

Three essays on venture capital: Exploring investment decisions of investors and selection decisions of investees

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Dedicated to my family

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List of abbreviations

B2B	Business-to-business
BA	Business angel
BCERC	Babson College Entrepreneurship Research Conference
bn	Billion
BSc	Bachelor of Science
BVC	Bank-affiliated venture capitalist
BVK	Bundesverband Deutscher Kapitalbeteiligungsgesellschaften (English: The German Private Equity and Venture Capital Association)
CBC	Choice-based conjoint experiment
cf.	Compare
CEO	Chief Executive Officer
CGS	Consumer Goods and Retail
COO	Chief Operating Officer
Coef.	Coefficient
Conf. I.	Confidence interval
CVC	Corporate venture capitalist
DACH	Germany (D), Austria (A), Switzerland (CH)
Dipl.	Diploma
DD	Due diligence
EAP4	4 th Annual Entrepreneurship As Practice Conference
EDEN	European Institute for Advanced Management Studies in Management Doctoral Education Network
ESMT	European School of Management and Technology
EU	Energy and Utilities
EUR	Euro
e.g.	Exempli gratia (English: for example)
FGF	Förderkreis Gründungs-Forschung e.V., Entrepreneurship, Innovation und Mittelstand
FS	Financial Services
FTE	Full-time equivalent
GP	General partner
HB	Hierarchical Bayes
HHU	Heinrich Heine University
i.e.	Id est (English: that is)
Infra.	Infrastructure
IPS	Industrial Products and Services
IRMBAM	International Research Meeting in Business and Management
IRR	Internal rate of return
IT	Information technology
IVC	Independent venture capitalist
JCR	Journal citation report
LP	Limited partner
LS	Life Sciences
MA	Master of Arts
MBA	Master of Business Administration
MSc	Master of Science
M&A	Mergers and acquisitions
m	Million

N/A	Not available
OECD	Organization for Economic Co-operation and Development
PE	Private equity
PEP	Political exposed persons
PH	Pharma and Health Care
PhD	Doctor of Philosophy
R&D	Research and development
RDT	Resource dependence theory
RQ	Research question
SD	Standard deviation
SE	Standard error
SME	Small and medium-sized enterprises
SSRN	Social Science Research Network
TMT	Technology, Media and Telecommunication
Trans.	Transportation
U.K.	United Kingdom
U.S.	United States
U.S.A.	United States of America
USD	United States Dollar
VC	Venture capital
vs.	Versus
y	Year(s)

A. Introduction

1. Motivation and relevance of the dissertation

Entrepreneurial finance focuses mainly on private funding, in contrast to corporate finance, which concentrates on public funding (Wright & Robbie, 1998). One exception is the situation in which a successful new venture might end up getting listed at the stock market so that the focus is shifted to public financing. Entrepreneurial finance does not only focus on the private financing of young, privately owned new ventures but also involves the financing of a corporation or family business (Alemany & Andreoli, 2018). Focusing on new venture financing, entrepreneurial finance covers the different stages of venture development such as the early life-cycle stages (e.g., the seed or startup phase, with a focus on product development, hiring decisions, or R&D processes) and later stages (e.g., the growth as well as expansion phases, with a focus on internationalization, product adoption, or market acceptance) (Alemany & Andreoli, 2018). During these life-cycle stages, external private capital plays an integral role in new ventures' growth activities because they have only limited internal capital sources, such as cash flow or private savings (Carpenter & Petersen, 2002; Coleman & Robb, 2012; Robb & Robinson, 2014).

To investigate the role of external private capital, entrepreneurial finance research differentiates between two major external capital sources: (i) external capital from debt investors and (ii) external capital from equity investors (Cosh, Cumming, & Hughes, 2009; Denis, 2004). Since new ventures in both early and later stages suffer from the liability of newness (Baum, 1996; Hannan & Freeman, 1984; Stinchcombe, 1965) and/or the liability of smallness (Carroll & Hannan, 2000; Stinchcombe, 1965), they have higher failure rates than their mature counterparts. Compared with established firms, new ventures usually cannot provide sufficient collateral for debt financing because of an insignificant amount of tangible assets and a higher default risk. One exception, however, is the case in which personal

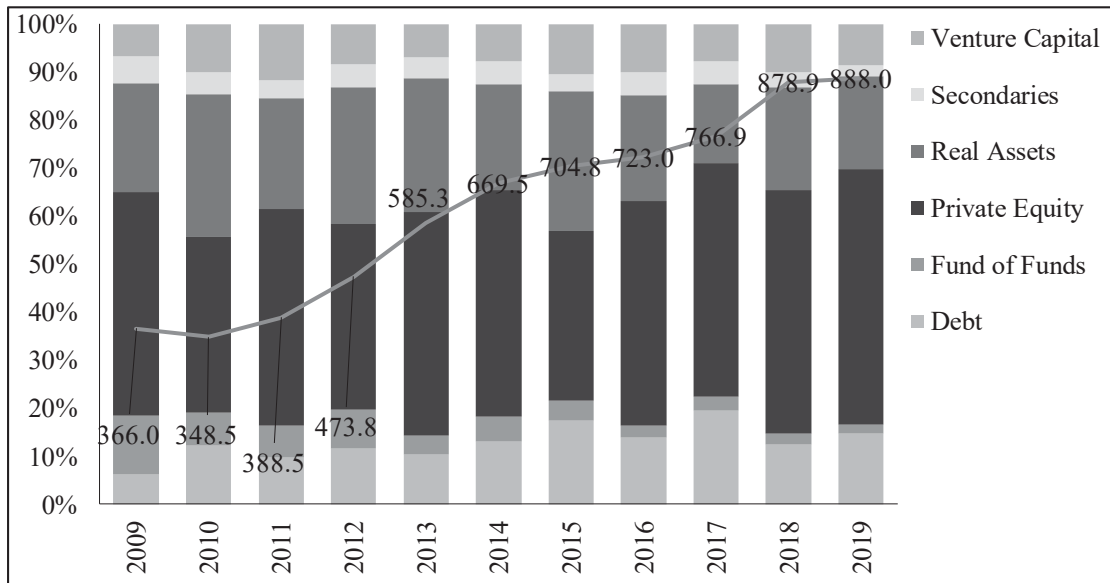
guarantees (Colombo & Grilli, 2007) or promotional loans (Alemany & Andreoli, 2018) can be provided. Thus, debt financing usually plays a less important role in new venture financing (De Rassenfosse & Fischer, 2016; Ueda, 2004). Consequently, external equity investments prevail, such as funds from family and friends, crowdfunding investors, business angels, or venture capitalists, to meet entrepreneurs' demand in filling their equity gap (Drover et al., 2017). Among those equity financing sources, funding by business angels and venture capitalists has established itself as key financing source for entrepreneurs seeking external equity funding (Mason & Stark, 2004; Van Osnabrugge & Robinson, 2000). Business angels are private individuals (often cashed-out entrepreneurs) who typically invest their funds in early-stage ventures and make use of their professional experience to support entrepreneurial teams (Alemany & Andreoli, 2018). Venture capitalists are professional investors of long-term, unquoted, risk equity finance in new ventures (Wright & Robbie, 1998). Both angel investors and venture capitalists take an equity stake of the new venture and receive a board seat, additional control, and information rights, whereas the nature of these rights may differ between the two types of investors (Bengtsson, 2011; Cumming, Schmidt, & Walz, 2010). Overall, business angels not only aim for a financial return that they may achieve through the exit but also put great emphasis on using their industry-specific know-how and skills to help entrepreneurs (Arthurs & Busenitz, 2003; Mason & Harrison, 2002b). Venture capitalists, on the other hand, are primarily financially motivated and get compensated by a capital gain, accompanied by a dividend yield that is contingent on the exit scenario (Cumming, 2008).

Two main aspects distinguish entrepreneurial finance from traditional corporate finance. First, entrepreneurial finance is characterized by substantial information asymmetries between the entrepreneur and the financiers that vary over the life-cycle of the new venture because of its size and opaqueness (Hirsch & Walz, 2019). Thus, entrepreneurial finance providers such as venture capitalists make great efforts to approach problems about adverse selection and

moral hazard in their portfolio firms to keep agency costs as low as possible (Fu, Yang, & An, 2019). Specifically, institutional investors attempt to reduce transaction risks by negotiating exclusive contracts and ensuring adequate, active involvement in their portfolio firms (Cumming & Johan, 2008). Second, new ventures depend not only on financial resources but also on tangible and intangible resources, such as human capital, access to networks, and strategic advisory, to leverage their value creation potential (Lee, Lee, & Pennings, 2001). Entrepreneurs look for smart money and hands-on investors with relevant industry experience and valuable networks (Gompers & Lerner, 2004b), which provide them with legitimacy in their ecosystem and may serve as a quality signal (Plagmann & Lutz, 2019). Hence, entrepreneurs seek to collect external funds from equity investors to secure the capital itself but also to find investors with the necessary expertise and networks (Drover et al., 2017; Saetre, 2003). In that sense, venture capitalists but also business angels are relevant early-stage financiers because they can provide both financial and managerial resources (Hellmann & Puri, 2002).

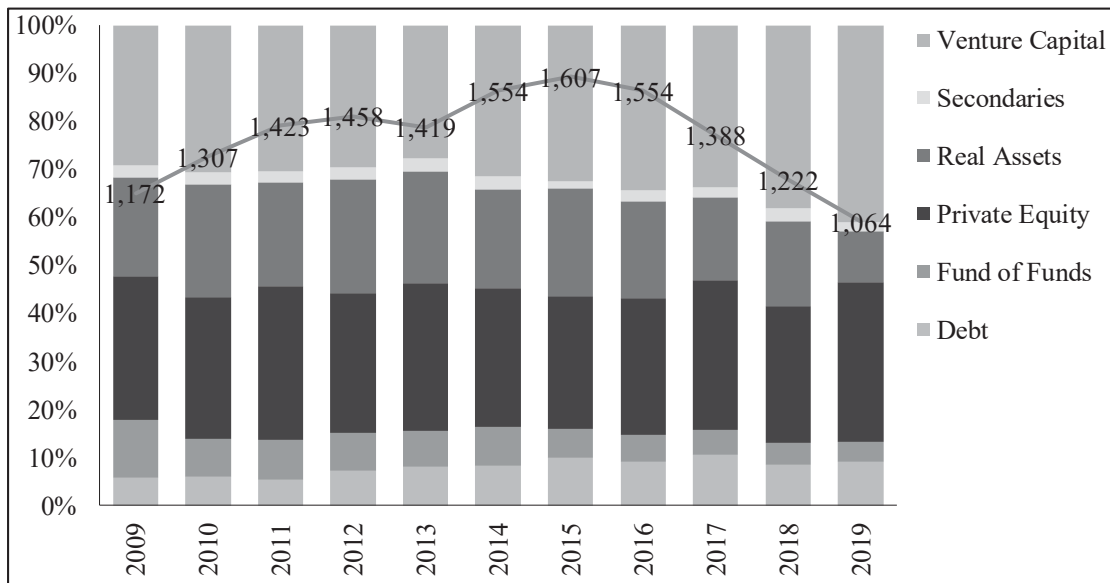
The extent and relevance of private capital financing worldwide are illustrated in Figure A-1 and A-2. Private capital fundraising had a strong year in 2019, raising USD 888.0 billion across 1,064 funds, which is the highest private capital ever raised on an annual basis. Focusing on venture capital inflows, it becomes apparent that 2019 was a strong year, although, fundraising figures fell slightly from the previous year. Even though there is a slight overall decline in both capital raised and funds closed on an annual basis, the median step-up for venture vehicles was close to 60 percent, and nearly 90 percent of these funds were larger than their predecessors (PitchBook, 2019).

Figure A-1: Global private capital fundraising by type [in USD bn]



Source: PitchBook (2019)

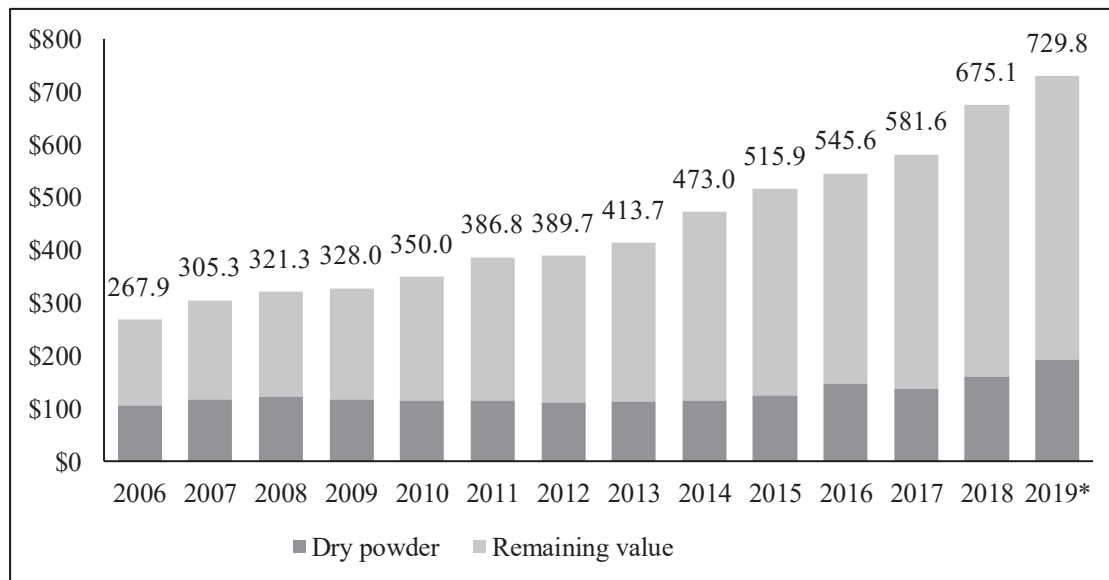
Figure A-2: Global private capital fundraising by type [fund count]



Source: PitchBook (2019)

Figure A-3 provides details on the overall positive developments in the global venture capital market.

Figure A-3: Global venture capital assets under management [in USD bn]



Source: PitchBook (2019)

*As of 6/30/2019¹

From 2006 until mid-2019, global venture capital assets under management have increased by a compounded annual growth rate of 7.4 percent. As of June 2019, around USD 729.8 billion have been managed in venture capital investments. Those developments underline the relevance of venture capital as a fundamental entrepreneurial finance resource. However, despite the strong pace of investment since 2014, venture capital dry powder, or uncalled capital, has also been rising since 2015. Dry powder hits a record high of USD 160.8 billion in 2018 and USD 192.1 billion in mid-2019, which comprised around 23.8 percent and 26.3 percent of total venture capital assets under management, respectively. This poses a serious challenge for venture capitalists, in that they must find new ways to put record amounts of uncalled capital to work productively in the competing market of entrepreneurial finance in the face of worsening macro conditions (Bain & Company, 2020). Since venture capital funds have

¹ Data for the entire year 2019 were not yet available at the time the dissertation was submitted.

grown larger over the past few years and several massive funds have been closed, investment opportunities that deliver suitable return expectations to limited partners declined (PitchBook, 2019). These situations may serve as a signal to fund managers' selection, possibly making them better at choosing targets, but it will also benefit entrepreneurs' bargaining power when negotiating with and choosing venture capitalists. Particularly in high-performing startups, entrepreneurs have a choice about which venture capitalists can invest in their startups (Smith, 2001). Those recent developments in the global venture capital market, as well as the associated amount of dry powder, underline the relevance of investigating the entrepreneur-venture capitalist dyad in more detail, namely from its opposite side: how entrepreneurs select their venture capitalists.

In their institutionalized operations, venture capitalists tend to follow the "venture capital cycle". As part of this circle, institutional investors and affluent individuals provide money to venture capital funds. This money is then invested by venture capitalists in new, innovative high-tech ventures to trigger exponential growth, and the money is finally returned to the initial investor group with a return to compensate for the high risk (Alemany & Andreoli, 2018). Therefore, the life of a venture capital fund starts with its fundraising from outside institutional investors or affluent individuals. This is followed by the selection process of the venture capitalist's portfolio firm. As soon as the selection and the investment decision-making have been completed, the portfolio management process starts, which includes monitoring, adding value, and growing the backed ventures. Finally, the divestment period starts (Gompers & Lerner, 2001; Gompers & Lerner, 2004b).

The key process of the venture capital cycle, however, is the investment decision, as this part is considered highly uncertain in terms of the portfolio firm's future success and because of the information asymmetries between the entrepreneurial team and the venture capitalist

(Carpenter & Petersen, 2002). The investment decision process starts already at the very beginning when entrepreneurs provide venture capitalists with pitch decks, which they must screen and evaluate carefully. In practice, venture capitalists receive many pitch decks; however, they choose only the most promising ventures. On average, venture capitalists invest in only up to 5 out of 100 proposals that they receive per year (Franke, Gruber, Henkel, & Hoisl, 2004; Petty & Gruber, 2011). Therefore, the investment decision-making of venture capitalists is of particular interest to both practitioners and academics.

2. Research objectives and development of research questions

Not only new venture financiers, such as venture capitalists (e.g., Franke, Gruber, Harhoff, & Henkel, 2008; Macmillan, Siegel, & Narasimha, 1985) and business angels (e.g., Bernstein, Korteweg, & Laws, 2017; Landström, 1998), but also entrepreneurs (e.g., Drover, Wood, & Fassin, 2014; Smith, 2001) themselves have the actual decision-making power on strategic financing when selecting either a portfolio firm or a venture capitalist that they want to partner with. Drawing upon different theoretical frameworks—namely, the principal-agent theory (Jensen & Meckling, 1976), the resource dependence theory (Pfeffer & Salancik, 1978), and the institutional theory (Lounsbury, 2007; Thornton, Ocasio, & Lounsbury, 2012)—this dissertation investigates research questions on different aspects of decision-making, which will be derived in the following.

In general, entrepreneurial finance research has focused on two subdomains to examine venture capitalists' and business angels' decision-making when selecting their portfolio firms: (i) investment decision-making criteria and (ii) investment decision-making processes (Silva, 2004). This dissertation aims to investigate the first research stream on the investment decision-making criteria that venture capitalists and business angels use when evaluating new ventures that they like to invest in. Both venture capitalists and business angels are exposed to substantial asymmetric information and agency issues (Fiet, 1995; Van Osnabrugge, 2000). In addition to

the risk of high market uncertainty, risk capital providers such as venture capitalists and business angels face the problem that entrepreneurs may behave opportunistically during the investment process. Especially during the ex-ante investment stage, inefficiencies might arise as entrepreneurs withhold relevant information regarding the investment decision (Cumming & Johan, 2013). Thus, it is often difficult to determine whether entrepreneurs behave opportunistically and exploit their information advantage or instead act altruistically and share information with venture capitalists and/or business angels (Hart, 1995; Van Osnabrugge, 2000). For example, the shortage of information adversely affects venture capitalists' funding decisions so that they might invest in sub-optimal entrepreneurial ventures (Bellavitis, Kamuriwo, & Hommel, 2019). Yet venture capitalists can reduce this negative effect with deal origination capabilities, such as writing a sophisticated contract to control and monitor the entrepreneur to maximize returns for their limited partners (Cumming et al., 2010). Unlike venture capitalists, business angels frequently lack these sophisticated capabilities to evaluate market risk (Chemmanur & Chen, 2014; Mason & Harrison, 2002a). Consequently, angel investors focus on the ex-post involvement with the entrepreneur to minimize agency risk (Van Osnabrugge, 2000). Accordingly, business angels may focus on entrepreneurs' characteristics by bringing extensive personal experience and knowledge to the entrepreneurial firm (Arthurs & Busenitz, 2003). Overall, venture capitalists and business angels need to carefully select their potential investment targets by conducting thorough due diligence based on specific investment criteria.

These investment criteria have been studied extensively by entrepreneurial finance research. Much of this work has shown that venture capitalists and business angels use criteria such as characteristics of the management team (e.g., Franke et al., 2008; Haines, Madill, & Riding, 2003), the business opportunity and market (e.g., Baum & Silverman, 2004; Brush, Edelman, & Manolova, 2012), and financial factors (e.g., Maxwell, Jeffrey, & Lévesque, 2011;

Robinson, 1987). However, the literature in this field is poorly organized and shows mixed results regarding the different foci on investment criteria. Drawing on agency theory (Fiet, 1995; Hsu, Haynie, Simmons, & McKelvie, 2014; Jensen & Meckling, 1976), the first essay of this dissertation addresses this gap and structures the existing literature, thereby answering the following research question:

***RQ 1:** What type of investment criteria do venture capitalists and business angels use when evaluating new venture investment opportunities and which characteristics are likely to result in a positive funding decision?*

The role of equity financing through venture capitalists, and in particular the matching of those financing sources to entrepreneurial opportunities, has already been analyzed intensively. What is missing, however, is research on the other aspect of early-stage investors' investment criteria, namely how entrepreneurs evaluate and select their potential financiers. Particularly, entrepreneurs of high-tech and innovative new ventures also have a choice about what kind of venture capitalists can invest in their ventures (e.g., Drover et al., 2014). Entrepreneurs spend much time evaluating their venture capital investors, which might result in rejecting funding offers from certain venture capitalists (Smith, 2001). Although the capital acquisition process for entrepreneurs is likely to be less difficult, the screening and finding of the right investor with the essential network and expertise are much more challenging in comparison (Saetre, 2003). Therefore, this dissertation argues that entrepreneurs are interested in *who* invests in their ventures.

