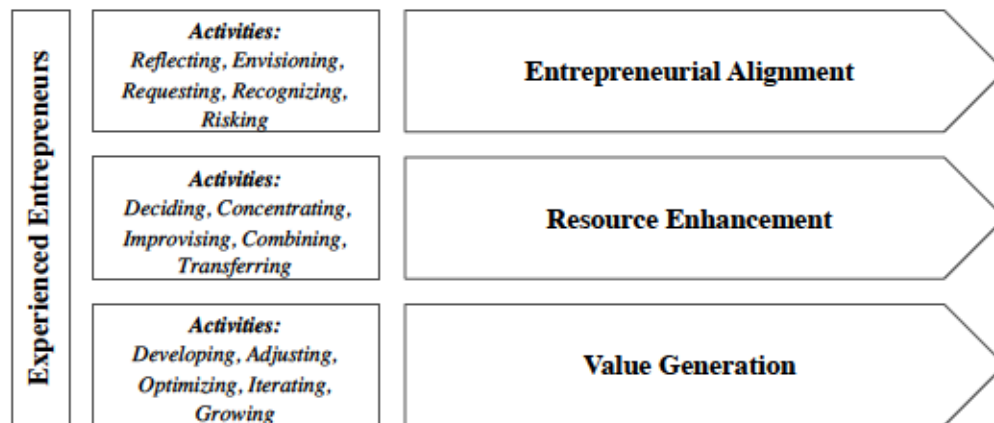
In conclusion, the processual structure portrays essential differences between NE and EE. Overall, as portrayed in Figure 2 below, NE follow a sequential and barely connected processual structure. The data reveal that NE do not succeed in interconnecting and integrating different activities across the three dimensions. Reasons for this are multiple, as they have a strong orientation to the challenges and to causal reasoning. In contrast, as delineated in Figure 3 below, EE succeed in running activities simultaneously and looking for interdependencies across the different dimensions. EE iteratively and cyclically align and adjust activities based on the existing resources. Thus, EE have a stronger focus on executing entrepreneurship as they have a strong solution-focus to generate value. This becomes evident in the number of activities in the VG dimension and strong progressive action. In contrast, NE have a stronger focus on contextual and managerial learning and personal reflection to facilitate EA and RE which corresponds to the findings of Reuber & Fisher (1992).

Figure 4. Entrepreneurial Progression of Novice Entrepreneurs



Source: Own illustration.

Figure 5. Entrepreneurial Progression of Experienced Entrepreneurs



Source: Own illustration.

3.5.4 Building initial and dynamic capabilities

As entrepreneurs execute these actions, they potentially build capabilities for the new organization (Zahra, Sapienza, and Davidsson 2006; Teece 2012). Firstly, resources are (re-) allocated through Concentrating but are also used in new configurations through Combining, showing how resource management processes are initiated (Zahra 2021). Secondly, Requesting, Exchanging, and Transferring indicate how knowledge management routines (Bettioli, Marchi, and Maria 2015) are initiated by the integration and dissemination of internal and external knowledge, specifically acquisition and self-learning through iterative action-evaluation-learn cycles. Thirdly, activities can be associated with dynamic capabilities (Teece, Pisano, and Shuen 1997), such as sensing, through Envisioning and Recognizing, and seizing, through Combining, Transferring, and Improvising. EE, in particular, act in parallel by sensing and seizing to solve problems creatively by realizing smaller opportunities in their surroundings. Furthermore, activities, such as Combining, Iterating, Optimizing, were reported to reoccur frequently, which indicates that first routines and then processes are already established in early-stage venture creation.

3.6 Implications to research and practice

Our results indicate that NE and EE have similar actions in EA but differ in their execution. For RE and VG, it becomes clear that the actions taken differ diametrically between novice and expert entrepreneurs. In accordance with these findings, the observation of entrepreneurial actions and behavioral characteristics outline a common baseline for EA, but a different action set for RE and VG.

With the increasing body of entrepreneurship research, it is equally important to derive an in-depth understanding of the purpose and meaning of how entrepreneurs act and behave in a resource-scarce environment. First attempts to understand entrepreneurship as a practice provide a better understanding of entrepreneurial action and behavior (Thompson, Verduijn, and Gartner 2020). With this study, we respond to the call for further research to reveal and structure activities and related actions developed in early-stage venture creation.