The existing literature on the criteria used by entrepreneurs to select their venture capital investors is quite restricted and limited to a small spectrum of criteria such as terms and conditions (Falik, Lahti, & Keinonen, 2016), investor reputation (Drover et al., 2014), trust and empathy (Fairchild, 2011), and affiliation (Hsu, 2004). The research lacks empirical evidence

for the causal effect of different types of value-added services that a venture capital investor provides to become attractive to an entrepreneur. Thus, this dissertation examines whether the active involvement of venture capitalists in their portfolio firms through their value-added services portfolio may help entrepreneurs to close a resource gap or strengthen an already existing resource. Drawing on resource dependence theory (Hillman, Withers, & Collins, 2009; Pfeffer & Salancik, 1978), the second essay investigates, from the perspective of entrepreneurs, whether and to what extent certain network- and competence-based value-added services are essential for entrepreneurs' venture capitalist selection decisions. More specifically, the second research question of this dissertation is phrased as follows:

***RQ2:** What specific value-added services do entrepreneurs perceive as important when selecting their venture capital investor and why do they focus more on certain kinds of value-added services than on others?*

Over the past years, the market for entrepreneurial finance has changed as a result of technological transformations, new governmental rules, and practitioners' creativity. In particular, corporate venture capital has evolved along with the shifting of entrepreneurial finance resources. Firms have invested in new, innovative startups to overcome the loss of returns from their research and development departments and to be prepared for digital changes in their specific environments (Fulghieri & Sevilir, 2009). As such, new players have entered the entrepreneurial finance ring, offering financing solutions to entrepreneurs and their ventures (Block, Colombo, Cumming, & Vismara, 2018). The progress in entrepreneurial finance has led the corporate venture capital environment to enlarge from traditional industrial corporates owning internal venture capital units to sectors such as the banking and insurance industries with their own venture capital activities (Bertoni, Colombo, & Quas, 2015; Bertoni, Colombo, Quas, & Tenca, 2019). In that regard, global asset management firms such as Santander

InnoVentures (EUR 200 million assets under management) of the Spanish multinational commercial bank Banco Santander or Allianz X (EUR 1 billion assets under management) of the German multinational insurer Allianz SE, are representative examples for the establishment of banks' and insurers' internal venture capital units in the European entrepreneurial finance landscape.

Recently, entrepreneurial finance research has tapped into this research niche by investigating the heterogeneity of venture capitalists with different affiliations—that is, venture capital units that are affiliated with a traditional corporation, a bank, an insurer, or the government (Bertoni et al., 2015; Bertoni et al., 2019). However, a uniform picture of bank-affiliated venture capitalists is lacking. In particular, banks are a relevant actor within the European venture capital market, which is composed of many bank-based economies such as Germany, France, and the United Kingdom (Black & Gilson, 1998; Croce, D'Adda, & Ughetto, 2015). Banks traditionally provide debt financing and diverse advisory services, but since their role as equity investors has emerged, they also act as risk capital providers through their bank-affiliated venture capital units (Hellmann, Lindsey, & Puri, 2008). Bank-affiliated venture capitalists differ from independent venture capitalists in several aspects, such as their set-up structure (Andrieu & Groh, 2012; Cumming, Fleming, & Schwienbacher, 2007; Cumming & Murtinu, 2016) and governance mechanisms (Cumming & Murtinu, 2016; Sahlman, 1990; Tykvová, 2006). Yet it is still unknown how bank-affiliated venture capitalists manage their investment activities in terms of specific banking regulations and how their objectives differ from those of traditional corporate venture capitalists and independent venture capitalists (Cumming & Murtinu, 2016). More specifically, the investment behavior and field-level specific investment logics about how bank-affiliated venture capitalists conduct their deals (e.g., sourcing, screening, evaluating, approving, and monitoring) have not been identified. Furthermore, how multiple investment logics are influenced by a bank's institutional

environment—that is the external venture capital world and the internal parent bank’s environment—is still unknown. Hence, drawing on institutional theory (Lounsbury, 2007; Thornton et al., 2012), the third essay of this dissertation investigates the following research question:

***RQ3:** How do bank-affiliated venture capitalists combine multiple investment logics by taking into account their institutional environment and why do bank-affiliated venture capitalists’ investment behaviors differ from the behaviors of other types of venture capitalists?*

3. Overview of the dissertation and additional remarks

This cumulative dissertation draws upon three essays that deal with the answers to the research questions derived in Chapter A.2. Essay 1 (cf. Chapter B) analyzes the investment decision-making of venture capitalists and business angels across the recent entrepreneurial finance literature by conducting a systematic literature review. Essay 2 (cf. Chapter C) investigates entrepreneurs’ venture capitalist selection based on a variety of value-added services. The decision-making is captured by a conjoint experiment, and semi-structured interviews have been conducted to explain the findings in the context of the resource dependency theory. Essay 3 (cf. Chapter D) analyzes how the investment logics of bank-affiliated venture capitalists evolve by drawing upon institutional theory. The third essay uses a qualitative empirical research design and derives propositions on how bank-affiliated venture capitalists conduct their deals. Table A-1 provides an overview of the three essays. In addition to the research objective and contributions of the individual essays, the table contains information on the theoretical perspective, the sample used, and the methodological procedures. Furthermore, Table A-2 provides an overview of the current status of the three essays, such as academic journal submissions, academic conferences, and workshop participations, as well as how much

each author contributed. Finally, Chapter E concludes with a recapitulation of the key results and the key contributions of this dissertation to the entrepreneurial finance literature.

Table A-1: Characteristics of the three essays constituting the dissertation

	Title	Theoretical perspective	Research objectives	Contributions	Sample	Method
Essay 1	Research on venture capitalists' and business angels' investment criteria: A systematic literature review	Principal-agent theory	Investigation of entrepreneurial finance literature in terms of differences in investment criteria between VCs and BAs.	<ol style="list-style-type: none"> 1. Foundation of a framework based on agency theory to categorize entrepreneurial finance literature on both VCs' and BAs' investment criteria. 2. Systematic development of future research opportunities. 	54 studies on VCs' and BAs' investment criteria	Systematic literature review
Essay 2	Scout or coach? Value-added services as selection criteria in entrepreneurs' venture capitalist selection	Resource dependence theory	Investigation of the impact of different types of value-added services on entrepreneurs' venture capitalist selection.	<ol style="list-style-type: none"> 1. Development of an experimental design to analyze how entrepreneurs select VC investors to disentangle the concept of different value-added services. 2. Proposition of the relevance of value-added services as an unexplored, active resource management tool for entrepreneurial growth. 3. Theorization and confirmation of the VC's role in entrepreneurs' eyes as a "scout" rather than a "coach". 	(3,172 decisions of) 122 entrepreneurs in 114 German, Austrian, and Swiss new ventures	<p>Mixed method design:</p> <p>Descriptive analysis (i.e., t-test)</p> <p>Choice-based conjoint analysis (multi-level mixed-effects logistic regression; hierarchical Bayesian modeling)</p> <p>122 semi-structured interviews</p>
Essay 3	The field of banks in entrepreneurial finance—Multiple investment logics of German bank-affiliated venture capitalists	Institutional theory (new institutionalism)	Investigation of German bank-affiliated VCs' investment practices and the emergence of multiple investment logics.	<ol style="list-style-type: none"> 1. Extension of the literature stream on BVCs and derivation of their investment logics. 2. Development of a conceptual model to explain the involvement of BVCs' multiple investment logics by elaborating isomorphic habits. 3. Theorization of the hybridization of BVCs' investment logics. 	20 German bank-affiliated VCs; 4 other, additional German banks as experts; 1 German PE and VC association	Qualitative empirical study based on 27 semi-structured interviews and archival data

Table A-2: Current status of essays

	Current status	Conferences / PhD courses / Awards	Share of contributions
Essay 1	Published in FGF Studies in Small Business and Entrepreneurship (Springer Book Series)	None	Christian Granz 70 % Marisa Henn 20 % Eva Lutz 10 %
Essay 2	Accepted for publication in <i>Venture Capital: An International Journal of Entrepreneurial Finance</i> A summary paper of the accepted research project has been published in the conference proceedings of the 39 th BCERC.	<u>Conferences:</u> <ul style="list-style-type: none"> 22nd Annual Interdisciplinary Conference on Entrepreneurship, Innovation and SMEs (G-Forum), Stuttgart, Germany, October 10-12, 2018; 4th Annual Entrepreneurship as Practice Conference (EAP4), Nantes, France, April 3-6, 2019; Entrepreneurship Theory and Practice Paper Development Workshop, Boston, USA, June 4, 2019; 39th Babson College Entrepreneurship Research Conference (BCERC), Boston, USA, June 5-8, 2019; 23rd Annual Interdisciplinary Conference on Entrepreneurship, Innovation and SMEs (G-Forum), Vienna, Austria, September 25-27, 2019; <u>PhD courses:</u> <ul style="list-style-type: none"> VHB-ProDok-Course: Applied Regression Analysis, ESMT Berlin, May 15-18, 2018; <u>Awards:</u> <ul style="list-style-type: none"> Nomination for the Entrepreneurship Research Newcomer Award 2019 at the 23rd G-Forum 	Christian Granz 70 % Eva Lutz 20 % Marisa Henn 10 %
Essay 3	Submitted to <i>Qualitative Research in Financial Markets</i> (July 28, 2020)	<u>Conferences:</u> <ul style="list-style-type: none"> 11th International Research Meeting in Business and Management (IRMBAM), Nice, France, July 2-4, 2020 (accepted for presentation; conference canceled due to coronavirus) <u>PhD courses:</u> <ul style="list-style-type: none"> 13th International Research Workshop (Qualitative Interviewing, Case Study Research), Helmut Schmidt University, Flensburg, Germany, September 15-20, 2019; EDEN Doctoral Seminar on Case Studies in Business and Management Research, Aalto University, Helsinki, Finland, December 1-5, 2019 	Christian Granz 100 %

B. Essay 1: Research on venture capitalists' and business angels' investment criteria: A systematic literature review²

1. Introduction and motivation

Venture capitalists (VCs) and business angels (BAs) operate in a hazardous environment characterized by substantial asymmetric information and agency issues (Fiet, 1995; Van Osnabrugge, 2000). Examining how VCs and BAs carefully screen and select their investment targets to reduce information asymmetries, previous research has found conflicting results. For instance, research indicates that both VCs and BAs place a major emphasis on the entrepreneurial team and their experiences (e.g., Franke, Gruber, Harhoff, & Henkel, 2006; Haines et al., 2003; Mason & Harrison, 1996). In contrast, the literature is contradictory as to whether both investor types focus even more heavily on the attractiveness of the business opportunity rather than the quality of the management team (e.g., Hall & Hofer, 1993; Kaplan, Sensoy, & Strömberg, 2009; Mitteness, Baucus, & Sudek, 2012).

Overall, the literature body in this research field is unstructured and heterogeneous because of the large number of publications and inconsistent results. This strand of literature lacks a conceptual framework that systematizes and categorizes the empirical-quantitative and empirical-qualitative findings of VCs' and BAs' investment criteria research. Therefore, the current paper addresses the debate on VCs' and BAs' investment criteria by investigating how VCs and BAs evaluate new ventures and determining which characteristics of the entrepreneurs and the new ventures result in a positive funding decision for both VCs and BAs.

Against this backdrop, we adopted a systematic literature review. We identified and reviewed 54 articles on VCs' and BAs' investment criteria from the early 1970s to 2017.³ Our

² Authors: Granz, C., Henn, M. and Lutz, E.

Published in Moritz A., Block J., Golla S., Werner A. (eds) *Contemporary Developments in Entrepreneurial Finance*. FGF Studies in Small Business and Entrepreneurship. Springer, Cham, S. 105-136.

³ We did not address bank-affiliated (De Bettignies & Brander, 2007; Hellmann et al., 2008; Ueda, 2004), corporate (Souitaris & Zerbinati, 2014), or philanthropic VCs (Scarlata, Zacharakis, & Walske, 2016).

review enabled us to categorize the literature on VCs' and BAs' investment criteria into three main investment criteria groups: i) *the management team*, ii) *the business*, and iii) *financial traction*. Our research supports the findings of previous studies that VCs prioritize business and financial traction because of their limited partners' return expectations (e.g., Baum & Silverman, 2004; Kaplan et al., 2009; Mason & Stark, 2004). Nonetheless, the relevance of the management team in VCs' funding decisions is not to be underestimated. On the other hand, the angel industry primarily focuses on the entrepreneurial management team, whose relevance as an investment criterion is explained by BAs' motivation to build personal relationships with the entrepreneurs and to share personal experiences that help reduce information asymmetry. Overall, these findings were in line with the agency view (Fiet, 1995; Hsu et al., 2014; Van Osnabrugge, 2000). These differences in investment decision policies can be determined by investigating information asymmetries and agency risks structured into VC and BA deals. Beyond that, based on the prevailing literature, we identified shortcomings and new research streams to be investigated in the future.

We offer two contributions to the extant research. First, we lay out our review to provide an overview of the ongoing research debate on VCs' and BAs' investment criteria (e.g., Bernstein et al., 2017; Hsu et al., 2014; Mason & Stark, 2004). Previous literature has primarily focused on the decision criteria of single investor types (e.g., VCs (Franke et al., 2006; Macmillan et al., 1985) and BAs (Carpentier & Suret, 2015; Sudek, 2006)). We detected academic gaps in this debate by systematizing and categorizing the pertinent literature strands on both VCs' and BAs' decision criteria into a framework. In this regard, we identified and reviewed both quantitative and qualitative literature and attempted to correct the lack of conceptual clarity between the research strands on VCs' and BAs' investment criteria. To the best of our knowledge, this article is the first systematic literature review to holistically consider investment criteria within the VC and BA industries. Second, our review proposes certain

opportunities for future research by capitalizing on the inconsistencies and deficiencies within our literature body; in doing so, we are able to provide detailed research avenues. We present these directions for future research by proposing research gaps, possible research questions, and suggestions for suitable methodological approaches.

Our paper proceeds as follows. In section 2.1, we offer an overview of our review approach. We use an agency lens to construct our conceptual framework in section 2.2. Section 2.3 presents a descriptive analysis of the literature body and section 2.4 systematizes and categorizes pertinent academic publications. Section 3 addresses the paper's limitations, and section 4 provides grounds for future research. Finally, section 5 lays out our study's conclusions.

2. Review of prior literature on VCs' and BAs' investment criteria

2.1 Review approach

We conducted the literature search between October and December 2017. For our systematic review, we adopted the following approach to ensure completeness, consistency, and transparency (Tranfield, Denyer, & Smart, 2003; Webster & Watson, 2002):

We defined several keywords before starting our Internet search for publications. We included the words "venture capital", "venture capitalists", "formal investors", "business angels", "informal investors", "angel investors", and "early-stage investors" and combined them with the terms "investment decision criteria", "investment criteria", "investment decision making", and "investment decision policies" when searching for titles, abstracts, keywords, and introductions of articles. We used several literature sources to ensure a comprehensive selection of academic articles: First, we started our search using EBSCOhost via the Business Source Premier and ScienceDirect databases. Second, we employed issue-by-issue searches when

examining relevant academic journals.⁴ Third, we manually searched for relevant literature via references from previous publications. Finally, we screened Google Scholar and SSRN to find further publications. Because of the high number of empirical-quantitative and empirical-qualitative publications from top-ranked academic journals identified during the first three steps of our literature identification process, we decided to exclude working papers and non-academic articles (Köhn, 2018). Furthermore, we excluded other literature reviews and conceptual-theoretical articles to form a rigorous, evidence-focused literature body.

We focused on the early 1970s to 2017 to define the widest possible time boundary for our research topic. A publication by Wells (1974) was the first one on VCs' investment criteria that differentiates between successful and unsuccessful new ventures, thus marking the beginning of our time span. Finally, our review approach is biased toward English language literature only to maintain a standard of high quality (e.g., Podsakoff, Mackenzie, Bachrach, & Podsakoff, 2005).

In sum, the initial application of our literature identification process yielded 197 potentially relevant publications. To narrow them down, we defined inclusion criteria to determine the final studies for our review. We included i) publications focusing on early-stage investors, ii) publications that analyze the investment criteria of VCs and/or BAs, and iii) publications focusing on investment decision-making, behaviors, and policies in both the VC and the BA industries. Using EBSCOhost and ScienceDirect, we identified 143 potentially relevant publications. Applying our inclusion criteria, we retained 40 articles for the literature review. The issue-by-issue search, as well as the search via references from previous articles, enabled us to find 14 additional articles. Ultimately, we ended up with 54 publications published

⁴ We looked for field-relevant journals only as Moritz and Block (2016) did in their literature review on crowdfunding. Among others, the most frequently cited journals in our review included the *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, the *Journal of Venture Capital*, the *Journal of Finance*, the *Academy of Management Journal*, and *Management Science*.

between 1974 and 2017 being relevant for our analysis, which is a comparable size to other literature reviews in entrepreneurial finance (e.g., Klotz, Hmieleski, Bradley, & Busenitz, 2014; Politis, 2008).

Finally, we used a twofold approach for our analysis of the literature: In the first step, we read and classified all 54 articles. We started by sorting the literature into VC-based studies, BA-based studies, or studies focusing on both. In the second step, we reexamined all the articles to extract various kinds of investment criteria. We compared and contrasted different investment criteria and then critically reflected upon their similarities and differences (Wood & McKelvie, 2015).

2.2 A comprehensive framework based on agency theory

After identifying the relevant publications that address VCs' and BAs' investment criteria, we first developed a theoretical framework by adopting agency theory (Eisenhardt, 1989a; Jensen & Meckling, 1976).⁵ Agency problems and associated costs are attributed to the following three cases: i) the delegation of work from principal to agent (Jensen & Meckling, 1976), ii) the goal conflict between principal and agent (Eisenhardt, 1989a), and iii) the information asymmetries between principal and agent, resulting in limited opportunities for the former to monitor the latter (Eisenhardt, 1989a; Shapiro, 2005). Agency theory has been a frequently used instrument in venture capital literature (Arthurs & Busenitz, 2003; Van Osnabrugge, 2000), as earlier studies confirmed goal conflicts between VCs (principal) and entrepreneurs (agent) (Amit, Brander, & Zott, 1998; Fiet, 1995). This goal conflict exists because VCs aim to maximize their overall portfolio return whereas entrepreneurs seek to maximize the return of their own venture (Van Osnabrugge, 2000). When VCs invest in new ventures, they face high market risk and an opportunistic behavior by the entrepreneur (Fiet, 1995). VCs use portfolio investments and

⁵ We followed the approach by Hsu et al. (2014), who theoretically derived VCs' and BAs' focus on investment criteria by relying on agency theory to find attributes for their conjoint analysis.

syndication as tools to lower their market risk exposure (Fiet, 1995; Zacharakis & Meyer, 2000) while reducing the entrepreneur's opportunistic behavior through stage compensation and funding arrangements (Ibrahim, 2008). For example, this is implemented by screening and monitoring VCs' portfolio firms based on sophisticated contracts to control decision-making in portfolio firms (Gompers, 1995).

BAs primarily aim to use their knowledge and skills to help the entrepreneur become successful whereas VCs invest money for their limited partners and seek to maximize portfolio returns (Arthurs & Busenitz, 2003; Mason & Harrison, 2002b). Agency problems in the angel-entrepreneur dyad partly exist because of the low level of sophistication of angel contracts, which makes it difficult to verify information (Fiet, 1995; Van Osnabrugge, 2000). Fiet (1995) argued that information asymmetries in the angel-entrepreneur dyad increase BAs' exposure to human risk compared to market risk. Thus, angels faced relatively high information asymmetries related to the management team rather than market-related factors. Therefore, it is particularly important for BAs to monitor the entrepreneur on a personal level (Van Osnabrugge, 2000).

Agency theory assumes that the principal tries either to lower the goal conflict with the agent or to use control mechanisms to verify information provided by the agent so that the agent acts in accordance to their interest (Eisenhardt, 1989a). Consequently, VCs and BAs may use either behavior-oriented control mechanisms to observe and monitor the agent's behavior or outcome-oriented mechanisms to provide the agent with incentives for certain behavioral outcomes (Eisenhardt, 1989a).

VCs invest on a portfolio basis (Gompers & Lerner, 2001) and they are not deeply engaged in the daily operations of their portfolio firms (Wright & Robbie, 1998). Against this backdrop, VCs implement contractual milestones for their portfolio firms that entrepreneurs

need to successfully meet (Gompers, 1995); otherwise (staged) capital injections are declined (Hellmann, 1998). Therefore, it is argued that VCs' control mechanisms are primarily outcome-oriented (focusing on the business and its financials) than behavior-oriented (focusing on the entrepreneurial team), especially when the goal conflict is large, as this enables VCs to efficiently align goal interests between the VC and the entrepreneur (Eisenhardt, 1989a).