3.6.1 Theoretical contribution

Many studies in the field are rather of conceptual nature, aiming to provide an understanding of entrepreneurial actions and decision processes in general. However, only limited research has been directed to an in-depth understanding of entrepreneurial actions in the early stage. With our study, we enrich theory by providing a first attempt to structure entrepreneurial action patterns and their meaning. This is important, because conceptual and theoretical models are helpful but do not expose how entrepreneurs behave and act in reality (de Clercq and Voronov 2009; Gross, Carson, and Jones 2014; Hindle 2004).

Here, our study enriches concepts, and results indicate that NE align their activities to internal challenges and problems, whereas EE orient their activities towards a solution. Based on entrepreneurial thinking and perception of problems and opportunities, NE follow a causal, and EE a combination of causal and effectual, reasoning logic. This is consistent with the findings of Ruiz-Jiménez et al. (2021) and Hindle et al. (2004), but enriches the theory by separating the solution and problem orientation of EE

and NE. Our study is a first endeavor to outline the processual structure of entrepreneurial activities. We find that entrepreneurial experience affects the activities in a parallel, iterative, and interconnected way with a strong focus on the solution and on value generation (Fisher et al. 2020; Kuratko, Fisher, and Audretsch 2021)

Finally, we contribute to the nascent discussion on dynamic capabilities and their actions (Zahra, Petricevic, and Luo 2022). Our research results highlight that entrepreneurship can be described as a creative resource management process characterized by iterative learning and adaptation in an uncertain environment (Zahra 2021; Teece 2016; Lanza and Passarelli 2014).

3.6.2 Practical implications

From our explorative study, several implications are evident for founders and startups as well as for managers in entrepreneurial companies. Firstly, our study indicates tangible aspects of entrepreneurial thinking, reasoning, and acting. The in-depth understanding of entrepreneurial activities and as well as the processual structure, helps founders and startups to critically reflect on their working mode and their progress. Secondly, the dimensions and activities can be used to set up and optimize entrepreneurship education and training formats and intrapreneurship activities. Targeted support mechanisms can be adjusted towards developing a holistic toolset for emerging entrepreneurs. The profound understanding of entrepreneurial activities and behavioral characteristics helps to adjust the offerings of entrepreneurship education programs by focusing and connecting the three dimensions and their respective activities. Thirdly, the identified constructs can be used by venture capital firms and business angels to assess entrepreneurs' actions for quality assessments and serve to validate potential investment hypotheses.

3.7 Conclusion

Entrepreneurial action forms the centerpiece of new venture-creation. This study is a first endeavor to enrich adjacent conceptual evidence by taking a stand to research entrepreneurship as a practice (de Clercq and Voronov 2009; Gross, Carson, and Jones 2014). Our results indicate that entrepreneurs act in and across three dimensions, namely

EA, RE, and VG. The three dimensions include 27 activities related to 51 underlying actions. With our exploratory research design, we nurture the understanding of what entrepreneurs do in the early stage of venture creation. Beyond that, we provide insights at the firm and individual levels of early-stage ventures.

Our findings portray interesting differences (and commonalities) in the execution of activities and related actions for NE and EE. This study specifically outlines the activities of NE and EE performed in a resource-constrained environment. NE perceive resource scarcity as an obstacle and aim at a causal reasoning logic to build an optimal resource base to develop the venture. In contrast, EE follow an effectual reasoning logic by repurposing and transforming existing resources to accelerate venture building. Accordingly, NE are more inward-driven, focusing on internal challenges, whereas EE are outward-driven with a strong focus towards pragmatic development of “good-enough” solutions. Notably, NE pursue a sequential and unconnected entrepreneurial progression because of the strong focus on internal challenges and the ambition to build an optimal resource base. Unlike NE, EE follow a parallel and connected entrepreneurial progression to accelerate venture building and to instantly integrate outside feedback into the business idea.