Unlike VCs, angels encounter problems verifying information provided by the entrepreneur (Van Osnabrugge, 2000). Although some angel investors conduct due diligence, the average information content is to be less extensive as that of VCs, who have much more opportunities to extract information from the broad operational and financial network of their portfolio firms (Brander, Amit, & Antweiler, 2002; Prowse, 1998). This shows the difference in VCs that information asymmetries in the angel-entrepreneur dyad cannot usually be reduced through due diligence. Prowse (1998) argues that angel investors prefer entrepreneurs they know well, trust, and work with when screening investment targets. Therefore, BAs rely on behavior-oriented tools to reduce information asymmetries, confirming that they are more concerned about human factors compared to VCs, who focus more on the economic outcome of an investment to meet their limited partners' return expectations (Hsu et al., 2014). Based on behavior-oriented and outcome-oriented control mechanisms used for early-stage investments, we formulated these three main investment criteria groups that VCs and BAs focus on to systematize and categorize the literature on early-stage investors' investment criteria: *i) the management team, ii) the business, and iii) financial traction.*

2.3 Descriptive literature analysis

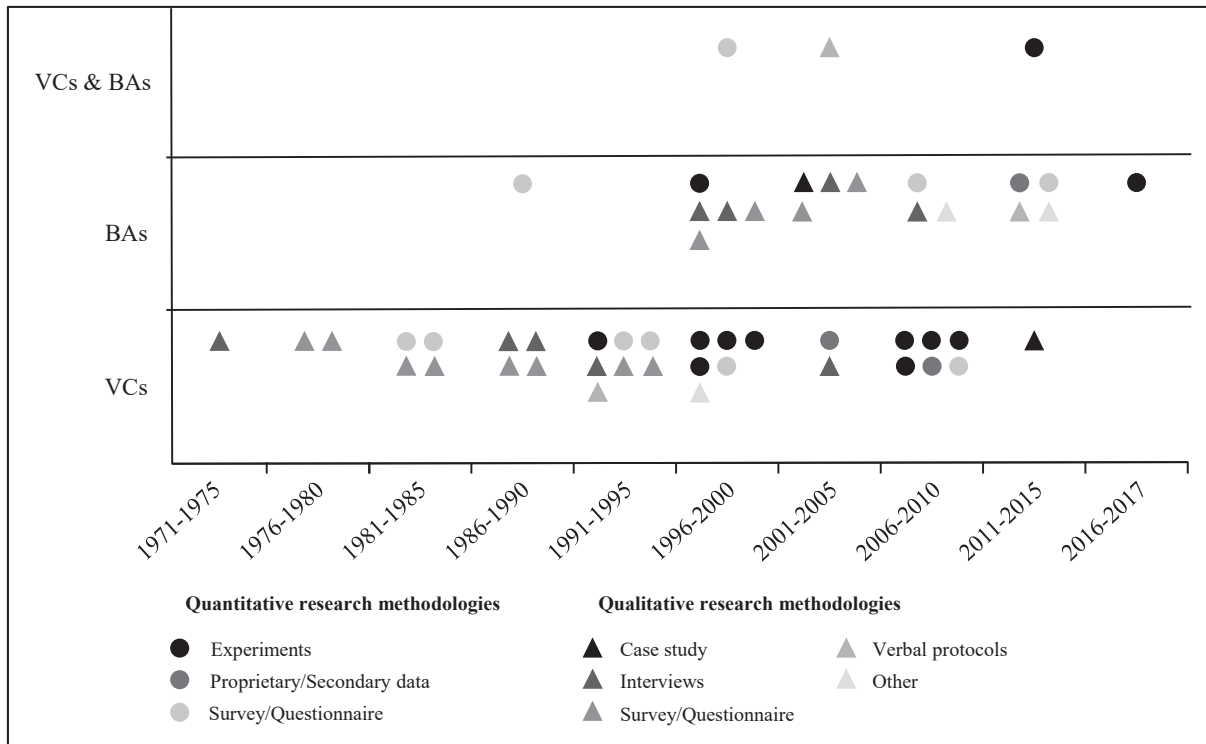
The 54 articles relevant to our systematic review were published between 1974 and 2017. More than half of our literature body (N=26) was published in the *Journal of Business Venturing* (N=17) and in the *Journal of Venture Capital* (N=9). Table B-1 and Figure B-1 present descriptive statistics for our body of research articles.

Table B-1: Descriptive statistics of the literature body

Number of publications	VCs		BAs		VCs & BAs		Total	
	absolute	in %	absolute	in %	absolute	in %	absolute	in %
Panel A: Period								
1974-1980	3	9.09	-	-	-	-	3	5.56
1981-1990	8	24.24	1	5.55	-	-	9	16.67
1991-2000	13	39.39	5	27.78	1	33.33	19	35.19
2001-2010	8	24.24	7	38.89	1	33.33	16	29.62
2011-2017	1	3.03	5	27.78	1	33.33	7	12.96
Σ	33	100	18	100	3	100	54	100
Panel B: Methodology								
Quantitative	17	51.52	6	33.33	2	66.67	25	46.30
Qualitative	16	48.48	12	66.67	1	33.33	29	53.70
Σ	33	100	18	100	3	100	54	100
Panel C: Countries								
U.S.	15	45.45	5	27.78	1	33.33	21	38.89
U.K.	2	6.06	4	22.22	2	66.67	8	14.81
Canada	2	6.06	5	27.78	-	-	7	12.96
Australia	2	6.06	1	5.55	-	-	3	5.56
Europe	3	9.09	-	-	-	-	3	5.56
Asia	2	6.06	-	-	-	-	2	3.70
Spain	1	3.03	-	-	-	-	1	1.85
Germany	-	-	1	5.55	-	-	1	1.85
Portugal	1	3.03	-	-	-	-	1	1.85
Sweden	-	-	1	5.55	-	-	1	1.85
Multiple	3	9.09	1	5.55	-	-	4	7.41
N/A*	2	6.06	-	-	-	-	2	3.70
Σ	33	100	18	100	3	100	54	100

Note: Minor differences from rounding may occur in the disclosure of relative weights. N=54. (*Not applicable due to missing specifications.)

Figure B-1: Research methodologies



Note: This figure provides an overview of the type of research methodologies used over time, clustered by investor type. N=54.

Panel A describes the distribution of articles on VCs' and BAs' investment criteria over time. The first wave of literature (between 1980 and 1995) mainly focused on VCs and was primarily empirical-qualitatively driven. At that time, equity financing industry had become more important, as new rules for institutional investors were introduced in the U.S. and the U.K. (Gompers & Lerner, 2004a). However, articles that built upon post-interviews have often been criticized for problems arising from retrospective and self-reporting biases (Shepherd & Zacharakis, 1999). Since the mid-1990s, empirical-quantitative research has evolved, especially for articles that focused solely on VCs' investment criteria. This progress reflects the growing role of VCs in financial intermediation and is thus indicative of the increasing access to data that enables sophisticated data analyses in this field (Bottazzi & Da Rin, 2002; Gompers & Lerner, 2004a).

Overall, the literature body on VCs' and BAs' investment criteria features a transition in methodologies. Panel B and Figure 1 present evidence suggesting a trend from descriptive studies (market-based and practice-oriented studies, descriptive, profile-focused) to more analytical studies (quantifiable, theory-oriented, behavior-driven, post-investment relationship-focused). The first publications in our research field merely investigated investment criteria via questionnaires with a descriptive appraisal. Later publications (from the early 1990s) used more experimental methodologies for data analysis (e.g., conjoint analysis) to overcome problems of post-hoc biases.⁶ Researchers have applied a balanced range of quantitative and qualitative methodologies to investigate the phenomenon of VCs' and BAs' investment criteria. Regarding trends over the investigation period, we found that more than half (~52%) of all publications exclusively focused on VCs utilized quantitative research methods. Meanwhile, 66.67% of articles addressing BAs utilized qualitative approaches.

Finally, Panel C presents the literature body's distribution across countries. Most datasets focus on the U.S. (~39%) (e.g., Chen, Yao, & Kotha, 2009), the U.K. (~15%) (e.g., Mason & Stark, 2004), and Canada (~13%) (e.g., Knight, 1994a), and numerous studies analyzing investment behavior in these three regions used qualitative research methods (~61%). The small number of publications using continental European (e.g., Knockaert, Clarysse, & Wright, 2010) or Asia-Pacific (e.g., Rah, Jung, & Lee, 1994) datasets may indicate an inferior database on VCs' and BAs' investment criteria in these regions.

2.4 Literature systematization and categorization

The following thematic analysis of our literature body on VCs' and BAs' investment criteria refines the dispersed opinions of the previous entrepreneurial finance studies on this topic. A

⁶ These kinds of biases may arise from respondents' stimulus to bias results (Feldman & March, 1981), perceptual and cognitive restrictions (Nisbett & Ross, 1980), and variability, depending on the data collection method (Muzyka, Birley, & Leleux, 1996; Riquelme & Rickards, 1992; Shepherd, Ettenson, & Crouch, 2000).

considerable number of articles has been published on VCs' investment criteria, but no apparent consensus has been found regarding which criteria dominate their investment policies. BAs' investment criteria differ from those of their opposing institutional investment community (Hsu et al., 2014; Mason & Harrison, 1996; Van Osnabrugge, 2000). The BAs' decision model is rather narrow and parsimonious, resembling decision heuristics compared to the VC approach, wherein funding decisions are based on a more holistic decision model (Maxwell et al., 2011). We analyzed research material on VCs' and BAs' investment criteria on the following three main investment criteria groups: i) *the management team*, ii) *the business*, and iii) *financial traction*. Tables B-2, B-3, and B-4 provide an overview of the main studies on VCs' and BAs' investment criteria discussed in this paper.

Table B-2: Selected studies on investment criteria research (VCs)

Study (year)	Geographic focus	Methodology	Sample Size	Key criteria Management Team	Business	Financial Traction
Baum and Silverman (2004)	Canada	Quantitative (Secondary data)	675 investment decisions		X	
Boocock and Woods (1997)	U.K.	Qualitative (Archival records)	1 VC		X	
Chen et al. (2009)	U.S.	Quantitative (Field/ laboratory experiment)	55 VCs	X		
Dixon (1991)	U.K.	Qualitative (Survey)	30 VCs	X		
Franke et al. (2006)	Germany, Austria	Quantitative (Conjoint analysis)	51 VCs	X		
Franke et al. (2008)	Germany, Austria	Quantitative (Conjoint analysis)	51 VCs	X		
Fried and Hisrich (1994)	U.S.	Qualitative (Interviews; questionnaire)	18 VCs	X	X	X
Hall and Hofer (1993)	U.S.	Qualitative (Verbal protocols)	4 VCs, 16 protocols	X	X	X
Hisrich and Jankowicz (1990)	N/A*	Qualitative (Interviews)	5 VCs	X		
Johnson (1979)	U.S.	Qualitative (Survey)	49 VCs	X		
Kaplan et al. (2009)	U.S.	Quantitative (Secondary data)	50 VCs	X	X	
Knight (1994a)	Canada, Asia Pacific, Europe	Quantitative (Survey)	134 VCs	X		
Knight (1994b)	Canada	Quantitative (Survey)	128 VCs	X		
Knockaert et al. (2010)	Europe	Quantitative (Conjoint analysis)	68 VCs	X	X	X
Macmillan et al. (1985)	U.S.	Quantitative (Questionnaire)	100 VCs	X		
Muzyka et al. (1996)	Europe	Quantitative (Conjoint analysis)	73 VCs	X		
Petty and Gruber (2011)	Europe	Qualitative (Exploratory case study)	1 VC	X	X	
Pintado et al. (2007)	Spain	Quantitative (Questionnaire)	51 VCs	X		
Poindexter (1976)	U.S.	Qualitative (Questionnaire)	97 VCs			X
Rah et al. (1994)	Korea	Qualitative (Survey)	74 VCs	X		X
Rea (1989)	U.S.	Qualitative (Questionnaire)	18 VCs		X	
Riquelme and Rickards (1992)	N/A*	Quantitative (Conjoint analysis)	13 VCs	X	X	
Robinson (1987)	U.S.	Qualitative (Questionnaire)	53 VCs			X

Note: This table presents all studies solely focusing on VCs' investment criteria. It lists relevant descriptive parameters and shows, which key criteria the respective study places the greatest emphasis on. N=33. Eight studies include evidence on more than one key criterion. (*Not applicable due to missing specifications.)

Table B-3: Selected studies on investment criteria research (BAs)

Study (year)	Geographic focus	Methodology	Sample Size	Key criteria Management Team	Business	Financial Traction
Bacher and Guild (1996)	Canada	Qualitative (Questionnaire)	20 BAs	X		
Bernstein et al. (2017)	U.S., U.K., Canada, Australia	Quantitative (Experiment)	2,295 BA investment decisions	X		
Brush et al. (2012)	U.S.	Quantitative (Proprietary dataset)	332 BA proposals	X	X	
Cardon et al. (2009)	U.S.	Quantitative (Survey; video analysis)	150 BAs; 60 video presentations by BAs	X		
Carpentier and Suret (2015)	Canada	Qualitative (Longitudinal analysis)	85 BAs, 636 proposals	X	X	
Feeney et al. (1999)	Canada	Qualitative (Interviews)	153 investment decisions	X	X	
Haar et al. (1988)	U.S.	Quantitative (Survey)	130 BAs	X		
Haines et al. (2003)	Canada	Qualitative (Interviews)	51 BAs	X	X	
Hindle and Wenban (1999)	Australia	Qualitative (Questionnaire)	36 BAs	X		X
Landström (1998)	Sweden	Quantitative (Conjoint analysis; questionnaire)	44 BAs	X	X	
Mason and Harrison (1996)	U.K.	Qualitative (Interviews)	31 BAs	X		
Mason and Harrison (2002a)	U.K.	Qualitative (Questionnaire)	74 BAs		X	
Mason and Harrison (2003)	U.K.	Qualitative (Real-time case study)	30 BAs	X		
Maxwell et al. (2011)	Canada	Qualitative (Verbal protocols)	150 BAs	X	X	X
Mittness et al. (2012)	U.S.	Quantitative (Questionnaire)	57 BAs, 159 proposals	X	X	
Paul et al. (2007)	U.K.	Qualitative (Interviews)	30 BAs	X		
Stedler and Peters (2003)	Germany	Qualitative (Questionnaire)	232 BAs	X	X	
Sudek (2006)	U.S.	Qualitative (Participant observation)	72 BAs	X		

Note: This table presents all studies solely focusing on BAs' investment criteria. It lists relevant descriptive parameters and shows, which key criteria the respective paper places the greatest emphasis on. N=18. Nine studies include evidence on more than one key criterion.

Table B-4: Selected studies on investment criteria research (VCs & BAs)

Study (year)	Geographic focus	Methodology	Sample Size	Key criteria Management Team	Business	Financial Traction
Hsu et al. (2014)	U.S.	Quantitative (Conjoint analysis)	50VCs 31 BAs	X		X
Mason and Stark (2004)	U.K.	Qualitative (Verbal protocols)	3 VCs 4 BAs	X	X	X
van Osnabrugge (2000)	U.K.	Quantitative (Questionnaire)	119 VCs 143 BAs	X	X	X

Note: This table presents all studies focusing on both VCs' and BAs' investment criteria. It lists relevant descriptive parameters and shows, which key criteria the respective paper places the greatest emphasis on. N=3. Two studies include evidence on more than one key criterion for the respective investor type.

2.4.1 Investment criteria regarding the “management team”

Venture capitalists. With regard to the funding of new ventures, the literature reveals that the management team, or rather the entrepreneur, are salient factors for VCs' investment decisions (Franke et al., 2008; Fried & Hisrich, 1994; Johnson, 1979; Knockaert et al., 2010; Macmillan et al., 1985; Pintado et al., 2007; Shepherd, 1999a; Shepherd et al., 2000; Tyebjee & Bruno, 1984; Wells, 1974; Zutshi, Tan, Allampalli, & Gibbons, 1999). Drawing on cognitive theory, an experienced management team is a crucial decision criterion that VCs employ when assessing new venture proposals (Shepherd, Zacharakis, & Baron, 2003). The evaluation of human capital involves predictions regarding the management team's performance (Smart, 1999). Hence, VCs appreciate an experienced management team because experience can moderate the future failure risk of an investment and, in turn, increases the future returns VCs might earn through exits (Dixon, 1991). Furthermore, to investigate and pass investment proposals through the due diligence process, VCs expect entrepreneurs to use their management experience for specific sectors. VCs do not classify managerial experience into a subset of criteria of the compensatory process (Riquelme & Rickards, 1992). Thus, the experience of the management team cannot be compensated by the high value of another criterion.

Moreover, industry-related experience (Muzyka et al., 1996) outweighs other investment criteria, such as the field and level of education, relationships among team members, experience in leading teams, prior job experience, and age of team members (Franke et al., 2008). Both industry-specific experience and domain-specific expertise (e.g., in high-technology sectors such as biotechnology or financial technology) allow VCs to assess the viability of the new venture's product range and business model (Chemmanur, Hull, & Krishnan, 2016). VCs prioritize the connections among entrepreneurs within the same industry (Muzyka et al., 1996) to ensure that VCs know when to bail out, if necessary, and how to do so (Macmillan et al., 1985). These findings are also in line with those by Franke et al. (2008), who

conducted a conjoint experiment with 51 German and Austrian professionals in VC firms. They reported that both novice and experienced VCs consider industry experience as their central investment criterion. Although no differences were found in the top three investment criteria between novice and experienced VCs, their ratings differed for lower-ranked criteria. For instance, mutual acquaintance within the entrepreneurial team (professional or private relationships within the team prior to the new venture foundation) is ranked highly by experienced VCs, while novice VCs rank it one of the lowest criteria. Novice VCs tend to focus more on the qualifications of the team whereas experienced ones focus more on team cohesion. This variation in different criteria weights shows that a consensus on investment criteria—what constitutes a well-functioning team—does not exist.

Furthermore, there is an effect of complementary capabilities within the management team (Franke et al., 2008). VCs focus on dispersed competencies within the team whereas the distribution is irrelevant. If a certain competence is not represented by any team member, a knockout effect will emerge, meaning the VC investor would directly disregard this entrepreneurial team. However, the effect of complementary capabilities within the management team challenges Byrne's (1971) similarity hypothesis, which states that the more similar a person is to another, the more positively that individual assesses that person. Considering the interaction between VCs and entrepreneurs, a similarity bias reveals that VCs systematically deviate from their ratings when screening proposals (Franke et al., 2006). For example, VCs who have worked for start-ups or large firms tend to select management team members with professional experience similar to their own. This hypothesis also holds true for educational background. Even though a similarity bias among VCs may exist, VCs aim to diversify the management teams of portfolio companies in terms of educational backgrounds, thus generating some team heterogeneity. Expanding on this, VCs trade off certain team

characteristics for a lack of another characteristic, which can take the effect of a penalty, resulting in the failure of the investment proposal in the screening process (Franke et al., 2008).

The evidence available so far indicates why VCs value the experience criterion of a management team: Research shows that an experienced management team contributes to the expansion of a new venture, especially in later stages, when tasks and responsibilities become more complex and heterogeneous (Robinson, 1987). However, there is contradicting evidence on later-stage firms, that is, if the new venture's critical resources are its human assets, the management team is important in differentiating one venture from another (Rajan, 2012; Wernerfelt, 1984), particularly if the new venture is in its early stages and needs to justify its existence to investors (Kerr, Nanda, & Rhodes-Kropf, 2014).

Moreover, VCs' funding decisions also depend on soft criteria, especially when assessing the management team. They expect new ventures' management teams to demonstrate cognitive characteristics (e.g., realism, problem-solving abilities), have certain personality traits (e.g., interpersonal skills, integrity) and to fulfill motivational variables (e.g., personal drive, power) (Schefczyk & Gerpott, 2001). Additionally, using verbal protocol analysis, Hall and Hofer (1993) investigated subjective investment criteria that are crucial for funding decisions and which particularly affect the VC-entrepreneur relationship. For example, the ability to cooperate, as well as the relationship between VCs and entrepreneurs, influences VCs' decision-making process. In accordance with this, the entrepreneur's ability to recognize risks (Macmillan et al., 1985), tenacity, and ability to communicate (Knight, 1994a) are further significant criteria in VCs' assessment of management teams. For example, the ability to recognize and manage risk is essential for new ventures to counteract turbulent market environments (Dubini, 1989). Consequently, a multi-disciplinary team—characterized by the entrepreneur's staying power, ability to handle risk, familiarity with the business, and

leadership ability—is what VCs postulate from investment proposals (Knight, 1994a, 1994b). Furthermore, VCs also try to evaluate the degree of the entrepreneur's commitment and thorough understanding of the business idea (Silva, 2004). Criteria such as entrepreneurial passion, which the VCs might sense during business plan presentations, influence their funding decisions. During business plan presentations, VCs distinguish between entrepreneurial passion and preparedness. The former is conveyed through facial expressions and body language whereas the latter is demonstrated through the verbal content and substance of the presentation. Ultimately, preparedness has a more significant influence than passion on VCs' funding decisions (Chen et al., 2009). Additionally, personal construct psychology confirms the dependency of VCs' investment decisions on soft facts such as interpersonal chemistry or the pragmatism of the entrepreneurs rather than their creativity (Hisrich & Jankowicz, 1990). Hence, these fine-grained investment criteria affirm the challenge VCs face when evaluating managerial capability as part of the venture selection process (Rah et al., 1994).

Business angels. A large number of scholars have investigated the impact of the management team on BAs' investment decisions. Among those, Bernstein et al. (2017) conducted a randomized field experiment among U.S., U.K., Canadian, and Australian angel investment decisions to illustrate how the average angel focuses on the founding team and disregards other information such as financial traction. Investigating 44 Swedish BAs in a conjoint experiment, the work of Landström (1998) confirmed the importance of the compatibility between the entrepreneur and the investor as a decision-making criterion.