Despite the contrasting results, outlining the commonalities of NE and EE activities is equally important. There are four common activities across the two groups in EA, one in RE, and one in VG. Although several activities in the dimensions are equally shared between NE and EE, the actions related to the activities differ between the two groups. In spite of common activities across the three dimensions, the specificity of the underlying actions differ between NE and EE. Because of the strong inward and problem focus of NE and the outward and solution focus of EE, we hypothesize that there is compelling decision bias towards value generation between NE and EE.

Overall, this study succeeds in critically reflecting on and interlinking real-life entrepreneurial activities and conceptual entrepreneurship theories. It becomes evident that entrepreneurial action is a multifaceted and boundary-spanning research field that connects entrepreneurial cognition, (dynamic) capabilities, entrepreneurial resourcefulness,

and opportunities for recognition/creation. This study contributes to the respective research streams and emphasizes the need to think beyond and across concepts to fully comprehend new venture creation.

3.8 Future research

This study is a first endeavor to understand the entrepreneurial activity for early-stage venture creation that does not come without limitations. Firstly, by building on established theoretical concepts and empirical investigations, this study is a first shot at conceptualizing entrepreneurial action patterns. Overall, the study provides an in-depth understanding of the similar but different entrepreneurial activities of EE and NE. As this study draws on 112 interviews, it is important that activities and behaviors are accurately self-reported. Hence, there may be a reporting bias if the study does not exactly reflect how entrepreneurs actually behave in the way they describe it. Secondly, while the Gioia methodology is a much-anticipated approach to condense and aggregate qualitative data, it may suffer from bias in the analysis process. Despite independent coding and analysis of the data to ensure intercoder-reliability, there may still be bias that has an impact on the study results. Thirdly, as we have focused solely on action and activity patterns, the results of the study do not depict whether a specific set of entrepreneurial activities affects performance or the success of the venture. Fourthly, as we have considered entrepreneurial experience as a dominant aspect of our sampling, further studies could consider additional aspects of entrepreneurs, such as personality traits, educational background, and demographic attributes, which could lead to different actions and activity distributions across cohorts.

These limitations suggest the necessity to enrich and build on our study by conducting further research that inherits a longitudinal analysis of entrepreneurial behavior. By doing so, such attempts could generate findings if the actions and behavioral characteristics evolve over time and provide implications about whether a specific set of actions leads to entrepreneurial success. Furthermore, an in-depth study that explores the relationship between specific entrepreneurial personality traits and respective entrepreneurial activities would be an auspicious addition to uncovering the human component of

entrepreneurship in detail (Palmer et al. 2021). Such a research study would enrich the current literature that focuses primarily on entrepreneurial experience from a two-sided perspective with the inclusion of entrepreneurial personality traits and associated activities.

3.9 References (Section 3)

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Facebook and the Creation of the Metaverse: Radical Business Model Innovation or Incremental Transformation?

4 Facebook and the Creation of the Metaverse: Radical Business Model Innovation or Incremental Transformation?

Research Paper III: Empirical study

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Abstract

Purpose – In a move characterized by ambiguity, Facebook changed its name to Meta in October 2021, announcing a new era of social interaction, enabled by the metaverse technology that appears poised to become the future center of gravity for online social interactions. At first glance, the communicated change signals a radically new business model (BM) based on an unprecedented configuration of the three following components: value creation, value proposition and value capture. The purpose of this paper is to analyze Facebook’s announced changes in its BM to clarify whether the change is as radical as communicated or rather represents an incremental transformation of the current BM.

Design/methodology/approach – This investigation adopted an in-depth case study research method. The process included using a structured approach to collect 153 data points, including academic studies and publicly available information, followed by qualitative content analysis.

Findings – The results of our analysis of Facebook’s entrepreneurial journey indicate that the communicated strategic refocusing does not correspond to a radical BM innovation pattern. Even though Facebook’s BM might evolve into the innovation phase, as the current changes appear very futuristic, the authors estimate that the core elements of

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the BM will change incrementally. The investigation indicates that the underlying logic of the straightforward communicative efforts primarily serves two purposes: to improve the external perception of the company and to disseminate an internal change signal within the organization.

Originality/value – This paper is the first study that takes an entrepreneurship and BM perspective in analyzing Facebook’s approach in rebranding to Meta and refocusing its strategy on building the metaverse. The academic and practical relevance, as well as the potential future impact on business and society, makes the investigation of this case an intriguing prospect. Additionally, the study illuminates the difference between the communicated vision and the real impact on the business, suggesting critical questions about future large-scale rebranding efforts and their effects.

Keywords: Business model innovation, Metaverse, Facebook, Meta, Case study

5 An Integrative Framework for Business Model Innovation in the Tourism Industry

Research Paper IV: Conceptual Paper

Published in *The Service Industries Journal*; (ISSN 0264-2069), Vol. 42 (13/14),
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10.1080/02642069.2022.2127690

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Abstract

The tourism industry finds itself in times of constant change. The COVID-19 pandemic and accompanying negative economic effects had a significant impact on customer behavior and accelerated the need for companies to innovate. The concept of business model innovation (BMI) proves to be a suitable approach to overcome these challenging situations by innovating the very core of the firm. However, research shows that siloed BMI thinking is insufficient, and firms need to take a more holistic approach. We therefore expand the current understanding by proposing a framework that integrates relevant dimensions such as change impulses and business model configurations, as well as context factors such as service newness and degree of change or destination characteristics, and the outcomes of BMI initiatives into a comprehensive model for the tourism industry context. With our work, we aim to guide future research and expand the currently unbalanced, heterogeneous picture of BMI in service industries.

Keywords: business model, business model innovation, tourism, services, dynamic environments

6 Contributions and future research

The motivation of this publication-based dissertation was to contribute to the understanding of how firms can be managed entrepreneurial, as an effective way to cope with opportunities and threats that stem from change. Here, it entered the field of CE research in which several research gaps have been identified in two areas: 1) Corporate Venturing (CV) and 2) BMI activities, both as central components of CE initiatives.

The findings of this dissertation provide contributions to research in the field and illuminate avenues for further research. Moreover, the findings offer practitioners new insights relevant for venturing and BMI activities as part of CE initiatives shown in figure 13. While the specific contributions are presented in the previous sections (two to five), the next paragraph will reflect on the dissertation’s findings collectively.

Figure 6: Contributions of research papers in this dissertation to research and practice

Study, focus, and section	<i>(Corporate) Venturing</i>		<i>Business Model Innovation</i>	
	I Structured Literature Review Measurement of venturing success <i>Section 2</i>	II Empirical Study Grounded Theory Entrepreneurial actions to build new ventures <i>Section 3</i>	III Empirical Case Study BMI activities and resulting effects <i>Section 4</i>	IV Conceptual Paper Structured Framework for BMI activities <i>Section 5</i>
Main contributions toward academia	<ul style="list-style-type: none"> Three structural dimensions for CV measurement approaches Nine clusters allow meaningful groupings of measurement approaches 114 unique financial/non-financial measurement items identified and structured 	<ul style="list-style-type: none"> 67 types of entrepreneurial actions and their meaning and purpose 3 dominant dimensions of entrepreneurial activity emerge Processual differences of entrepreneurs' actions and links to resources 	<ul style="list-style-type: none"> Radical BMI activities and discrepancies in its communication Trajectories of BM can be actively influenced through technology application Internal and external signaling effects as driver of entrepreneurial activities 	<ul style="list-style-type: none"> Guidance for further research on BMI activities and outcomes in service industries Integration of central BMI aspects in extant literature: <ol style="list-style-type: none"> 1) internal and external change impulses, 2) BM design configurations, 3) contextual factors, and 4) outcomes
Main contributions for practitioners	<ul style="list-style-type: none"> Transparency over measurement approaches, their configuration along clusters and dimensions Comprehensive overview of measurement approaches and items to set up/improve controlling of CV activities 	<ul style="list-style-type: none"> Comprehensive overview of concrete and tangible actions to build new ventures and use and develop resources Guidance for investors to evaluate startup teams and for the development of teaching formats 	<ul style="list-style-type: none"> Technology evaluation can positively affect BMs towards innovation trajectories and thereby creates opportunities Communication of BMI activities to initiate change processes and improve external perception 	<ul style="list-style-type: none"> BMI activities in high-paced service industries need to be approached holistically from owners and managers BM design need to be tested and evaluated along contextual factors and economic, social, ecologic outcomes

Source: own illustration

6.1 Contributions to research

The contributions of this dissertation to research can be grouped into three main areas.