Alongside the different stages in the decision heuristics angels go through prior to an investment, a large angel financing group provides evidence that during the desk rejection stage, BAs frequently rely on quantifiable and tangible investment criteria (Brush et al., 2012; Maxwell et al., 2011). For instance, BAs evaluate the entrepreneur's organizational readiness,

that is, whether key management roles are filled. However, as it has a significant positive effect on the desk rejection stage, the size of top management negatively influences BAs' investment decisions in the later investment stages, such as in later negotiations. Moreover, during the final stage of the funding process, BAs employ further subjective and intangible decision criteria. When they start investigating less quantifiable intangible decision criteria, such as the entrepreneur's trustworthiness (Sudek, 2006), personal commitment to the new venture (Cardon et al., 2009; Erikson, 2002), passion (Cardon et al., 2009; Chen et al., 2009), and persuasiveness (Mason & Harrison, 2003), BAs increase their standard of scrutiny and analysis (Brush et al., 2012).

Finally, when BAs face an investment decision, they are likely to invest their private funds into early-stage firms based on soft decision heuristics, meaning they primarily focus their investment decisions on the entrepreneur or rather, the investor fit (Landström, 1998; Mason & Stark, 2004). Investigating management team characteristics enables the investor to draw conclusions about the new venture's quality information, which can influence the investment decision (Bachher & Guild, 1996; Hindle & Wenban, 1999). Because of their investment objectives and decision policies, BAs place greater emphasis on agency risk compared to VCs (Fiet, 1995). Agency risk affects BAs more than VCs because a missing institutional setting prevents the smooth exchange of information between the angel and the entrepreneur, thus rendering the angel more sensitive to agency risk than to market risk (Fiet, 1995; Van Osnabrugge, 2000). In turn, this finding confirms the classification of BAs as hands-on investors because they focus on personal relationships with the entrepreneur, therefore placing greater weight on the management team (Fiet, 1995; Van Osnabrugge, 2000). Hence, it is the "chemistry" (Mason & Stark, 2004) between entrepreneurs and the BAs themselves that BAs place particular focus on during the investment process.

Recently, scholars have acknowledged the importance of entrepreneur trustworthiness, management team quality (e.g., passion, commitment), enthusiasm (Cardon et al., 2009; Sudek, 2006), and affective passion (Hsu et al., 2014) in BAs' investment decisions. This phenomenon can be explained by BAs' perception of the influence of entrepreneurs' commitment and enthusiasm on new ventures' success. Not only does the entrepreneur's trustworthiness matter, but angels are also more likely to invest if they receive referrals for new ventures from trusted sources (Harrison, Dibben, & Mason, 1997). Additionally, Haines et al. (2003) examined expert interviews of 51 BAs and showed that BAs look for honest, ethically conscious entrepreneurs with a clear and rational understanding of how a new business might succeed. These kinds of soft decision factors play a more important role in the BA investment process than that of the VC because of the hands-on role BAs take in the investee venture (Mason & Stark, 2004; Paul et al., 2007). For instance, impression management is another key criterion for BAs to consider a new venture ready for funding (Mason & Harrison, 2003; Stedler & Peters, 2003). To seek funding, during their final presentations, entrepreneurs need to not only convince angels of their management competencies and their business idea but also impress the angel committee with the style, content, and structure of the presentation. However, these findings stand in contrast to those of Haar et al. (1988), who found that angels should not focus too much on sales pitches when presentations primarily focus on the product or on the protection of intellectual property.

In sum, the "management team" investment criterion may be less important to VCs compared to the BA industry. BAs prefer to focus their investment decisions on the entrepreneurial management team, as this careful selection allows them to mitigate their behavior-oriented agency problems (Ibrahim, 2008). Because of the lack of an institutional setting in the angel industry, this behavior-oriented approach is much more important than for VCs, who primarily focus on outcome-driven mechanisms (Eisenhardt, 1989a). Furthermore,

BAs' hands-on investing style makes them more engaged emotionally compared to VCs, which results in a broader and deeper emphasis on their personal affiliation with the entrepreneur.

2.4.2 Investment criteria regarding the “business”

Venture capitalists. When selecting investment targets, VCs also place significant weight on the business along with the management team (Baum & Silverman, 2004; Kaplan et al., 2009; Petty & Gruber, 2011; Rea, 1989; Zacharakis & Meyer, 1998).

The “business” criterion entails both physical and non-physical assets, such as patent and intellectual property assets. The business idea and sustainable advantage—the new venture’s ability to secure its value-adds by protecting innovation—as well as growth potential are factors VCs extract from a business plan and evaluate (Silva, 2004). Likewise, the market that new ventures aim to gain a foothold in must offer unconstrained (Rea, 1989) and long-term profitable (Boocock & Woods, 1997; Hall & Hofer, 1993) growth opportunities.

Furthermore, VCs also consider the competitive surroundings of the new venture and the demonstrated market acceptance of the product as the two decisive criteria for determining a new venture’s success (Macmillan, Zemann, & Subbanarasimha, 1987). Hence, the quality of the business concept may be indicative of whether the new venture can achieve substantial competitive advantage (Fried & Hisrich, 1994; Hisrich & Jankowicz, 1990). Tyebjee and Bruno (1984) summarize this criterion as a resistance against general environmental threats. Because of the high competitiveness among early-stage ventures, numerous VCs focus on high-technology investments and in turn include technological progress as a criterion in their investment policies focusing on the business (Hsu et al., 2014). Finally, using secondary data, Baum and Silverman (2004) find that for a sample of 675 investment decisions in Canada, VCs are attracted by both start-ups with strong alliances to other ventures and those holding patents on their technological innovations. VCs act as “scouts” because they focus their investment

screening on promising technology rather than on the right management team. Subsequently, VCs assume the role of a “coach” by applying appropriate management skills when they find the right venture to invest in.

Business angels. BAs may also place emphasis on the market potential of the business and the overall business opportunity (Feeney et al., 1999; Haines et al., 2003; Landström, 1998). Based on verbal protocols with 150 Canadian BAs, findings by Maxwell et al. (2011) indicated critical business factors—summarizing a larger list of investment decision criteria—used as heuristics by angels to reduce the number of investment opportunities (elimination-by-aspects model): adoption, status, protectability, customer engagement, route-to-market, and market potential. The first three factors relate to the product. Adoption is important for BAs to assess how attractive the product is to potential customers (Feeney et al., 1999). Product status and protectability ensure an evaluation of a product’s market readiness (Mason & Harrison, 2002a) as well as its competitive positioning (Sudek, 2006). Additionally, angels look for competitive insulation during the early stages of a new venture, as competition has a negative effect on profits (Haar et al., 1988). The latter factors refer to the market. The critical factor of customer engagement enables BAs to evaluate whether the new venture’s customers are actively engaged in product development, which will ensure the business meets its value proposition (Mason & Stark, 2004). Finally, BAs appreciate large markets that allow the business to grow rapidly (Bachher & Guild, 1996).

Furthermore, angel investors place emphasis on the industry as well as the technological surroundings of the product or service. BAs prefer to invest in industries they feel familiar with and in which they have previously gathered experience, so that they can get involved in the business rather than simply gloss it over (Haar et al., 1988; Kelly & Hay, 1996). Industry knowledge therefore enables angel investors to realize the uniqueness of a new venture’s

product or service (Bachher & Guild, 1996; Hindle & Wenban, 1999). Hence, entrepreneurs' ventures should possess organizational, strategic, and especially technological readiness when seeking funding through angel investors. Beyond that, using a proprietary U.S. dataset on 332 angel proposals, Brush et al. (2012) found that intellectual property and protectability help new ventures proceed in the funding process. Finally, the location of the new venture is critical to angels' investment decision-making (Brush et al., 2012; Paul et al., 2007). Given that BAs like to get involved in new ventures' business by contributing their experience to the firm, angels prefer that new ventures be accessible (Mason & Rogers, 1997).

In sum, institutional investors may place more weight on the investment criterion "business"—compared to those in the angel industry—which may find support from the outcome-oriented control mechanisms to minimize their goal conflicts (Fiet, 1995). VCs see this criterion as the key to a new venture's success. The institutional setting where VCs operate in allows them to conduct a more profound due diligence than BAs. In doing so, VCs intensively focus on criteria such as growth potential, competitive surroundings, and market acceptance, as well as the technological progress of the product. In contrast, angels usually lack these detailed comparative data to assess market risk. Therefore, BAs merely evaluate the business in addition to its fit to their personal investment criteria regarding the management team (Mason & Stark, 2004).

2.4.3 Investment criteria regarding "financial traction"

Venture capitalists. The third group of criteria deals with the financial characteristics of new ventures, which influence VCs' investment decisions (Timmons, Muzyka, Stevenson, & Bygrave, 1987). In their conjoint analysis, Knockaert et al. (2010) identified three clusters VC investors focus on. One of these targets VCs that primarily focus their investments on financial conditions. Financial investors are keen on return on investment as well as on the growth and profitability forecasts the new venture might achieve, as one of VCs' objectives is to deliver

high returns to their investors (Mason & Stark, 2004). Next to the high rate of return, the time-to-exit opportunity plays an important role (Fried & Hisrich, 1994). VCs consider the latter criterion because the duration of the time-to-exit influences their returns (Armstrong, Davila, & Foster, 2006). In conjunction with VCs' expectations for the new venture's positive earnings performance, the cash-out factor (Tyebjee & Bruno, 1981; Tyebjee & Bruno, 1984) is an important criterion that VCs employ during their due diligence. VCs do not focus on new ventures where investments are locked up and cannot be cashed out for long periods. For instance, such a setup is relevant for products or services that have not yet fulfilled the proof of concept and entail an illiquid investment, thus not offering an easy cash-out opportunity (Macmillan et al., 1987). Because of the high risk that VCs take on, a certain liquidity of their investment is postulated (Poindexter, 1976; Robinson, 1987). Finally, research shows evidence that VCs set financially driven milestones for entrepreneurs and their ventures (Gompers & Lerner, 2001). Hsu et al. (2014) conducted a conjoint analysis with 50 U.S. VCs and showed that they place greater emphasis on the economic potential of a new venture because of their outcome-driven ex post control mechanisms, which are, in turn, based on the new venture's performance.

Business angels. In addition to non-financial investment criteria, BAs to some extent assess financial information that new ventures provide within their business plans, especially when the investment process proceeds from the initial screening to the next investment stage (Hindle & Wenban, 1999; Paul et al., 2007).

Even though BAs are also motivated by the capital gains from their investments, the satisfaction and pleasure derived from being involved in the entrepreneurial process prevails over both market and finance issues (Mason & Stark, 2004; Mason & Harrison, 2002a). Moreover, there is evidence by Dixon (1991) that VCs greatly employ financial investment

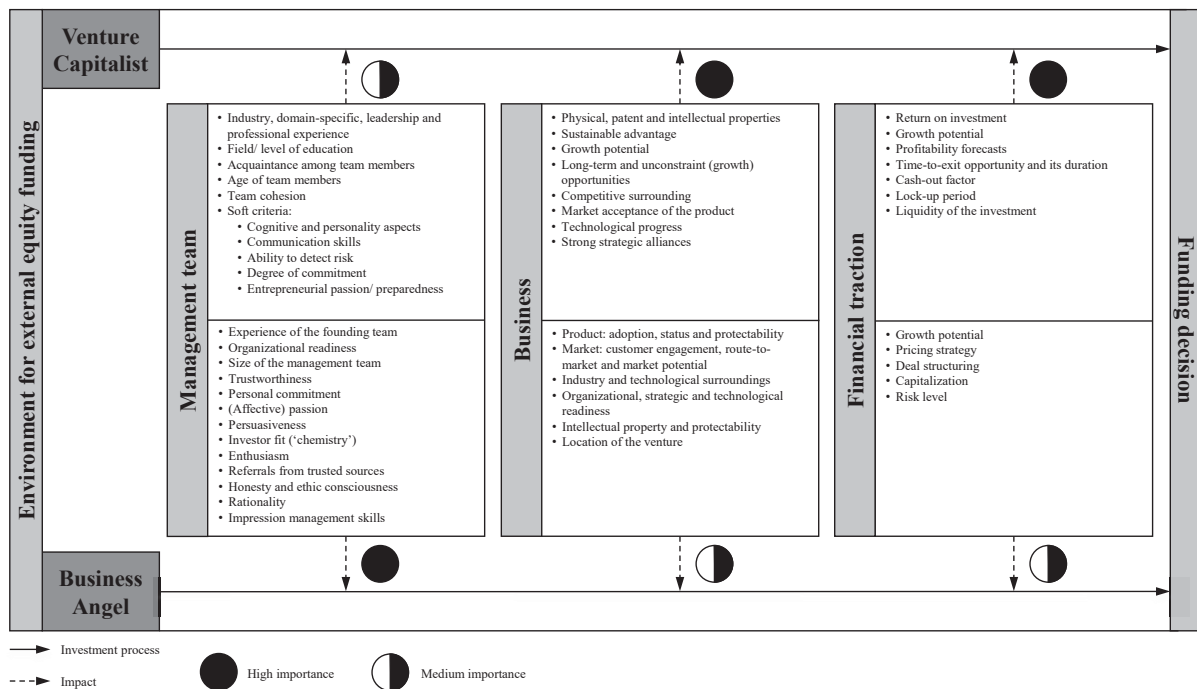
criteria and frequently conduct return calculations. In turn, BAs are rather cynical about the explanatory power of such financial predictions (Mason & Rogers, 1997). Beyond that, poor pricing strategy and deal structuring (Mason & Harrison, 1996), as well as the undercapitalization of the new venture (Feeney et al., 1999), are criteria for why entrepreneurs do not receive funding from angels.

Finally, although angels usually invest more in the early stages of business development compared to VC investors, they do not require greater financial compensation for this additional risk (Feeney et al., 1999). This follows from the fact that BAs are more likely to invest in businesses they are familiar with, thus, leading to BAs' awareness of an adequate risk level to bear (Freear, Grinde, & Wetzel, 1997). Yet, angels still face the uncertainty of agency risk because of the lack of an institutional setting compared to VCs (Fiet, 1995; Van Osnabrugge, 2000).

Regarding the investment criterion of "financial traction", institutional investors particularly focus on economic-driven outcomes (Hsu et al., 2014). They set these milestones for their investee ventures to apply outcome-oriented tracking instruments. In contrast, angels place less focus on economic potential, as this criterion cannot help decrease their information asymmetry and address the agency problem (Van Osnabrugge, 2000).

Finally, the large number of publications in which VCs' and BAs' investment criteria have been quantitatively and qualitatively investigated constitutes the importance of this unstructured and heterogeneous research field. Figure B-2 summarizes the main investment criteria VCs and BAs employ for their decision policies that have been discussed in this literature review.

Figure B-2: Conceptual framework



3. Limitations

This paper has revealed VCs' and BAs' investment criteria across the entrepreneurial finance literature body; however, it has some limitations that should be acknowledged. First, we only included published academic studies in our literature body to guarantee a high-quality review. However, other significant findings from working papers or non-academic publications may have been neglected. Second, we did not adopt any specific cut-off criteria, such as an impact factor such as the Thomson Reuters "Journal Citation Reports (JCR) Impact factor" (e.g., Bouncken, Gast, Kraus, & Bogers, 2015). We did not include such a cut-off requirement to account for the particularly practice-oriented research field and to avoid a possible publication bias (Dickersin & Min, 1993). Third, we did not rule out that there may be seminal academic and non-academic publications in other languages, but we believe that the pertinent literature in the entrepreneurial finance context is primarily published in English. Fourth, the inclusion criteria employed during our literature search may have been too stringently defined.

4. Avenues for future research

First, further research on early-stage investors' decision policies is needed. It is not yet understood how VCs or BAs rate entrepreneurs' (business) failure experience (Cope, Cave, & Eccles, 2004). If they value this experience as a (positive) decision criterion, why and how does this influence VCs' decision-making? Similarly, it may be fruitful to investigate whether the relative weight of entrepreneurial failure experience is a decisive criterion for BAs and why it might be more important for BAs than for VCs. Additionally, it would be useful to examine differences in the perception of failure between these two investor types, which also raises the question of whether a relationship exists between an early-stage investor's failure and an entrepreneur's failure. Finally, future research should consider the results of the current study investigating possible similarity biases that might arise during the investment decision process. Accordingly, we suggest more intensive research activities in the entrepreneurial finance cosmos relying on conjoint analyses. As a theoretical starting point for methods best suited to answer the proposed research questions, we refer to the work by Hsu, Simmons, and Wieland (2017).

Second, even though a wide range of literature on VCs' and BAs' investment criteria exists, findings on corporate VCs (Siegel, Siegel, & MacMillan, 1988), bank-affiliated⁷ VCs, and philanthropic VCs (Scarlata & Alemany, 2009) are scarce. Accordingly, future research might aim to investigate the heterogeneity of different investor types and compare investment criteria among independent VCs, corporate VCs, bank-affiliated VCs, philanthropic VCs, and BAs, for example, by capitalizing on the publication of Mason and Stark (2004), to gain a better understanding of the investment criteria different funders focus on when screening a business

⁷ To the best of our knowledge, no appropriate publications exist on bank-affiliated VCs' investment criteria. For instance, previous research on bank-affiliated VCs investigated bank behavior in terms of VC investing and lending activities (Hellmann et al., 2008) and the effects of bank-affiliated VC activities on portfolio companies (Cumming & Murtinu, 2016).

plan. Additionally, an experimental analysis such as in Hsu et al. (2014) might help identify the different weighting of criteria between these investor types. Hence, an empirical investigation of these five types of external equity providers may supply entrepreneurs with further insights into external equity providers' expectations on new venture financing and ultimately provide insights into how early-stage investors interrogate business plans.

Third, our literature body shows that researchers prefer the well-developed U.S., U.K., and Canadian contexts to investigate early-stage investors' investment criteria. Therefore, researchers may expand the geographical scope of their analyses to investigate the variability of results on the debate on VCs' and BAs' investment criteria across further countries that can be influenced by endogenous factors such as different legal, regulatory, industrial, and cultural settings. For instance, the currently increasing number of VC deals as well as the amount of money raised by venture-backed firms in Germany, France, and Israel may be a good starting point to expand investment criteria research based on European samples (KPMG, 2018). Finally, 79.6% (n=43) of studies in our literature body focus their work on single countries. To investigate the influence of these endogenous factors on certain investment criteria, future studies should investigate cross-country datasets.

Fourth, researchers prefer to use post-hoc methodologies to investigate VCs' and BAs' investment criteria (Shepherd & Zacharakis, 1999). However, these retrospective methodologies are hazardous because of the recall and post-hoc rationalization biases and the lack of introspection among informants (Golden, 1992; Zacharakis & Meyer, 1998). For instance, people do not have a full understanding of their decision-making processes and cannot precisely recount their cognitive processes in retrospect (Nisbett & Wilson, 1977). Thus, their self-reported data as gathered by post-hoc methodologies are deemed invalid (Zacharakis & Meyer, 2000) and do not reflect the actual decision-making process (Mason & Stark, 2004).

Furthermore, post-hoc studies do not offer the possibility to investigate contingencies in VCs' and BAs' relationships. Therefore, these types of studies cannot provide a comprehensive understanding of their decision policies, as only what Argyris and Schon (1974) refer to "espoused" decision policies are evaluated, and "in-use" decision policies are not considered (Shepherd, 1999b). However, these post-hoc limitations can be overcome by focusing on real-time research methodologies. On the one hand, verbal protocols aim to gather self-reported data through "think-aloud protocols". This kind of experiment enables data gathering of early-stage investors' thought processes, thus eliminating any recall and post-hoc rationalization bias (Sandberg, 1988). In general, verbal protocols provide detailed information of i) how early-stage investors analyze business plans, ii) which factors they focus on to make a decision, and iii) how information in the business plan is processed. This information helps scholars absorb investors' actual and stated decision policies (Zacharakis & Meyer, 2000). On the other hand, the entrepreneurial finance literature has rarely borrowed conjoint analysis from the marketing research field, in which this real-time methodology is rooted (Green & Srinivasan, 1990). Conjoint analysis enables the entrepreneurial research field to disaggregate the decision process into its core structure based on various profiles, which are investigated in real time. This type of analysis also helps uncover early-stage investors' decision theories "in-use" (Shepherd & Zacharakis, 1999).

Fifth, we want to direct future research to carry out an investigation on the importance of VCs' and BAs' investment criteria across the literature through a systematic aggregation and evaluation of existing empirical evidence. Hence, a meta-analysis can shed additional light on the overall direction of early-stage investors' investment criteria as well as on effect sizes in-between certain criteria groups (Glass, 1976; Rauch & Frese, 2006). We suggest using our literature body as a basis for a possible meta-analysis. In the next step, scholars need to define inclusion criteria specific to a meta-analysis to narrow down the number of publications. These

may include the characteristics of the variables, the availability of report sample sizes, and outcome statistics. As outlined by our literature body, studies use different research methodologies, definitions of investment criteria, as well as samples from different populations. Thus, a main challenge in such a meta-analysis will be to deal with equal measures for differently labelled constructs and vice versa across publications (Lipsey & Wilson, 2001).