First, findings of Research Paper I and Research II contribute to a better understanding of venturing activities with a focus on success measurement and venture creation. Here, Research Paper I defines three structural dimensions in which the variety and heterogeneity of measurement approaches in extant research can be structured and grouped in meaningful clusters. Additionally, the findings offer researchers directions to further develop context-dependent, mode-specific CV measurement approaches for (e.g., for licensing, CVC, or venture building). They can do so by making use of the identified, measurement items, comprising financial and non-financial performance indicators. Herby, the findings enable further research to empirically evaluate different measurement approaches. Ultimately, the current and increasing research on the management of CE initiatives, and CV activities, in particular, benefits, as the findings help to 1) further specify the attributes of a CE strategy and its process (Kreiser et al., 2021; Pirhadi & Feyzbakhsh, 2021) and 2) to develop structured evaluation approaches of context- and target specific CV modes and their initiatives (Weiss & K. Kanbach, 2021; Yu & Fang, 2022).

Findings in Research Paper II, based on empirical evidence, a) unravel entrepreneurial actions and their purpose for new venture creation and b) define three dimensions of entrepreneurial activity in the early stage. Additionally, the insights gained through the comparison of activities of novice and experienced entrepreneurs, provide research with clearly defined and tangible actions of entrepreneurial activity and behavior (Kuratko, Fisher, et al., 2021; Thompson et al., 2020; Zahra, 2021). Furthermore, these findings contribute to the emerging discussion on dynamic and entrepreneurial capabilities and their specific actions (Zahra et al., 2022) as well as to the emerging discussion of Entrepreneurial Resourcefulness (Bradley, 2015; Fisher et al., 2021; Williams et al., 2021; Zahra, 2021).

Second, the findings of Research Paper III and Research Paper IV contribute to a better understanding of BMI activities and their effects and provide a holistic approach to BMI. Here, the findings of Research Paper III enhance the understanding of BMI activities and their drivers and effects on a) the trajectories of BMs and b) their results in terms of the internal and external perception of a company and CE initiative. At more detail, BMI

research is enhanced with empirical evidence to changes in several components of the BM and their effect on the type and degree of change as a result. Furthermore, the study highlights that BMI activities and their communication can serve for internal and external signaling to initiate change processes and to improve the perception of the company.

Furthermore, the findings of Research Paper IV expand the understanding of BMI by proposing an integrative framework that connects existing but siloed concepts in the field. Resulting from the focus on a very dynamic industry, the framework is the first of its kind, proposing *what* aspects need to be considered for BMI activity. Thereby, the study offers researchers a structured framework to further and empirical investigation. Being a central part of CE, the advancements of the study to BMI research provide a better understanding of potentially innovative BMs and their contribution to the entrepreneurial output of established companies within very dynamic industries and resulting change.

These findings are of relevance for the research on CE initiatives, as it takes entrepreneurial activity in the focus and thus contributes to better understanding of how, for instance, responsible middle-level managers can engage in venturing and BMI activities in structured ways (Kuratko, Fisher, et al., 2021; Larsen, 2022). Additionally, it addresses skill gap identified between managers and entrepreneurs (Hisrich & Ramadani, 2017; Teece, 2016), and can thus serve as a basis for future research on required entrepreneurial skills at different management levels (Kuratko & Audretsch, 2013; Teece, 2016)

Third, with these findings, CE research is enriched by clearly pointing out ways to increase a company's entrepreneurial output through the management of CE initiatives across the organizational levels and boundaries as a success factor of CE (Kreiser et al., 2021; Verma & Bashir, 2017). Combining findings from Research Paper II with clearly defined and tangible entrepreneurial actions and from Research Paper IV with the aspects for the development of new BMs, help to focus researchers in the field in the investigation of entrepreneurial activity in established organizations (Kuratko, Fisher, et al., 2021; Kuratko, Hornsby, et al., 2021; Larsen, 2022; Smith & di Gregio, 2008).

6.2 Contributions for practitioners

Next to its contributions to research, this dissertation has implications for practitioners, which can be grouped into main three points.