Finally, a comparatively young research field places emphasis on the opposite side of the research efforts on early-stage investors' investment criteria, namely, by investigating how early-stage entrepreneurs evaluate and select their venture capital providers (e.g. Drover et al., 2014; Hsu, 2004; Valliere & Peterson, 2007). One reason for the academic restraint in this research field is the limited number of public data regarding past financing rounds of new ventures. Additionally, entrepreneurs are rather reluctant to communicate financial and strategic information (Cassar, 2004). At this point, the increasing acceptance of experimental designs in entrepreneurial finance research (Kraus, Meier, & Niemand, 2016) opens a possibility to enlarge the proposed research strand by investigating how entrepreneurs select external equity providers. This possibility may help both future research and practitioners in the entrepreneurial finance world better meet the requirements of the other.

5. Conclusion

In this paper, we systematically reviewed the literature on VCs' and BAs' investment criteria, thereby identifying and organizing the extant knowledge in this research field. We selected 54 articles focusing on VCs' and BAs' investment criteria and showed how this research field has developed over the last four decades. This paper helps enlarge the current research field dealing with VCs' and BAs' investment criteria, as it recomposes the unstructured and heterogeneous literature field on such criteria. We reviewed pertinent literature to create a cogent understanding of where the current debate on VCs' and BAs' investment criteria stands. In doing so, we derived a framework based on agency theory that helps distinguish between the

different types of investment criteria VCs and BAs employ. We illustrated how VCs' investment decisions are in the first instance motivated by criteria related to the business and financial traction. VCs especially focus on financially-driven criteria to satisfy the return expectations of their fund providers. In contrast, the BA industry prioritizes the management team before looking at other investment criteria, which can be explained by the missing institutional setting in the angel-entrepreneur dyad. Beyond that, we revealed avenues for future research, which would further disentangle the debate on VCs' and BAs' investment criteria.

Furthermore, our review has practical implications. For entrepreneurs seeking venture funding, our results show that VCs and BAs have different preferences in terms of their investment policies. Entrepreneurs have only one opportunity to present their business idea to a VC or BA investor. Even though VCs and BAs place different weights on investment criteria, our review shows that they all holistically examine the management team, the business, and financial traction. However, entrepreneurs face the problem of not knowing exactly, which criteria VCs and BAs primarily place emphasis on. Our structured overview of investment criteria provides entrepreneurs with a better and more profound understanding of which criteria VCs and BAs focus on enabling entrepreneurs to better tailor their pitches when seeking external equity financing. In this kind of self-presentation, entrepreneurs seeking funds from VCs should emphasize their business and financials. Conversely, entrepreneurs seeking funds from BAs should prioritize the management team.

C. Essay 2: Scout or coach? Value-added services as selection criteria in entrepreneurs' venture capitalist selection⁸

1. Introduction

The involvement of a venture capitalist helps entrepreneurs receive substantial financial resources and serves as a catalyst for new ventures to attract other knowledge resources such as value-added services (Lee et al., 2001). Research scholars have analyzed the entrepreneur-investor dyad with a focus on the supply side of venture capital (VC) resources, that is, the new venture financing process and the criteria used by venture capitalists when carefully screening and effectively selecting prospective investment targets (e.g., Franke et al., 2008; Macmillan et al., 1985). Research that focuses on the financing decision from the entrepreneur's perspective and the selection of venture capitalists by entrepreneurs is scarce. We tap into this research gap by investigating different value-added services provided by potential venture capitalists as selection criteria for entrepreneurs.

Entrepreneurs of high-tech and innovative startups often have a choice regarding which venture capitalist they choose to partner with (Smith, 2001). The few studies that adopt the entrepreneur's perspective on investor selection (Drover et al., 2017) are largely restricted to criteria such as the venture capitalist's (ethical) reputation (Drover et al., 2014), trust and empathy (Fairchild, 2011), affiliation (Hsu, 2004), deal valuation and contractual terms (Falik et al., 2016). However, we lack insight into how entrepreneurs select their venture capitalists to manage their dependence on resources, thus focusing on value-added services. We analyze different types of value-added services that may influence entrepreneurs' actual decision

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making in selecting a venture capitalist. Justification for focusing on the role of venture capitalists' value-added services rests on resource dependence theory (RDT) (Hillman et al., 2009; Pfeffer & Salancik, 1978). Due to constraints on internal resources, young firms largely depend on external financial, knowledge, network and physical resources, which are key to organizational survival within an uncertain, dynamic environment (Bradley, Aldrich, Shepherd, & Wiklund, 2011). According to RDT, entrepreneurs carefully seek specific resources from external investors that ultimately determine the future outcome of the entrepreneurial firm (Dollinger, 1999). Within this context, the screening and selection of the right investor with the essential social capital (e.g., the venture capitalist's access to resources from other firms through their networks) and human capital (e.g., the venture capitalist's experience and expertise) is challenging for entrepreneurs (Saetre, 2003; Sørheim & Landström, 2001). Their future success depends on who invests in their ventures; therefore, they thoroughly search for a 'door opener' for networks of influence (Ferrary & Granovetter, 2009).

Based on RDT, we reason that a venture capitalist's value-added services are likely to be an important but presently overlooked consideration in entrepreneurial decision making when seeking VC financing. The purpose of this study is to explore the link between the relevance of scouting versus coaching activities as different types of value-added services and entrepreneurs' likelihood to partner with a venture capitalist. Our aim is to understand whether entrepreneurs prefer to look for a venture capitalist that will provide valuable external contacts or one that will support them internally as a sparring partner. Furthermore, we investigate how entrepreneurs perceive these value-added services and whether they focus on closing a resource gap or strengthening an existing resource.

We answered our research questions using a mixed method approach combining the precision of quantitative methods with the understanding afforded by qualitative fieldwork

(Edmondson & McManus, 2007; Hallen, Cohen, & Bingham, 2020; Kaplan, 2016; Small, 2011). To probe this line of thinking empirically, as a first step, we relied on site visits to conduct a conjoint analysis with 122 entrepreneurs in Germany, Austria, and Switzerland serving as participants. The entrepreneurs made 3,172 decisions; by decomposing these decisions, we were able to detect how entrepreneurs select their venture capitalists. In a second step, we used the results of our rich, complementary qualitative fieldwork that draws on semi-structured interviews with entrepreneurs in our sample. We first validated our quantitative results and then inductively built on the theory that helped us to further unpack how entrepreneurs make decisions when selecting a specific venture capitalist and why they do so. Specifically, we find that entrepreneurs' pursuit of resource dependence will guide their decisions. Entrepreneurs consider a venture capitalist's *operational network* and *exit experience* as most important, while the venture capitalist's *strategic development* and *business development* competencies are considerably less important to the entrepreneur's decision to partner with a venture capitalist. The *financial network* has no influence. We further find that entrepreneurs not only look for venture capitalists with complementary skills to increase the venture's resource base, but also aim to strengthen existing resources, which advances traditional RDT. Triangulation of our resulting conjoint simulation data and qualitative interviews helped us explain the role of value-added services in entrepreneurial decision making, that is, that those services are strategically used as an active resource management tool. Overall, our approach helped us to establish the external and internal validity of our results and a fuller understanding than a single method would allow.

This study makes several contributions. First, with entrepreneurial decision making increasingly gaining the attention of both entrepreneurship and management scholars (Hsu et al., 2017; Shepherd, Williams, & Patzelt, 2015), we expand work on the nascent literature on entrepreneurs' venture capitalist selection (Drover et al., 2014; Fairchild, 2011; Smith, 2001;

Valliere & Peterson, 2007) and what entrepreneurs consider important in their decision making by disentangling the aggregated, general conception of value-added services (Saetre, 2003). Second, we advance research on the RDT logic in entrepreneurial ventures (Hillman et al., 2009) by introducing the sourcing of different types of value-added services as unexplored, active resource management to take advantage of entrepreneurs' environmental dependence on growth when selecting a venture capitalist (Fraser, Bhaumik, & Wright, 2015). Third, we add to the evolutionary entrepreneurship discussion on the role of venture capitalists in entrepreneurial firms by showing that entrepreneurs prefer their venture capitalist to act as a 'scout' rather than a 'coach', focusing on providing external contacts rather than internal advice (Baum & Silverman, 2004; Hellmann, 2000). Finally, our findings are expected to be of value to venture capitalists who need to understand the *multilevel* structure of value-added services to become attractive to entrepreneurs.

2. Background literature

2.1 Theoretical framework

According to RDT, organizations need to maintain and acquire resources to ensure their organizational survival and growth (Pfeffer & Salancik, 1978). When they are restricted by resources, they become dependent on their external environment to provide missing financial or physical resources or information. While access to external, critical resources is important for all types of organizations, it particularly affects young high-tech ventures that neither possess nor control all resources necessary for growth and survival (Bradley et al., 2011; Hillman et al., 2009). Therefore, their need for resources causes an interdependence with external stakeholders, as the venture does not "*entirely control all of the conditions necessary for the achievement of an action or for obtaining the outcome desired from the actions*" (Pfeffer & Salancik, 1978, p. 40). However, especially for new ventures, it is important to remain flexible in their decision making to react quickly to environmental changes. Thus, organizations

aim to minimize this resource dependence because it is a source of vulnerability (Aldrich & Ruef, 2006; Dunford, 1987).

Consistent with RDT, entrepreneurs' decision making may follow different actions that help them to minimize environmental dependencies. Entrepreneurs may (1) adapt or remove the resource restrictions through a search for further sources by integration, mergers or acquisitions; (2) influence the environment by setting up joint ventures, including inter-organizational relationships, or by resource sharing within a supply chain; and (3) change the judicial situation through political activities and legislation towards an environment that fits their interests (Hillman et al., 2009). However, RDT makes no assumptions about how a new venture's financing environment influences entrepreneurs' resource dependencies. When observing the entrepreneur-investor dyad from an RDT perspective, entrepreneurs depend on resources that venture capitalists provide that may enhance the new venture's performance (Hellmann & Puri, 2000; Sapienza, Manigart, & Vermeir, 1996). Entrepreneurs can choose their venture capitalists based on different types of value-added services (here, resources), as they are an additional source to handle external resource dependencies.

Through the lens of RDT, a venture capitalist's value-added service portfolio is a function of the entrepreneurial firm's needs. New ventures depend on their venture capitalist's added value when the venture (1) falls short in its own capacities to cover needs; (2) lacks the optimal strategy or the implementation of a given strategy; or (3) depends on new sources of information to achieve competitive advantage (Pfeffer & Salancik, 1978; Sapienza et al., 1996). In particular, entrepreneurs perceive value-added services as most valuable when venture capitalists have the potential to reduce critical venture uncertainties (Sapienza et al., 1996). Thus, entrepreneurs choose their venture capitalists according to the latter's potential for contributing added value and when there are significant uncertainties about the current and

future direction of the venture. RDT, therefore, brings together the phenomenon of entrepreneurs' venture capitalist selection and the associated role of value-added services.

2.2 Value-added services in the context of the selection of venture capitalists

As part of entrepreneurs' internal investor due diligence, venture capitalists can be seen as a 'scarce resource' or as a 'commodity' (Saetre, 2003). The former refers to merely financial capital, whereas the latter is considered the venture capitalist's value-added services, which in turn represent a different type of capital in and of itself (Fisher, 1906). Entrepreneurs not only look for competent capital (capital, competence, and commitment) (Sørheim & Landström, 2001) but also want investors with relevant industry networks (Saetre, 2003). Therefore, venture capitalists are seen as a 'door opener' for networks of influence (Ferrary & Granovetter, 2009) and as 'hands-on' investors (Mason & Harrison, 1999) that help with both limiting risk and adding value to new ventures (Gorman & Sahlman, 1989; Sahlman, 1990; Sapienza, 1992). Entrepreneurs are interested in who invests in their companies; therefore, they thoroughly search for those 'hands-on' investors who are able to provide niche-relevant value-added services, which help in growing and scaling the venture (Gompers & Lerner, 2004b; Saetre, 2003).

Applying an RDT framework to the entrepreneur's venture capitalist selection, we suggest that it is likely that the evaluation of a potential investor proceeds—apart from the initial capital infusion—in light of the venture capitalist's concomitant contribution of the attributes of different value-added services. Using two steps (cf. Block, Fisch, Vismara, & Andres, 2019), we identified a list of value-added services.⁹ First, we deductively derived a list of possible value-added services from prior research (e.g., Cumming, Fleming, & Suchard, 2005;

⁹ This approach enabled us to maximize the realism of the conjoint analysis and its ecological validity in investigating entrepreneurial decision making (cf. Warnick, Murnieks, McMullen, & Brooks, 2018). It helped us to ensure that our list of value-added services is exhaustive in the context of entrepreneurs' venture capitalist selection.

Luukkonen, Deschryvere, & Bertoni, 2013; MacMillan, Kulow, & Khoylian, 1989; Smith, 2001). Second, we conducted six semi-structured interviews (with three VC-backed ventures and three non-VC-backed ventures) to identify the most relevant value-added services that entrepreneurs look for when selecting their VC investor. The interviews were recorded, transcribed and then coded by the research team to identify the most relevant value-added services from practice. Based on this procedure, we identified the following five value-added services conjoint attributes: (1) *operational network*, (2) *financial network*, (3) *strategic development*, (4) *business development*, and (5) *exit experience*. These value-added services selection criteria are in line with prior research. Furthermore, we were able to extend prior research such as Large and Muegge (2008) by providing a *coherent* list of relevant value-added services in the context of entrepreneurial finance and investor selection. In a final step, we conducted two semi-structured interviews with international VC funds to discuss, validate and adapt attributes to match the tenor of the attribute levels and made it more comprehensive to participants later on in the conjoint experiment. In what follows, we consider the five value-added service attributes, building upon the notion of entrepreneurs' need for growth resources through the lens of RDT.

Operational network. We define *operational network*—through the lens of RDT—as the extent to which a venture capitalist can provide a network and contacts to new operational stakeholders. In attempting to understand the nature of a strong network, we look at the venture capitalist's opportunity to help entrepreneurs obtain relevant industry contacts and access to a network of contacts with business services (Large & Muegge, 2008; Saetre, 2003). Over time, venture capitalists build and extend their networks in different fields to support the successful development of their portfolio firms. By helping entrepreneurs find new customers, suppliers, distributors, or other business-related partners, a venture capitalist can contribute significantly to exploit the entrepreneurial business (Bellavitis, Filatotchev, & Kamuriwo, 2014; Hochberg,

Ljungqvist, & Lu, 2007; Sapienza et al., 1996). Entrepreneurs depend on the endorsement of the technological and commercial quality of their ventures to attract new customers (Stuart, Hoang, & Hybels, 1999). Especially in the early stages, entrepreneurs face the barrier of 'liability of alienness' because no substantial business partner trades with an entrepreneur who has no credible track record of successful business agreements (Bürgel, Murray, Fier, & Licht, 2001). At that point, venture capitalists add value by giving access to outside partners or to portfolio firms' sales and marketing channels, thus enabling entrepreneurs to leverage their potential by gaining new customers (Perry, 1988). Consequently, the venture capitalist's operational network provides an endorsement benefit to entrepreneurs and makes ventures visible to their stakeholders for future business activities (Stuart et al., 1999).

Financial network. We define *financial network*—through the lens of RDT—as the extent to which the venture capitalist can provide entrepreneurs with further contacts to financial stakeholders. Such a network may help entrepreneurs receive follow-on financing (Gorman & Sahlman, 1989; MacMillan et al., 1989; Sapienza et al., 1996). Venture capitalists can provide a network to the financial sector that helps entrepreneurs improve their funding situation by raising further capital (Alperovych & Hübner, 2013; Chang, 2004; Gorman & Sahlman, 1989) and facilitate obtaining leverage in terms of debt financing (Bottazzi & Da Rin, 2002; MacMillan et al., 1989) to overcome financial constraints. Furthermore, entrepreneurs benefit from a financial network by interfacing and networking with new investor groups and professionals. It has become apparent that this kind of financial contact can be a success driver in VC-backed firms (Gomez-Mejia, Balkin, & Welbourne, 1990; MacMillan et al., 1989; Sapienza et al., 1996).

Strategic development. We define *strategic development*—through the lens of RDT—as the venture capitalist's competence to advise the entrepreneur and to form and shape the new

venture's short- and long-term strategic decision making on allocating resources (Gorman & Sahlman, 1989; Murray, 1996; Sapienza et al., 1996). Venture capitalists can group their knowledge from other investments and various industries they are familiar with and impart their competence to the new venture (Alperovych & Hübner, 2013). For instance, venture capitalists provide portfolio firms with strategic advice and analysis by active board involvement (Alperovych & Hübner, 2013; Rosenstein, Bruno, Bygrave, & Taylor, 1993), strategy formulation and shaping (Gorman & Sahlman, 1989; Rosenstein, 1988; Timmons & Bygrave, 1986), and finally controlling, monitoring and reviewing portfolio firms (Alperovych & Hübner, 2013; Proksch et al., 2017). Additionally, venture capitalists add value through the strategic positioning of the startup's human capital resources such as in finding new (management) team members (Timmons & Bygrave, 1986) or replacing the founder team with external C-level candidates (Hellmann & Puri, 2002).

Business development. We define *business development*—through the lens of RDT—as the extent to which the venture capitalist provides entrepreneurs with competence on all sales-oriented and operational resources within the new venture. Venture capitalists are engaged in operational improvements in new ventures. For example, a venture capitalist advises entrepreneurs on issues that may be related to the venture's sales force, its service and production processes (MacMillan et al., 1989), its framing of marketing agendas (MacMillan et al., 1989) and optimization of operations (Gorman & Sahlman, 1989). Thus, operational involvement can improve the new venture's operating cycle and make the venture more efficient in terms of operating processes such as cost-reduction and value-enhancement programs (Alperovych & Hübner, 2013).

Exit experience. We define *exit experience*—through the lens of RDT—as the extent to which the venture capitalist can guide and advise entrepreneurs once they experience an

opportunity for divestments or exits. Exit experience is a type of value-added service that venture capitalists possess and which they obtained during prior VC deals (Busenitz, Fiet, & Moesel, 2004; Ehrlich, De Noble, Moore, & Weaver, 1994; Gomez-Mejia et al., 1990). The venture capitalist's exit experience includes knowledge resources that they provide during the divestiture of a portfolio firm. Entrepreneurs depend on follow-up financing; thus, the transition phase when venture capitalists aim to exit is of high relevance to the new venture but also to entrepreneurs themselves. The venture capitalist's previous exit experience can help entrepreneurs make the transition phase efficient and smooth by receiving advice on the risks and opportunities of different exit types and by achieving the best possible terms for the exit itself (Gompers, Kovner, Lerner, & Scharfstein, 2005; Proksch et al., 2017). For example, entrepreneurs usually do not have interactions with organizations linked to exiting investments such as acquiring firms, lawyers, accountants, consultants or investment banks (Gomez-Mejia et al., 1990; Hsu, 2004). In this regard, the certification of reputable venture capitalists (Hsu, 2004) and their exit experience (Sapienza et al., 1996) aim at the successful completion of the funding relationship. Even though this attribute might be more relevant to later-stage ventures, it is often of high importance in the early stages of a venture to define the concept of the strategic vision of what the venture should aim to become.

3. Mixed methodology

In this paper, we use a mixed method approach that combines a conjoint analysis and rich qualitative fieldwork—each of which utilizes the same sample. Triangulation of both aspects helps us to overcome the limitations of individual research methods (Edmondson & McManus, 2007; Kaplan, 2016; Small, 2011). The mixed method approach is especially well suited for research questions such as ours, which has an applied and theory-driven intention of depicting the selection decision of entrepreneurs when choosing a venture capitalist (McFarland, Lewis, & Goldberg, 2016). In particular, our research question is driven by the applied question of

“*how do entrepreneurs select their venture capitalists?*” and a theoretical question around both how and why mechanisms driving any observed decision-making effect may be unique and may advance RDT in the entrepreneurial finance context.

3.1 Sample

We tested the relevance of different value-added services based on a mixed sample of entrepreneurs whom we engaged in the task of evaluating a series of hypothetical VC financing offers. To identify and recruit entrepreneur-participants, we screened public databases such as Crunchbase and Thomson ONE to identify potential study participants. In addition, we relied on personal contacts and referrals from interviewees. We contacted 237 startups and sent direct emails to one or more founding members. Our final sample consists of 122 entrepreneurs—who are all founding members—in 114 new ventures headquartered in Germany, Austria, and Switzerland. We achieved a participant response rate of 48.1 percent.

To examine the representativeness of our sample, we compared participating startups to nonparticipants from the initial sample (Armstrong & Overton, 1977). Table C-1 reports the mean values of our initial population (N = 237), our final sample of startups (N = 114), and a z-test to analyze the differences between mean values.

Table C-1: Comparison of an initial and final sample

Variable	(1) Initial population (N = 237)	(2) Final population (N = 114)	(1) vs. (2)
Gender of founder (male)	0.882	0.930	-0.048
Location of startup			
Germany	0.570	0.746	-0.176
Austria	0.261	0.140	0.121
Switzerland	0.169	0.114	0.055
VC-backed	0.498	0.543	-0.045

Note: Significance is marked by *** at 0.1%, ** at 1%, * at 5% and † at 10%.

We show differences for gender, the geographical distribution of the startups, and whether startups received VC funding, with a general consistency between the initial sample

and our final sample of participants. We find no significant differences between the mean values reported.

Furthermore, we tested for a potential late response bias, which exists if early participants in our experiment show significantly different characteristics and behaviors compared to late participants. To uncover this potential bias, we split our final sample into early participants (first half of the respondents, $N = 61$) and late participants (second half of the respondents, $N = 61$) and compared their mean values with regard to individual characteristics using a t-test. The results are reported in Table C-2.

Table C-2: Assessment of a potential late-response bias

Variable	(1) First half (N = 61)	(2) Second half (N = 61)	(1) vs. (2)
Age	34.492	36.607	-2.115***
Gender (male)	0.934	0.934	0.000
New venture financing experience	0.754	0.967	-0.213
Startup field experience	4.844	6.746	-1.902
Serial entrepreneur	0.492	0.557	-0.065
Educational level			
High school	0.049	0.082	-0.033
Apprentice	0.033	0.033	0.000
Bachelor	0.148	0.098	0.05
Master	0.509	0.607	-0.098
PhD	0.246	0.180	0.066
Educational field			
Arts/humanities	0.066	0	0.066*
Business/economics	0.539	0.740	-0.201*
Engineering	0.115	0.082	0.033
Law	0.033	0	0.033
Mathematics/natural sciences	0.180	0.131	0.049
Medicine	0.033	0	0.033
Other	0.049	0.033	0.016
Prior professional background			
Banking	0.115	0.066	0.049
Management consulting	0.426	0.344	0.082
Industry	0.344	0.410	-0.066
Other	0.377	0.410	-0.033

Note: Significance is marked by *** at 0.1%, ** at 1%, * at 5% and † at 10%.

The results indicate that the average age of early participants is 34.5 years, while 36.6 years is the average age of our late participants. These figures show that late participants were slightly older than early participants. Also, early participants were slightly more educated in arts/humanities, while late participants were slightly more educated in business/economics. No

further significant differences exist for other variables. We therefore conclude that there is no major difference between early and late respondents.

We also address the concern of external validity. Conjoint studies largely overcome problems related to external validity (e.g., Louviere, 1988; Shepherd & Zacharakis, 2018), as these studies generally report a strong correlation between the estimated decision behavior and the actual behavior. In that vein, it is recommended that conjoint studies represent participants' real tasks to ensure external validity (Shepherd & Zacharakis, 2018). We ensured external validity by pretests with field-specific research scholars, venture capitalists, and entrepreneurs, who confirmed that our selection of attributes and levels was appropriate to actual decision making and that the evaluation was manageable. However, the assumption that entrepreneurs have the option to select between different venture capitalists might be particularly prone to concerns of external validity because this perspective has received scarce attention in prior research. To assess the external validity of our sample of entrepreneurs, we talked with two notable German VC funds. Consistent with KPMG's Venture Pulse Report (2019), venture capitalists currently have dry powder on the line and are looking for new deals. However, this supply dynamic is beyond the number of investment opportunities in the DACH¹⁰ region, which favors entrepreneurs' powerful position of being able to decide whether to partner with a certain venture capitalist. Moreover, the market for entrepreneurial finance has become more complex since non-VC investors became active in financing growth-oriented ventures (Bessière, Stéphany, & Wirtz, 2020; Wallmeroth, Wirtz, & Groh, 2018). Individual business angels are willing and able to fund large equity financing rounds, but also business angel groups and their networks combine resources to take on a similar role to traditional venture capitalists. Furthermore, equity crowdfunding is an established financing instrument for entrepreneurs,

¹⁰ The acronym 'DACH' refers to the countries Germany (D), Austria (A), and Switzerland (CH).

even for relatively large volume financing rounds (Bessière et al., 2020). The heterogeneity of potential investors provides entrepreneurs with alternative financing routes, which strengthens their position when negotiating and selecting venture capitalists.

3.2 Descriptive statistics

Table C-3 provides a descriptive overview of our sample by the individual- and startup-specific characteristics.

Table C-3: Demographics of individuals and startups surveyed

<u>Individuals (N = 122)</u>	
Gender: ^{a)}	male = 114, female = 8
Age:	mean = 35.55, standard deviation (SD) = 7.7, median = 35, range: 20-57
Position:	founding member and C-level position = 122
Educational level: ^{a)}	high school = 8, apprentice = 5, bachelor = 15, master = 68, PhD = 26
Educational type: ^{a)}	Arts/humanities = 4, business/economics = 78, engineering = 12, law = 2, mathematics/natural sciences = 19, medicine = 2, other = 5
Startup field experience (in years):	mean = 5.80, SD = 4.54, median = 5, range: 1-23
Serial entrepreneur: ^{a)}	yes = 64, no = 58
Prior professional background: ^{a), b)}	banking = 11, management consulting = 47, industry = 46, other = 48
Private network marked by entrepreneurship: ^{a), b)}	family = 46, friends and acquaintances = 71, previous working environment = 38
Location of interviewees (offices):	Germany (Berlin, Hamburg, Dusseldorf, Cologne, Frankfurt, Karlsruhe, Stuttgart, Nuremberg, Munich) = 93 Austria (Vienna) = 16 Switzerland (Zurich, St. Gallen, Zug) = 13
<u>Startups (N = 114)</u>	
Firm size I (number of professionals in 2017):	mean = 34.81, SD = 101.72, median = 7, range: 0-800
Firm size II (turnover in 2017 [k EUR]):	mean = 2,696.72, SD = 6,753.54, median = 130, range: 0-45,000
VC-backed: ^{a)}	yes = 62, no = 52
Volume of venture capital funding (k EUR): ^{c)}	mean = 9,299.87, SD = 26,104.12, median = 2,500, range: 100-200,000
Life-cycle phase: ^{a)}	pre-seed = 12, seed = 27, startup = 24, growth = 43, expansion = 8
Technology focus: ^{a)}	high-tech = 68, low-tech = 46
Industry focus: ^{a)}	CGS = 18, EU = 4, FS = 14, IPS = 5, Infra = 2, LS = 8, PH = 9, TMT = 22, Trans = 11, other = 21

Note: We interviewed 122 founders in 114 startups. In six startups, we surveyed two/three founding members, as they make their financing decisions on a joint basis.

^{a)} For categorical variables, the number of individuals who chose the respective category is presented.

^{b)} Multiple answers are possible.

^{c)} This volume only includes startups that are VC-backed (N = 62).

Acronyms: CGS = Consumer Goods and Retail, EU = Energy and Utilities, FS = Financial Services, IPS = Industrial Products and Services, Infra = Infrastructure, LS = Life Science, PH = Pharma and Healthcare, TMT = Technology, Media and Telecommunication, Trans = Transportation

A majority of participants are male (93.4 percent), and the mean age of entrepreneurs in this sample is 35.55 years ($SD = 7.7$). All participants were founding members, holding a C-level position, and were actively involved in financing decisions. It is evident that a majority (89.3 percent) of participants in this sample have a university background, primarily in the fields of business and economics (63.9 percent). Moreover, all entrepreneurs had experience in the startup field, a point reinforced by the fact that around 52.5 percent of these entrepreneurs can be classified as serial entrepreneurs who have previously started one or more businesses.

With regard to startup characteristics, the sample shows participating high-tech (59.6 percent) and low-tech (40.4 percent) new ventures coming from different industries within different life-cycle stages, whereas a large part belong to sectors such as consumer goods and retail (15.8 percent), financial services (12.3 percent), and technology, media, and telecommunication (19.3 percent). Furthermore, the sample presents a balance between VC-backed (54.4 percent) and non-VC-backed ventures (45.6 percent). Overall, we have a mixed sample of different types of entrepreneurs and startups. All participants represented new ventures that were actively producing and/or selling a product and/or a service at the time we conducted the study.

3.3 Experimental design of the conjoint analysis

We made use of a (forced) choice-based conjoint experiment (CBC) to shed light on the role of value-added services as a determinant in actual decision making. Conjoint analysis is an instrument that *“requires respondents to make a series of judgments, assessments or preference choices, based on profiles from which their captured decision processes can be decomposed into its underlying structure”* (Shepherd & Zacharakis, 1997, p. 217). This approach benefits from the key advantage that it can overcome methodological post-hoc limitations that appear in retrospective methods (Golden, 1992; Zacharakis & Meyer, 1998) such as recall and post-hoc rationalization bias and limited introspection accuracy of the individual (Aiman-Smith,

Scullen, & Barr, 2002). As we are especially interested in the importance of different value-added services, conjoint analysis is an effective approach to measuring how entrepreneurs make their trade-off decisions between different VC financing offers, thus facing no lack of discrimination among conjoint attributes.

CBC enables participants to make a discrete decision (here, “accepting financing offer I” versus “accepting financing offer II”) (Street & Burgess, 2007) that reflects the real-life context in the event that entrepreneurs have more than one VC financing offer, meaning that they have a choice in selecting their venture capitalist. Additionally, the cognitive effort during the selection of alternatives in CBC is low (Balderjahn, Hedergott, & Peyer, 2009). Furthermore, CBC uses an experimental setting that allows the drawing of causal inferences and does not face the problem of omitted variable bias. Thus, it enables us to isolate the effect of value-added services on entrepreneurs' venture capitalist selection, and a *ceteris paribus* analysis is possible.

To determine the evaluation policy of our sample, participants were presented with two hypothetical VC financing offers and asked to select the one that matches their preferences in terms of value-added services, *ceteris paribus*. We talked to experts in the VC industry to design a hypothetical venture capitalist with several characteristics but that remains sufficiently general, except for its value-added services, to specify the type of venture capitalist that provides the financing offer. Figure C-1 presents the description of the venture capitalist that entrepreneurs were told to consider when making their evaluations.

Figure C-1: Description of the venture capitalist as presented to the participants

- | |
|---|
| <ul style="list-style-type: none">• The venture capitalist will take a 35% ownership stake in your new venture and will gain additional control rights.¹¹• The perceived financing offers are equal with regard to valuation, terms and conditions, and investment volume.• The venture capitalist's investment managers are equally credible, competent and friendly.• The venture capitalists only differ in terms of their value-added services. |
|---|

One challenge of CBC lies in making its design structure as realistic as possible but still manageable for the participants (cf. Lussier & Olshavsky, 1979). In doing so, each choice set contains two VC financing offers described by five attributes having two ordinal levels each (high versus low) in conjunction with the following value-added services from the venture capitalist: (1) *operational network*, (2) *financial network*, (3) *strategic development*, (4) *business development*, and (5) *exit experience*. Table C-4 presents the attributes and respective levels.

¹¹ The ownership stake (also known as equity stake) is based on industry averages (Gompers & Lerner, 2004b).

Table C-4: Attributes and levels of the choice-based analysis

Attribute	Levels	Description
Operational network	<i>Strong (1)</i> <i>Weak (0)</i>	The criterion OPERATIONAL NETWORK describes the venture capitalist's network of suppliers, distributors, customers, and other (operational) stakeholders, which can add value to the product/service and/or business idea. <i>Strong:</i> The venture capitalist has strong connections. <i>Weak:</i> The venture capitalist has limited connections.
Financial network	<i>Strong (1)</i> <i>Weak (0)</i>	The criterion FINANCIAL NETWORK describes the venture capitalist's access to (investment) banks, investors, and other (financial) stakeholders. <i>Strong:</i> The venture capitalist has strong connections. <i>Weak:</i> The venture capitalist has limited connections.
Strategic development	<i>Strong (1)</i> <i>Weak (0)</i>	The criterion STRATEGIC DEVELOPMENT describes how the venture capitalist can advise the new venture, or form and support short-term and long-term strategic decisions on allocating resources (e.g., overall strategy advisory, advisory on governance issues, advisory on human capital issues) confronting the new venture. <i>Strong:</i> The venture capitalist has more than 10 years of experience working with new ventures. <i>Weak:</i> The venture capitalist has less than 5 years of experience working with new ventures.
Business development	<i>Strong (1)</i> <i>Weak (0)</i>	The criterion BUSINESS DEVELOPMENT describes all sales-oriented topics, issues related to the process design of operational matters within the new venture, the optimization of the product, the continuous support of projects in terms of project management and steering committee level, and the allocation of the new venture's stakeholders. <i>Strong:</i> The venture capitalist has more than 10 years of experience working with new ventures. <i>Weak:</i> The venture capitalist has less than 5 years of experience working with new ventures.
Exit experience	<i>Strong (1)</i> <i>Weak (0)</i>	The criterion EXIT EXPERIENCE describes the venture capitalist's experience with exits such as the sale of equity stakes to another investor, trade sale, stock market flotation or liquidation. <i>Strong:</i> The venture capitalist has an above-average exit record. <i>Weak:</i> The venture capitalist has a below-average exit record.

Note: Reference parameter values are marked by 1.

In designing the experiment, we used a full-profile CBC so that all attributes from Table C-4 could be presented holistically to the sample of entrepreneurs at once. A full-profile design is appropriate for this study, as entrepreneurs—in our case founding members—have tight time schedules with limited availability. As recommended by Kuhfeld, Tobias, and Garratt (1994) and Chrzan and Orme (2000), we used a CBC in conjunction with a reduced conjoint design because participants would have been exposed to too many decision tasks if we had used all

possible variations of a different sequence of choice tasks. We asked participants to select one of two alternatives in 15 choice tasks, of which two were used to determine the test-retest reliability of the entrepreneurs' choices. We excluded those two choice tasks from formal analysis and used them only for the reliability assessment (Aiman-Smith et al., 2002). Figure C-2 depicts an example of a choice task.

Figure C-2: Example of a choice set

Which of these two venture capital firms is more attractive to you?			
Operational network	Weak	Operational network	Strong
Financial network	Strong	Financial network	Weak
Strategy development	Strong	Strategy development	Weak
Business development	Weak	Business development	Strong
Exit experience	Weak	Exit experience	Strong
<input type="checkbox"/>		<input type="checkbox"/>	

The conjoint experiment was paper-and-pencil-based and accompanied by at least one co-author on site to ensure that participants took their time to thoroughly complete the experiment and fill out the post-experiment questionnaire. Before conducting the experiment, we explained the setting to the participants in detail, described attributes and respective levels, and repeated these explanations throughout the experiment, if needed. We also instructed participants to consider each choice task independently and asked them not to refer back to choice sets already completed. Finally, we devoted attention to explaining the post-experiment questionnaire.

To ensure the consistency of the experiment and the reliability of participants' choices, we asked respondents whether they understood the instructions and the attribute definitions. All respondents confirmed their full understanding of the instructions, definitions and choice sets. Furthermore, we pretested the experiment with research scholars in the field, and it was

confirmed that the evaluation was manageable and comprehensive. Finally, the test-retest reliability of the participants' choices led to an 80 percent accuracy of correct classification. Thus, we concluded that the participants' response behavior is reliable.

3.4 Quantitative empirical model

We employ a multilevel mixed-effects logistic regression model to calculate the impact of different value-added service attributes on entrepreneurs' venture capitalist selection. The decision made by participants is used as a binary dependent variable (1 = accepting financing offer; 0 = not accepting financing offer), while the different levels of the value-added service attributes serve as independent variables. Extended logit models are frequently applied in discrete choice models due to their flexibility and because they offer the possibility to better match real-life situations (Train, 2009). The decomposed data can be fitted with a multilevel, mixed-effects logistic regression model due to the following three reasons. First, the use of a multilevel regression model is recommended if data are nested (i.e., if the data have a hierarchical/multilevel structure) and if multilevel effects are evaluated simultaneously (Aguinis, Gottfredson, & Culpepper, 2013). In our model, three interdependent levels are present: multiple decisions (level one) that are nested within each individual (level two) and each startup (level three). Second, our estimator makes it possible for the preference values of one participant to be translated into similar choice patterns in different choice sets (Hausman & Wise, 1978). Third, we need to be aware of the possibility that our participants may have different frames of reference (with regard to attribute levels). Due to the mixed-effects specification, this last point does not affect our results (cf. De Rassenfosse & Fischer, 2016).

Even though the extended, mixed logit is a contemporary behavioral model (Cameron & Trivedi, 2005) and is particularly appropriate for CBC, there is one drawback concerning the estimation. In contrast to standard logit models, the estimation of mixed logit models is complex because the log-likelihood function has to be maximized and has no closed-form solution. Thus,

simulation procedures such as simulated maximum likelihood (Revelt & Train, 1999) and hierarchical Bayesian (HB) modeling (Allenby, Arora, & Ginter, 1995; Train, 2009) are ways to approach a solution. Bayesian procedures do not suffer from any convergence problems, as no underlying function has to be maximized (Train, 2009). Furthermore, HB modeling performs well in various robustness tests (Johnson, 1999). Especially in conjoint analysis where little individual-level information is given and lower-level parameters have large errors, upper-level measures such as mean and standard deviation are still fairly precise by HB estimation (Lenk, DeSarbo, Green, & Young, 1996).

3.5 Semi-structured interviews

We draw on extensive qualitative fieldwork based on 122 semi-structured interviews with all founding partners who took part in our conjoint experiment. The interviews enabled us to offer contextual grounding for our theory development and reinforced the empirical validity of our conjoint analysis. We sought to understand how entrepreneurs use value-added services in their decision-making process when selecting a venture capitalist and elaborate causal reasons that justify their decision behavior.

After the conjoint experiment, we conducted face-to-face semi-structured interviews with open-ended questions in a predefined interview guide to ensure participants' free expression of their opinions, experiences, and practices of their venture capitalist selection (Miles & Huberman, 1994). We first asked about the interviewees' process of selecting venture capitalists and the main motives for focusing on certain value-added services. This enabled us to get a deeper understanding of entrepreneurs' decision-making process regarding their financing with VC money. Instead of presenting a fixed set of decision criteria and processes, we first asked participants openly about their perception of key drivers and influencing factors when seeking VC financing. We then delved deeper into these unprompted drivers mentioned by the participants and further investigated the participants' views by requesting further

elaborations on the context of value-added services as a resource in new ventures. Finally, we asked questions about how our interviewees perceive the role of venture capitalists in a new venture.

Since qualitative research is an iterative process and we met different types of entrepreneurs, we slightly changed the wording, and modified and further developed the interview guide over the period the interviews were conducted (Gioia, Corley, & Hamilton, 2012; Mayring, 2000). The interviews lasted between 15 and 30 minutes, generating a total of approximately 50 hours of interview material.¹²

Finally, when building our interpretation of the interview work, we iterated back and forth between our data, entrepreneurial finance literature and the RDT (Eisenhardt, 1989b). To provide a contextual grounding for our interpretations and theory, and to further illustrate the liaison between our two fieldworks, we developed key assertions, which were inductively derived from the interview material.

4. Findings

4.1 Quantitative fieldwork: a conjoint analysis

Tables C-5 and C-6 present the main results of the conjoint analysis.

Table C-5: Coefficient estimates: Multilevel mixed-effects logistic regression model

Independent variables	Coef.	SE	Significance
Operational network – strong	2.0968	0.0848	***
Financial network – strong	0.0550	0.0814	
Strategic development – strong	0.3487	0.0820	***
Business development – strong	0.1370	0.0819	†
Exit experience – strong	0.9217	0.0853	***
cons	-1.7842	0.1119	***
N (respondents) / N (choices)	122	3,172	
LL / McFadden's pseudo R ²	-1,795.02	0.1836	
Wald test / p-value	639.70	0.0000	***

Note: This table shows the results of a multilevel mixed-effects logistic regression with random intercepts and random slopes. The dependent variable is the preference of the decision maker and the independent variables are the attributes described in Table C-4. Coefficient estimates and standard errors (clustered at the decision maker level) are displayed. Significance is marked by *** at 0.1%, ** at 1%, * at 5% and † at 10%.

¹² Twenty-six interviews can be classified as in-depth interviews that lasted approximately 50 minutes per interview partner.

Table C-6: Coefficient estimates: Hierarchical Bayesian modeling

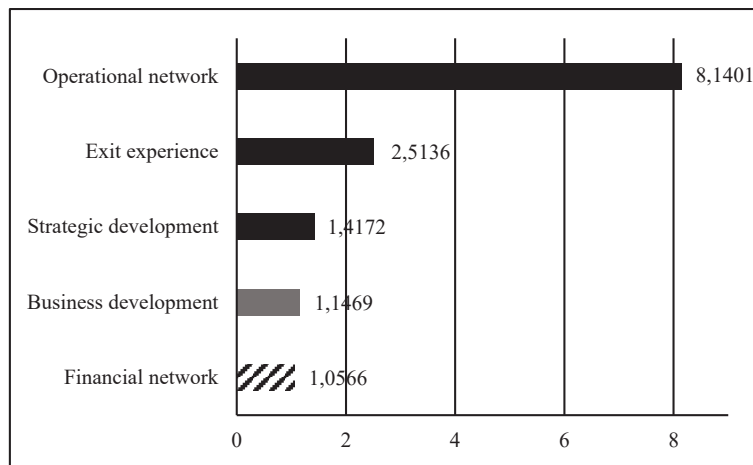
Independent variables	Coef.	SD	SE	95%-Conf. I.	
Operational network – strong	2.1097	0.0869	0.0047	1.9361	2.2725
Financial network – strong	0.0536	0.0838	0.0040	-0.1062	0.2189
Strategic development – strong	0.3439	0.0818	0.0047	0.1733	0.5012
Business development – strong	0.1578	0.0831	0.0063	-0.0086	0.3191
Exit experience – strong	0.9299	0.0878	0.0045	0.7575	1.0945
cons	-1.8024	0.1138	0.0063	-2.0271	-1.5801
N (respondents) / N (choices)	122	3,172			

Note: This table presents the results for the hierarchical Bayes estimation. We do not report statistical significance because Bayesian estimators are not point estimators. We used 100,000 burn-in iterations to be sure of convergence and a further 2,000 iterations to generate the estimates, thereby saving every tenth iteration.