First, this comprises the differentiated view on essential activities of CE initiatives. This is relevant for middle-level managers and their role when seizing new opportunities in two ways: Depending on the organization design and hierarchy, they need to a) acquire attention, commitment, and resources from the top management, and b) they can guide first-level managers and employees in the actual execution in the process of venture building and BMI as entrepreneurial activity.

Second, with Research Paper I and II, practitioners are provided with tangible insights to determine and control CV activities and outcomes as well as to engage in venture creation. On one side this helps managers and employees in established companies to evaluate existing initiatives and thereby to reallocate resources based on (desired) results. These however can be seen through and evaluated by a multitude of diverse measurement approaches and performance indicators provided by this dissertation. On the other side, managers benefit from the evidence-based findings of concrete and tangible actions necessary to build new ventures. These give guidance for the actions and the desired sequence of activities for entrepreneurial individuals.

Third, through findings of Research Paper III and IV, managers as entrepreneurs are provided with insights into the motives and effects of BMI activity and are equipped with a framework to approach BMI holistically. While entrepreneurial signaling to external and internal stakeholders was observed as a side-effect of BMI, it can also be seen as a motivator for BMI. Moreover, practitioners benefit from Research Paper IV of this dissertation, as they are enabled to follow a structured approach to develop and test new BMs as part of entrepreneurial activities.

These findings are of increased relevance for a better management of CE initiatives, as it allows to reflect over the quantitative and qualitative effects of these initiatives against the strategic and financial targets (Harms et al., 2010; Kreiser et al., 2021).

Overall, these findings are especially relevant for individuals in established organizations to overcome the ambidextrous challenge of simultaneously operating the daily business, while seizing new opportunities in an entrepreneurial fashion. On the one hand, these findings help to control, steer, and engage in venturing activities more effectively. On the other hand, they help to engage in BMI activity in structured way and under consideration of individual and company-specific circumstances. Ultimately, these findings serve to design and execute CE initiatives more appropriately and hence can be a viable avenue to achieve and sustain competitive advantage and superior performance.

6.3 Limitations and future research

Next to its contributions to research and practice, the publication-based dissertation come with limitations that mainly arise from the methods and data used in the studies of the dissertation. These limitations also highlight avenues for future research.

First, Research Paper I as systematic literature review structures and analyzes existing research in the field and therefore does not allow the evaluation of measurement approaches and thus no derivation of recommendations or best practices is possible. Therefore, further research can tap into open field of research to assess CV success measurement approaches based on their contextual and mode-specific fit. Furthermore, the measurement approaches identified are not exhaustive, and empirical evidence for other approaches as well as the use of financial and non-financial measurement approaches could therefore lead to valuable advancements. This is particularly interesting in settings where CE initiatives are selected and executed simultaneously and need to be evaluated based on their purpose.

Second, with its large qualitative data set, the findings of Research Paper II are limited due to a potential discrepancy between interviewees reported actions and their actual

behavior. Furthermore, despite its inter-coder analysis approach, the data analysis might suffer from subjectivity and biases. Hence, further empirical investigation in ethnographic research approaches could observe actual behavior. Additionally, longitudinal studies can validate the identified activities against their contribution to venture survival and success.

Third, being a single case study, findings from Research Paper III suffer from limited generalizability towards other and/or comparable cases. Hence, drivers and effects of BMI activity need to be investigated on a larger sample. Furthermore, results are based on a limited data set, given the availability of information at that point in time. Ideally, further studies could investigate BMI activity combined with expert interviews within the case. Additionally, research could further investigate the processes of technology evaluation and integration in BMI activities, to derive structured evaluation approaches and thus enhance the understanding of its influence on BMI trajectories.

Fourth, due to its conceptual nature, findings of Research Paper IV need to be validated empirically in respective companies and industries. This would also offer room for further improvements regarding the integrated aspects into the proposed BMI framework. Additionally, the design and testing process of BMs could be investigated within a cohort of similar firms to understand the mechanism connected to structured BMI activities.

Despite these limitations, the dissertation contributes to research on CE initiatives as a viable way to manage established firms entrepreneurially. With its contributions, researchers and practitioners alike are provided with a better understanding of central entrepreneurial activities, such as venture creation and BMI. Hence, this dissertation helps the knowledge accumulation on a central component of how firms could stay or become more entrepreneurial and thus deal with dynamic change more successfully.

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