In Table C-5, regression analysis shows that four of five attributes have a significant impact on entrepreneurs' selection of a venture capitalist. We find statistical evidence that entrepreneurs prefer the following attributes in their venture capitalist selection process: strong operational network (2.0968; $p \leq 0.001$), strong strategic development (0.3487; $p \leq 0.001$), strong business development (0.1370; $p \leq 0.1$), and strong exit experience (0.9217; $p \leq 0.001$). Entrepreneurs only show indifferent selection behavior within the attribute 'strong financial network', which will be discussed later.

Since we use a nonlinear model, we cannot directly obtain the economic significance of the value-added service attributes from regression coefficients as presented in Table C-4. While the examination of regression coefficients contributes to our understanding of whether certain value-added services may manifest in entrepreneurs' selection of the right venture capitalist, Figure C-3 provides deeper insights into the different effect sizes following Block et al. (2019).

Figure C-3: Odds-ratio levels of coefficients



Note: Solid black bars mark significance levels at 0.1%, gray bars characterize a significance of 10%, and hatched bars mark nonsignificance.

Figure C-3 presents the odds ratios for different attributes. It is evident that the effect size for a venture capitalist's strong operational network is particularly high. A venture capitalist with a strong operational network has an odds ratio of 8.1401, which indicates that this investor has an 8.1401 higher chance of a positive selection by an entrepreneur relative to an investor with a weak operational network. Venture capitalists are required to offer a pertinent operation- and business-oriented network, which helps new ventures to achieve strong growth and satisfy their aspiration to be successful (e.g., Saetre, 2003). With regard to the attribute exit experience, venture capitalists that have considerable experience with exits (e.g., in trade sales, secondary buyouts, and initial public offerings) have an odds ratio of 2.5136, demonstrating a 2.5136 higher chance of a positive selection by an entrepreneur relative to venture capitalists that are exit-inexperienced. Overall, the chance of a positive screening by an entrepreneur is influenced by the following attributes, with a descending order of odds ratios: (1) operational network (8.1401, $p \leq 0.001$), (2) exit experience (2.5136, $p \leq 0.001$), (3) strategic development (1.4172, $p \leq 0.001$), (4) business development (1.1469, $p \leq 0.1$), and (5) financial network (1.0566, $p \geq 0.1$).

Moreover, we also provide results of different models as an additional robustness check (cf. Moedl, 2019). A comparison shows that results are robust towards the choice between our

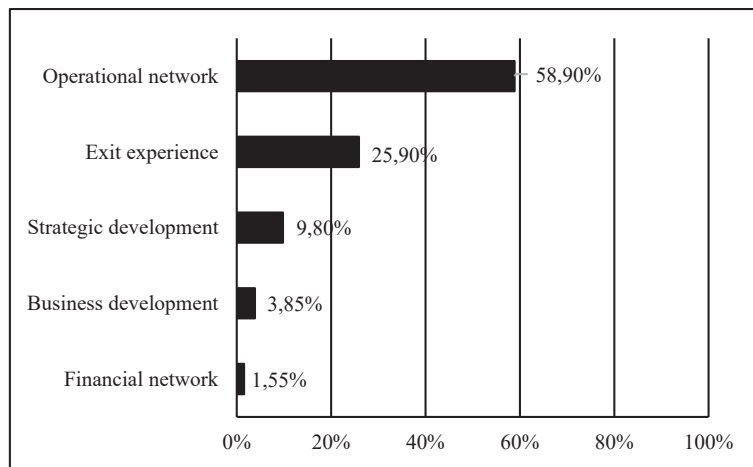
extended logit and standard logit (not reported here) models and towards the choice between multilevel mixed-effects and HB estimation (cf. Table C-6).¹³ Furthermore, to test whether our results are biased towards a certain type of entrepreneur, we investigated interactions of the different conjoint attributes with three different characterizing factors: the life-cycle stage of the startup, the industry of the startup and whether the entrepreneur already received VC financing or is still looking for the first VC funding. None of these factors had a statistically significant impact on our results. It seems that the selection decision is likely to be relatively similar across different types of entrepreneurs.

Finally, to further illustrate the weight entrepreneurs attached to value-added services, we estimate the relative importance of attributes following Franke et al. (2008).¹⁴ We illustrate normalized (zero-centered) importance values in Figure C-4; therefore, the sum of all importance values yields 100 percent.

¹³ We tested the correlation and variance inflation factors for the different conjoint attributes. We can confirm that all correlation values were below the critical threshold of 0.7, proving that multicollinearity does not affect our results (Anderson, Sweeney, Williams, Camm, & Cochran, 2003). Additionally, we examined the variance inflation factors to test multicollinearity; these factors were all under the critical threshold of 10 (Chatterjee & Hadi, 2015). Thus, we conclude that we do not need to be concerned with multicollinearity in our model.

¹⁴ We need to define the 'importance' of an attribute, as it depends on the available levels and its definitions. It is crucial that the importance of our attributes is interpreted with the underlying levels in mind (cf. Table 4). Therefore, it was of utmost importance to extensively derive and later define the attribute levels used in our experiment. Furthermore, this definition enables us to circumvent another problem of rating scales in classic surveys; for example, when an entrepreneur needs to define the importance of the attribute operational network, the entrepreneur becomes biased in this decision by his or her own experiences regarding this attribute. Consequently, an entrepreneur who has never partnered with a venture capitalist that provides a weak operational network will likely assign lower importance to this importance rating than would an entrepreneur who has partnered with a venture capitalist that had a rather strong one.

Figure C-4: The relative importance of attributes



Results show that venture capitalists having a strong operational network (58.90 percent) is the most important selection attribute for entrepreneurs. In particular, this attribute is more than twice as important as the second-ranked attribute, exit experience (25.90 percent). Following these two attributes, entrepreneurs place importance on the venture capitalist's strategic development competence (9.80 percent). Less importance is attributed to the business development competencies of a venture capitalist, which is ranked fourth with 3.85 percent and which represents less than one-half of the importance of the attribute strategic development. Additionally, we see the financial network (1.55 percent) as being the least important in entrepreneurs' decision making when they select their venture capitalists.

4.2 Qualitative fieldwork: semi-structured interviews

Our aim is to understand how value-added services are utilized to manage resource dependencies and how entrepreneurs perceive the role of their venture capitalists during their investor due diligence. Thus, we draw on additional qualitative data to establish the face validity of value-added services in entrepreneurs' venture capitalist selection. As reported in Table C-7, our qualitative fieldwork provides in-depth observation of value-added services in entrepreneurs' venture capitalist selection. For reasons of clarity, we built three key assertions—each of which is discussed in turn and shown in the rows of Table C-7, respectively.

Table C-7: Overview of qualitative fieldwork

Reasoning	Argumentation	# of data points	Illustrative quotes
1. Entrepreneurs' venture capitalist selection is influenced by different kinds of value-added services with different levels of importance.	Argumentation emphasizes the operational network and exit experience and expects those to provide positive impetus (opportunities) for a new venture.	93	<p>“The operational network is of tremendous importance as it is the key to even more than competence. There is a lot that can be learned on the job or achieved by smart hires. On the other hand, a strong network to obtain financing deals, or more importantly, to obtain operational contacts—that are otherwise out of reach—can be critical to success and secure a lot of advantages over competitors.”</p> <p>“Typically, in the startup world, everything is about growing your venture. Therefore, founders [...] need strong contacts with customers and distributors that help in scaling your business. We don't need networks to further financiers. This is consistent with the current investment backlog in the European VC landscape. What you need is a viable product. This is why a venture capitalist's operational network is of utmost importance to get you there. Everything else, especially further funding, will fall into place, especially as there are so many networking events in Germany where you can meet venture capitalists day in, day out. But again, it's not the money first, it's the smartness of your investor that counts.”</p> <p>“Our leading investor of our seed financing round helped us in setting up many introductions to leading Tier-1 VC firms to set the foundation for a successful exit early. [...] Exit experience is of utmost importance for the venture's vision, but we found very little in the DACH VC landscape compared to U.S. investors that are much more strategic with a clear outcome in mind, less opportunity-driven, and having the knowledge to accompany you from day one to exit.”</p> <p>“Even if you are interested in holding your venture, you should care about the exit, at least as a satellite. If we look at the average founder, they do not have any exit experience. [...] Founders normally do this only once. In turn, it is the bread-and-butter business of a venture capitalist. You definitely need help there so that you may successfully exit your venture.”</p>
		81	
		64	
		32	

Table C-7: Continued

Reasoning	Argumentation	# of data points	Illustrative quotes
2. Entrepreneurs' venture capitalist selection involves seizing resource benefits and tackling resource dependencies .	Argumentation presents a mixed selection behavior. Entrepreneurs focus on value-added services to fill resource gaps and/or to strengthen existing resources, thus portraying value-added services as active resource management action tools.	87	<p>"A lot of VC-backed founders think they should look for VC funding to gather complementary resources. However, think of the following: VC is an expensive funding source for founders because they give up control and independence. Thus, you should utilize VC thoroughly. You should deepen resources that you are already good at to become much stronger and to achieve a competitive advantage. It's a nice-to-have to have a broad range of value-added services that help you here and there, but that's not effective when you select your venture capitalist."</p> <p>"We would have focused on only strengthening our competence (especially business development and exit experience) over the network but found very little of both in the German VC landscape [...]. After our time in the U.S. and in hindsight, we would have solved the capital question quite differently, as U.S. investors have a far more hands-on, standardized, quicker and less formalized way of growing and scaling businesses. U.S. investors are much more focused with a clear outcome in mind and less opportunity-driven. They know directly what you are good at and push this forward. Filling missing resources is what you can do with new hires, but not by using a venture capitalist—which by the way does not have enough time to provide you with a broad range of value-added services. Do focus on what you are good at and leverage this with your investor."</p> <p>"In our last financing round, we could choose between six international VC funds. As part of our internal investor due diligence in our Series C 160m USD financing round, we observed the value-adding portfolio of the different venture capitalists. We did so as the added value of the final two investors that we partnered with enabled us to strengthen our network to potential new clients and marketplaces. We, therefore, perceive value-added services as an active tool to build up and manage our strong portfolio of industry contacts that have made us successful."</p> <p>"In general, value-added services from our venture capitalists help us to regulate, control and manage resources that our startup needs to become more successful and to secure a competitive advantage."</p>
		76	
		69	
		62	

*The importance of value-added services.*¹⁵ Founder participants reported reasons for certain value-added services being more important in their decision-making process than others—i.e., why a strong operational network is perceived as most valuable to new ventures. Our analysis indicates that entrepreneurs evaluate the venture capitalist's operational network as particularly important when selecting a venture capitalist because a network of relevant industry stakeholders can help an entrepreneur grow the entrepreneurial venture. For example, a founder of a German unicorn said, "*The operational network is of tremendous importance, as it is key to even more than competence. There is a lot that can be learned on the job or achieved by smart hires. However, such a strong network to get deals or contacts that are otherwise out of reach can be critical to success and secure a lot of advantages over competitors.*" He explained that their previous investors' operational networks helped them to become a 'disruptor' in their industry, such as investors did with Netflix, Spotify, and Zillow. This is consistent with the other founder participants' view that the operational network helps entrepreneurs strike the path for growing and scaling a business. He added that this kind of network demonstrates a differentiating resource among competing venture capitalists. In that vein, a founder said, "*It is important for entrepreneurs to place more emphasis on the venture capitalist's operational network of meaningful connections to suppliers, distributors, new customers, and other operational stakeholders; for example, a strong venture capitalist's operational network can be used to introduce you to global markets or to the successful Silicon Valley startup ecosystem.*" Several cases confirm that introductions to potential customers in various industry verticals allow the venture to become active in the most promising markets. Such early pivots are seen as the critical entrepreneurship success factor. In turn, he explained that a strong operational network is key to setting the foundation for strong follow-up

¹⁵ Cf. 1st row of Table 7.

investment rounds; consequently, it will have a sustainable effect on the entrepreneur's further investment story.

Although the venture capitalist's financial network might be important as a further network criterion in entrepreneurs' venture capitalist selection, founder participants explain that, to the contrary, it is all about the "*breadth and depth*" of the operational network, which enables an entrepreneur to build a successful venture. In turn, this network is what makes an entrepreneur and his or her startup attractive to new financiers. Another founder said, "*An investor telling you that he has a huge financial network is nice, but the question is how real the network is and how much personal time the investor is really willing to invest. If a venture capitalist just provides money and access to further capital to a venture that is about to go into the market, you will fail.*" Entrepreneurs in our sample see money as a short-term solution; new clients and future revenues are greater keys to success. In that vein, entrepreneurs frequently reported that (institutional) investors are not as "*venture savvy*" and rarely provide competent financial support exceeding their own involvement. Furthermore, more consensus could be found with regard to the relevance of the venture capitalist's financial network. An exemplary quote illustrates that "*the availability of VC money (financial network) is a rather small problem in the current economic situation, as there is a lot of dry powder in private equity and venture capital.*" This point reinforces the entrepreneur's bargaining power when raising new funding and thus supports the insignificant role of a venture capitalist's financial network in entrepreneurial decision making.

Moreover, we find lower but significant effect sizes for the strategic and business development competencies that venture capitalists have in their portfolio of value-added services. One founder stated that "*all of their venture capitalists provide strategic insights, which are utterly useless, contradictory and simply a testament to their lack of knowledge.*" In

that vein, he explained that neither strategic nor business development helps entrepreneurial ventures to obtain real access to the market to place their products and services. As our qualitative fieldwork shows, those two kinds of value-added services, in particular, should be part of the day-to-day business within the founding team; therefore, rather less support in that area is expected from venture capitalists. Entrepreneurs might feel restricted in their actions when they are constantly in exchange with their venture capitalist regarding the firm's strategic direction or any operational matters.

Finally, interviewees explain the relevance of an exit-experienced venture capitalist in their decision making. We observed in numerous cases that entrepreneurs consider a venture capitalist's exit experience an important selection attribute to secure a distinguished investor who can help the venture to exit in difficult surroundings, e.g., by accompanying the venture through the market-floatation process. As one founder said, you "*normally do this only once. [...] You definitely need help there, so that you may successfully exit your venture.*" Overall, we see that entrepreneurs want to feel prepared on the way to a potential exit; thus, they consider exit experience important in their decision making. As further illustrated in the following quote, exit experience is also associated with the venture capitalist's trustworthiness. "*We want to ensure that our investor is professionally very capable, concerned about our financial or, rather, economic well-being, and has a strong sense of justice when facing a future exit. I would never partner with a venture capitalist who is exit-inexperienced.*" Hence, exit experience is a salient decision factor that bundles entrepreneurs' emotions toward the investor. Our interviews reveal that an exit-experienced venture capitalist has to attach great importance to achieving the same vision as the entrepreneur's through a larger channel. Entrepreneurs value strong exit-experienced venture capitalists because the latter know when the moment is right to 'sell out'.

*The RDT perspective—benefits and dependencies.*¹⁶ Beyond the validity of the importance of different value-added services, a further motivation of our qualitative fieldwork was to better understand entrepreneurial decision making through a resource dependence lens. As we know from RDT (Hillman et al., 2009; Pfeffer & Salancik, 1978), entrepreneurs focus their efforts on lifting weak resources within their ventures to minimize dependencies. However, throughout the interviews, the involved participants also demonstrated that resources (here, value-added services) are not always selected to fill a resource gap. In turn, numerous cases have shown that founders aim at strengthening existing, solid resources. One founder said, *“In the first instance, it makes sense when I select a prospective venture capitalist that can help me in closing my knowledge gaps in terms of added value. However, during our last financing round, I’ve looked for someone who could leverage our already strong industry network.”* The founder explained that even though entrepreneurs are already experts in their fields, they aim at strengthening existing networks, competencies or experiences to gain additional strength in those fields. However, in RDT, a firm reduces its dependencies by filling nonexistent resources. A founder’s view on looking for complementary resources in terms of value-added services amplifies a certain degree of ‘fear’ of a much stronger dependence on the venture capitalist. *“Of course, my venture has gaps in strategic and business development competencies. However, I would never have a venture capitalist fill these gaps. First, this is know-how I can fill by new hires. Second, I would have to give up a certain degree of my entrepreneurial independence if I fill these gaps with organizational value-added services where a venture capitalist will be deeply involved in my firm.”* Instead, this entrepreneur feels that strengthening the network with new industry contacts is what new ventures would benefit most from.

¹⁶ Cf. 2nd row of Table 7.

When contextualizing those insights with the criterion importance from CBC and an entrepreneurs' self-assessment of their knowledge in different value-added services, it seems that entrepreneurs select not only venture capitalists that can fill the entrepreneurs' resource gap, but also venture capitalists providing added value to strengthen existing resources. For example, entrepreneurs show a strong and well-developed self-assessment of their operational network (mean: 3.9262 out of a 5-level Likert scale); however, they still focus on that kind of added value when selecting their venture capitalist, as CBC and the qualitative fieldwork have shown. Although this behavior may show a strategic management action, the strengthening of a resource is beyond traditional RDT. Moreover, entrepreneurs feel well equipped with regard to their strategic (mean: 3.9098 out of a 5-level Likert scale) and business development (mean: 3.8934 out of a 5-level Likert scale) competencies. In contrast to the operational network—which entrepreneurs already possess but nevertheless aim to strengthen further—the search for further strategic and business development competencies does not play an integral role during their investor selection.

Building on that, our interviews indicate that entrepreneurs not only perceive value-added services as an additional service next to VC money, but also *reconceive* value-added services as a strategic tool to regulate dependencies within their ventures. Entrepreneurs usually lack sufficient internal resources; therefore, they face an unclear, vigorous environment (Bradley et al., 2011). One founder explained that he perceives “*value-added services as an active tool to build up and manage [...]*” his resource portfolios, such as industry contacts or any operational resources. Another quote from this entrepreneur indicates that a founder “*sees the selection process of the right venture capitalist as an opportunity to control the venture's interdependence with the external environment.*” Hence, we observed that in several cases, entrepreneurs consistently revealed their perception of value-added services during their venture capitalist selection as an active strategic resource management tool that helps a new

venture reduce its dependencies. Yet, as we have seen, entrepreneurs can do both—that is, fill resource gaps *and* make existing resources more powerful. However, both intentions again cause new interdependences (cf. Pfeffer & Salancik, 1978). One founder mentioned that “*value-added services are not just a kind of rare resource; they can be also seen as a commodity that nourishes your venture where it has needs. However, obtaining commodities brings victims; that is about accompanying new venture dependencies.*”

*Role of the venture capitalist.*¹⁷ Our data do not support the view that entrepreneurs see a venture capitalist primarily as a ‘sparring partner’ (cf. Hellmann, 2000). First, insights gained through our conjoint analysis confirm that entrepreneurs are instead looking for a ‘scout’ who can open network doors for founders. Consistent with our interview work, one founder said that entrepreneurs need “*to scale up with a tremendous speed, both to survive and succeed.*” He explained that this scaling can only be done if the venture capitalist acts as a ‘scout’ instead of just a ‘coach’ who would rather be active in the strategic and business development of the venture. Additionally, another founder mentioned that venture capitalists help founders “*identify new potential, but they are not good coaches; that means that they are not good at realizing this potential.*” In this case, the venture capitalist provided the entrepreneur with detailed strategic advisory and operational assistance, which in turn automatically integrated the venture capitalist into several daily business activities of the founder, thus increasing the entrepreneur’s level of dependence. Prior work on the role of venture capitalists has only investigated the startup’s performance in the context of whether venture capitalists are good ‘scouts’ (Chan, 1983; Shepherd et al., 2000) or ‘coaches’ (Hellmann & Puri, 2002; Jain & Kini, 1995). We show the importance of how the entrepreneur perceives the venture capitalist’s role

¹⁷ Cf. 3rd row of Table 7.

ex-ante for the selection process (e.g., acting as door opener to a huge industry-specific network).

5. Discussion

In this paper, we explore how entrepreneurs select their venture capitalist—a burgeoning perspective that so far has been largely neglected in entrepreneurial finance research. By drawing upon RDT, we shed light on how different types of value-added services influence entrepreneurial decision making, thereby providing insights into why entrepreneurs prefer certain value-added services to effectively manage their resource dependence.

In uncovering our findings (Gibson, 2017), the mixed method design allowed *elaboration* on a more comprehensive view to guide future research on entrepreneurs' selection of venture capitalists highlighting the multilevel nature of value-added services. Further, this study achieved *generalizability* as its quantitative results mirrored the qualitative fieldwork, showing us that the results are not idiosyncratic. *Triangulation* was evident in that the qualitative data replicated the patterns found in our conjoint analysis, that there is a ranking order of value-added services, but it also helps us understand how value-added services are perceived as a resource and what kind of image value-added services create of a venture capitalist in entrepreneurs' eyes. Finally, *depth of interpretation* was achieved in that the qualitative data provided us with additional insight into the findings from the conjoint analysis, such as that entrepreneurs primarily look for an operational network and look for a venture capitalist as a scout rather than as a coach.

5.1 Implications for theory

First, entrepreneurs commonly select between different VC offers and turn down financing offers (Smith, 2001). In that vein, Shepherd et al. (2015, p. 38) argue that we are “[...] *far from having a comprehensive and coherent story*” on entrepreneurs' decision making, especially regarding the other side of the dyad focusing on the entrepreneur's perspective of venture

capitalist selection. We paint a specific picture of entrepreneurs' venture capitalist selection that adds to the recent entrepreneurial finance literature (Drover et al., 2014; Fairchild, 2011; Smith, 2001; Valliere & Peterson, 2007). Specifically, we investigate the relevance of value-added services in the context of entrepreneurs' investor selection. We therefore heed Saetre's (2003) call for a more in-depth evaluation of value-added services as a *multilevel* selection attribute. While the post-investment contribution of value-added services to VC-backed ventures has been frequently studied (Chemmanur, Krishnan, & Nandy, 2011; Fraser et al., 2015; Large & Muegge, 2008), the entrepreneurial finance literature has not focused on what specific types of value-added services entrepreneurs are looking for. By using conjoint analysis, we delved deeper into the shape of different types of value-added services. Further, we complement the methodologies used in this literature stream and enlarge the usage of entrepreneurship experiments, as proposed by Hsu et al. (2017). Overall, the most important value-added services are the venture capitalist's operational network and its exit experience. The venture capitalist's strategic development and business development competencies are relevant but of lower importance than the first two aforementioned attributes, while the financial network has no significant impact. Thus, we add to the literature on entrepreneurs' venture capitalist selection and the ongoing discussion on the role of value-added services in the entrepreneurial finance literature by offering evidence that *different* value-added services each have a *different* relevance when selecting a venture capitalist. In other words, if researchers are assuming value-added services are a holistic, generic criterion in entrepreneurs' venture capitalist investor selection, they are unlikely to understand other types of value-added services that are also important, much less the connection between networks and competencies.

Second, we also contribute to the RDT literature (Hillman et al., 2009; Pfeffer & Salancik, 1978). Even though the basic tenets of RDT are well investigated for larger, established organizations, Hillman et al. (2009, p. 1419) argue that RDT "*has not experienced*

substantial [...] refinement.” If we continue in the spirit of theory elaboration, it is not enough to show that value-added services matter whether or not an entrepreneur wants to partner with a venture capitalist. Rather, insights are required into why entrepreneurs perceive certain value-adding resources to be more important than others. In this respect, our study not only investigates value-added services as an instrument entrepreneurs use to fill complementary resources, but also *reconceives* value-added services as a strategic tool to manage dependencies within the boundaries of their ventures. Hence, to draw conclusions on their resource dependence, we further considered entrepreneurs' assessment as part of our qualitative study of how they classify their own knowledge of value-added services. Consistent with RDT, we find that entrepreneurs feel value-added services are important to fill resource gaps (Berg-Utby, Sorheim, & Widding, 2007; Busenitz et al., 2004). However, surprisingly, entrepreneurs also seek the strengthening of existing resources. Our series of interviews outline that entrepreneurs not only look for venture capitalists to manage complementary dependencies—Fredriksen, Olofsson, and Wahlbin (1997) call venture capitalists ‘firefighters’—but may also focus on strengthening already existing resources that may contribute significantly to the income of their ventures. In that vein, our study suggests that the strengthening of resources helps the entrepreneur gain access to new, important resource providers, in itself a strategic dependence-reducing action (cf. De Prijcker, Manigart, Collewaert, & Vanacker, 2019). However, placing all their eggs in one basket comes at a cost. If entrepreneurs are only interested in one specific service offered by their venture capitalist, they may not fill other resource gaps within their venture that might also be important for venture growth. Having this point in mind strengthens Pfeffer's (1987) view that, especially for new ventures, it will not be possible to fully eliminate all resource dependencies.

Third, this study contributes to research on the role of venture capitalists from the perspective of entrepreneurs. While there is evidence on the role of venture capitalists in startup

formation (Barry, Muscarella, Peavy, & Vetsuypens, 1990) that helps startups to become successful (Jain & Kini, 1995) and adapt the nature of innovation (Kortum & Lerner, 2000), there is missing research “*to tease apart the multiple ways in which a VC might enhance a startup's performance*” in terms of value-added services (Baum & Silverman, 2004, p. 413). The main aspect investigated by previous research is, arguably, the venture capitalist's role as a ‘scout’ (e.g., bringing in the right network to leverage the startup's opportunities externally) relative to a ‘coach’ (e.g., injecting expertise and judgment into a startup to build successful startups) (Baum & Silverman, 2004; Hellmann, 2000). Adding to this discussion from the entrepreneur's perspective, we interpret both our quantitative and qualitative findings as indicating that entrepreneurs are primarily interested in a venture capitalist acting as a ‘scout’ to roll out their business model when obtaining access to a valuable network of prospective operational stakeholders. In turn, we also find that entrepreneurs rate the venture capitalist's strategic and business development competencies much lower, as they are not interested in a ‘coach’ who would then serve much more as a company builder, thus having an influence on the venture's management direction.

5.2 Implications for practice

Our findings have practical implications for venture capitalists, entrepreneurs, and policymakers. For venture capitalists, our study helps to adjust their value-added service offerings to improve their standing among entrepreneurs. Consequently, this study should stimulate venture capitalists to appeal to more entrepreneurs and thereby increase their deal flow quality. For instance, when a venture capitalist lacks a strong operational network, the value-added service offering is incomplete, thus reducing the chance of being selected by an entrepreneur. Therefore, venture capitalists should be aware of the importance of certain kinds of value-added services and would do well to build or strengthen their involvement in those

missing value-adding levers, for example by finding additional investment managers offering these resources.

Our study helps entrepreneurs benchmark their own selection process of a venture capitalist against that of other entrepreneurs. It may provide insights into the internal due diligence process of the founder team, where value-added services represent a requirement that the venture capitalist should fulfill for a partnership. From our study, entrepreneurs can learn that selecting a venture capitalist is an early strategic decision that is associated with important consequences when later developing the venture. In that vein, entrepreneurs' venture capitalist selection reflects a strategic dependence-reducing action stimulated by their preferences for different value-added services.

For policymakers, we highlight the need to understand the consequences of VC financing and entrepreneurs' demand for different types of value-added services in case they want to foster the local VC landscape and make it more appealing to entrepreneurs. This fostering may be done by reducing barriers for venture capitalists to provide a broader variety of value-added services to entrepreneurial ventures.

5.3 Limitations and avenues for future research

As with all research, our study has limitations that may present additional opportunities for future research. In particular, limitations arise from our research design choices that imply trade-offs, which should be kept in mind when interpreting our results. Decisions made in a CBC are never actual choices (revealed preferences) but only stated preferences (Train, 2009). At this point, we acknowledge that CBC is just a simplified model of real-life decision making. Therefore, it might be possible that we have not included other important attributes that are certainly relevant in entrepreneurs' real-life venture capitalist selection processes. However, the nature of conjoint analysis restricts the number of attributes that can be included in the design

(Mitchell & Shepherd, 2010). We carefully selected the value-added service conjoint attributes to keep the limitation to a minimum. Further, while controlled experiments offer precision in variable measurement and control (i.e., internal validity), a drawback is the experiment's external validity due to the choice situation not being realistic (Choi & Shepherd, 2004; Lynch Jr, 1982). Here, our study assumes that entrepreneurs have the possibility to select between hypothetical VC financing offers. One might argue that this kind of decision making is unrealistic; however, it has been proven by previous research that entrepreneurs do have the opportunity to select between different VC financing offers (Smith, 2001). Moreover, experiments are often criticized for a lack of real-life emotional attachment or immediacy (McKelvie, Haynie, & Gustavsson, 2011). While this criticism is justified, past research shows that conjoint experiments reflect individuals' actual decision making (Zacharakis, McMullen, & Shepherd, 2007), although experimental situations are artificial (Brown, 1972; Hammond & Adelman, 1976). We can further refute this criticism, as our qualitative fieldwork confirmed that decision making in our CBC experiment corresponds to participants' real-life decision making.

Another potential limitation of our study is that we only considered entrepreneurs' venture capitalist selection at the point of data gathering. Future research might consider a longitudinal study of entrepreneurs' decision-making processes when selecting their financiers and investigate how selection criteria evolve over different life-cycle phases and funding stages. In addition, a limitation of our study stems from our theoretical sampling approach. A key criterion for building our sample was to ensure that participating entrepreneurs have already received or are currently raising VC funding. Due to the business model of venture capitalists, entrepreneurs in our sample are implicitly aiming towards company growth that leads to a successful exit for the investors. Our results are therefore limited to entrepreneurs with such a growth orientation. Future research could further broaden our knowledge of how entrepreneurs

select external equity investors by also including other types of entrepreneurs and other forms of new venture finance. As such, conceptually and empirically exploring entrepreneurs' intentions to grow in combination with their respective financing strategies may provide new insights that help inform the literature on entrepreneurs' investor selection.

Moreover, the construct of trust and credibility shows the potential to influence entrepreneurs' venture capitalist selection. Trust and empathy have been shown as an anticipated choice paradigm when entrepreneurs can select between funding of a venture capitalist or angel investor (Fairchild, 2011). Our qualitative fieldwork gives some first hints that entrepreneurs might use, in particular, value-added services as a general proxy for a deeper concern about a venture capitalist's trust or credibility. Future studies should further explore whether different configurations and combinations of value-added services create a different perception of trust and credibility and whether that, in turn, may influence entrepreneurial decision making such as investor selection as it impacts the personal fit between venture capitalists and entrepreneurs. In that vein, it would also be interesting to study how entrepreneurs' ideologies of trust and credibility influence the VC investor selection.

Finally, developments in technology and regulation have led to additional players and forms of entrepreneurial finance, especially in the equity financing field (Block et al., 2018). This development has made the market for entrepreneurial finance more complex (Wallmeroth et al., 2018). Entrepreneurs have a better possibility to seek financing that better matches the respective life-cycle phase of their startups. In turn, the increasing supply-side of equity financing has improved entrepreneurs' bargaining power during negotiations with equity investors (Bessière et al., 2020). Thus, the choice of entrepreneurs' funding alternatives evolves into a—as Bessière et al. (2020) call it—specific funding trajectory in which entrepreneurs can seek financing from various actors. Most studies so far consider various funding sources in

isolation (Drover et al., 2017); however, it would be fruitful for entrepreneurial finance research to investigate entrepreneurs' ultimate choice of an equity investor in a complex funding trajectory with different actors. Among others, there are not only independent venture capitalists but also dependent venture capitalists (e.g., corporate venture capitalists, bank-affiliated venture capitalists, and governmental venture capitalists), family offices, individual business angels and their networks, and different types of equity crowdfunding, which comprise the supply-side of entrepreneurial finance. For instance, expanding on our findings and continuing to explore and disentangle the effect of value-added services on entrepreneurs' investor selection across different types of equity investor provides an opportunity for future research to better contextualize whether entrepreneurs who raise equity have high preference heterogeneity concerning their investor choice. We are therefore looking forward to further research into this relevant but academically neglected topic of entrepreneurs' investor selection.

6. Conclusion

Value-added services are important to VC-backed startups' performance, but, to date, the influence of value-added services on entrepreneurs' venture capitalist selection has been nebulous. What specific value-added services do entrepreneurs perceive as important when selecting their venture capitalist, and why do they focus more on certain kinds of value-added services than on others? We decomposed the effect sizes of different value-added services that influence entrepreneurial decision making using a large-scale conjoint analysis. The picture that emerges is that entrepreneurs follow an intricate decision pattern when selecting venture capitalists based on value-added services. For example, next to the venture capitalist's exit experience, the operational network is the most important selection criterion for entrepreneurs, with the largest potential to grow and scale the entrepreneurial business. Drawing upon RDT, additional qualitative fieldwork identified that entrepreneurs' venture capitalist selection based on value-added services involves a strategic dependence-reducing action. Entrepreneurs have a

clear consideration of the appeal of value-adding characteristics depending on the venture capitalist's role, suggesting that entrepreneurs focus on a 'scout' providing access to external networks rather than a 'coach' offering strategic guidance and internal advice.

D. Essay 3: The field of banks in entrepreneurial finance—Multiple investment logics of German bank-affiliated venture capitalists¹⁸

1. Introduction

In the last two decades, banks have increasingly diversified their core business model of lending and expanded their business scope towards a beyond-banking business model such as a more active role in providing venture capital (VC) to innovative, entrepreneurial ventures (Andrieu, 2013; Andrieu & Groh, 2012; Fang, Ivashina, & Lerner, 2013). In the past, banking legislation prohibited banks from direct equity investment in firms (Hellmann et al., 2008), and banks only passively invested their own funds as limited partners in traditional VC funds. Especially in bank-based economies such as those found in several European countries, bank-affiliated VC has become a prominent funding alternative for high-tech entrepreneurial ventures because banks realized the dynamics that shape the availability of credit to ventures (Croce et al., 2015). European banks raised more than EUR 4 billion for VC investments, which contributes to 5.3% of total funds raised in Europe between 2007 and 2018 (Europe Invest, 2019). For instance, the second-largest European Bank, Banco Santander, recently made headlines due to its EUR 30 million investment in the Berlin-based fintech start-up Crosslands via its own VC spin-off Santander InnoVentures (Louven, 2019).

Even though the activities of bank-affiliated venture capitalists (BVCs) account for a significant part of VC activities in Europe, the academic literature on BVCs has received little attention from scholars. VC firms have long been regarded as a homogenous group, but possible differences in the investment behaviour and characteristics of organizations in independent and dependent institutional settings have not been sufficiently investigated (Croce et al., 2015). Investors whose parent companies are financial institutions are categorized as BVCs, and those

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whose parents are nonfinancial companies are categorized as corporate venture capitalists (CVCs; (Bertoni et al., 2019). Banks broadened their business model and became a main financial funder to VC firms (Black & Gilson, 1998). However, it has not been possible to obtain a uniform picture of BVCs: their investment behaviour should differ in terms of regulations and corporate objectives compared to that of CVCs (Cumming & Murtinu, 2016). In a similar vein, we have no answers yet about how BVCs conduct deals in terms of sourcing, screening, evaluating, approving, and monitoring, and about what influences the investment logics when considering two institutional environments—that is, the external VC world and the internal parent bank’s environment—in which BVCs operate.

Based on a qualitative research design, I empirically derive a conceptual model that explains German BVCs’ deal activities. My exploratory study is based on 27 in-depth interviews with 22 senior managers of German BVCs, supplemented by archival data and five further interviews as independent expert validation. By analysing those data sources, I could triangulate my findings across different perspectives, which helped me to achieve a better understanding of how and why certain investment logics of German BVCs evolve.

My findings indicate that German BVCs follow two broad investment logics, namely an autonomous versus a contingent investment logic, that rest on seven investment practices. Fundamentally, BVCs that are aligned with the external VC environment (the external focus of isomorphism) focus on investment practices that lead to an autonomous investment logic. In turn, BVCs that are aligned with the internal parent bank’s environment (the internal focus of isomorphism) focus on investment practices that lead to a contingent investment logic. The BVC’s focus on either exoisomorphic or endoisomorphic habits is triggered by its *raison d’être* (purely financial, strategic/financial, promotional/financial). Additionally, certain stimuli (liaisons with entrepreneurs, independent venture capitalists, parent banks) are positively

related to the two foci of isomorphism (exoisomorphism versus endoisomorphism). Lastly, certain BVCs neither follow an autonomous nor a contingent investment logic because they focus on both exoismorphic and endoisomorphic habits, thus leading to a third investment logic—that is, a hybrid investment logic.

This paper makes three contributions. First, I extend the literature stream on BVCs by explaining and deriving BVCs' investment logics and investment practices (Bertoni et al., 2015; Bertoni et al., 2019; Croce et al., 2015). Second, I contribute to institutional theory by showing how BVCs' investment logics evolve depending on their institutional environment (Lounsbury, 2007; Souitaris & Zerbinati, 2014; Souitaris, Zerbinati, & Liu, 2012; Thornton et al., 2012). I elaborate that the focus of isomorphism determines the evolvement of the BVC's investment logics. For example, a BVC with an autonomous investment logic operates its VC activities in line with the external VC environment. Third, I contribute to the literature on the hybridization of field-level specific logics by pointing out that BVCs also have a split focus on isomorphism and in that case, they follow a hybrid investment logic, which is influenced by both the BVC's exoismorphic and endoisomorphic habits (Battilana & Lee, 2014; Besharov & Smith, 2014; Pache & Santos, 2010; Souitaris et al., 2012).

2. Theoretical background

2.1 Independent, corporate, and bank-affiliated venture capital investing

Scholars have published numerous articles on venture capitalists' investment processes by examining different stages such as sourcing, screening, evaluation, due diligence, and deal structuring, as well as syndication, monitoring, and ex-post value-adding activities (Gompers & Lerner, 2004b; Tyebjee & Bruno, 1984; Wright & Robbie, 1998). Venture capitalists rely on referrals to source their deal flow, which helps investors to reduce information asymmetries and adverse selection, thus reducing venture capitalists' inability to evaluate founders' potential before deals (Amit, Glosten, & Muller, 1990; Fiet, 1995). Venture capitalists' investment

criteria, such as the new venture's management team (Franke et al., 2008; Macmillan et al., 1985), the business itself (Kaplan et al., 2009; Petty & Gruber, 2011), and its financials (Fried & Hisrich, 1994), explain how these investors select their portfolio firms.

The existing academic literature on CVCs has investigated whether the practices of independent venture capitalists (IVCs), such as organizational structure, autonomy, compensation models, and syndication behaviour, could be transferred to CVCs (Dushnitsky & Shapira, 2010; Hill, Maula, Birkinshaw, & Murray, 2009; Maula, Autio, & Murray, 2005). Concerning the organizational structure, CVCs can be clustered into four different structural forms (Dushnitsky, 2006). Corporations usually practice their corporate VC activities via direct investments (managed by a specific internal business unit), via wholly owned subsidiaries (the VC activities are outsourced to a subsidiary), via dedicated funds (the corporation and an IVC co-manage the VC activities), or via a CVC as a limited partner (the CVC invests in an IVC). These organizational structures determine the practices of CVC investment managers, and a link to isomorphic tendencies becomes apparent (Maula, 2007). Similarly, the organizational structure of a CVC can influence its decision-making autonomy. Due to the close link to their parent companies, CVCs usually cannot act completely independently without approval from the parent (Siegel et al., 1988). Thus, CVCs' autonomy, compensation models, syndication, and staging are related to CVCs' performance (Hill et al., 2009). More detailed, performance-oriented compensation models in CVCs are linked to smaller syndicates, early stage investment activities, and successful exits (Dushnitsky & Shapira, 2010).

VC scholars have primarily focused on research questions that are biased towards IVCs and CVCs. However, we cannot simply transfer findings to BVCs. BVCs are distinctive in that they are affiliated with financial institutions and that they differ in terms of their motivations, institutional logics, cultural mindsets, and regulatory environments. Recently, scholars explored

broad structural patterns of bank-affiliated VC versus independent, corporate, and governmental VC investment activities such as deal selection, objectives, performance, and exit behaviour. For example, the opportunity to build profitable lending relationships for their parent banks by increasing the debt capital demand of their portfolio firms is one central objective of BVCs (Hellmann et al., 2008; Mayer, Schoors, & Yafeh, 2005; Murtinu & Johan, 2018). Furthermore, BVCs do not exhibit a distinct industry focus, prefer local proximity, and focus on new ventures with low risk in terms of both firm age and size (Bertoni et al., 2015). Syndication behaviour was also linked to BVCs' investment patterns in that banks are more likely to join larger syndicates led by IVCs (Murtinu & Johan, 2018). Overall, the literature on bank-affiliated VC is primarily based on archival data. While those findings provide valuable contributions to the field, they do not help us to address the theoretical implications of BVCs, for example, in terms of objectives, set-up structure, and mind-set, regarding their investment logics (Bertoni et al., 2019). This study attempts to address this research gap.

2.2 Multiple institutional logics and the concept of isomorphism

The concept of multiple institutional logics is grounded in the emerging literature stream on institutional theory. Institutional logics focus on 'broader cultural beliefs and rules that structure cognition and guide decision making in a field' (Lounsbury, 2007, p. 289). The focus is not only on adaptation to the environment, but individual and situation-specific logics are also considered, which take into account further aspects such as individuals within the organization and the cultural and social structure of the organization. Hence, while organizational actors and the organization itself can actively influence and help to shape their environment, actors and organizations are nevertheless influenced by their environment (Thornton et al., 2012). Accordingly, extant research provides evidence that the existence of multiple institutional logics in an institutional field (e.g., a specific industry) leads to variation and adoption of

practices amongst organizations (Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury, 2011; Pache & Santos, 2010; Thornton et al., 2012).

More specifically, a central research stream in institutional theory focuses on the emergence of those institutional logics (Thornton et al., 2012). Contemporary scholars have provided us with several explanations of why certain logics occur, how multiple logics occur in parallel, and how logics change over time and are divergent. Institutional logics, amongst others, can be explained by the occurrence of critical events (Nigam & Ocasio, 2010), structural changes in the field (Dunn & Jones, 2010), institutional entrepreneurs who extend dominant logics used within their organizational environment (Greenwood & Suddaby, 2006), and the geographical separation of individuals in the field (Lounsbury, 2007). However, Thornton et al. (2012) concluded that we still need further research on how those multiple field-level logics emerge.

Souitaris et al. (2012) show that CVCs' focus of isomorphism does not follow one specific logic; instead, their logics are rather broadly motivated in the middle of two divergent worlds. CVCs either follow logics associated with the internal environment of their parent (endoisomorphism) or with the external industry environment (exoisomorphism). Specifically, I build on those findings and extend this piece of work to show how the focus of isomorphism leads to the emergence of multiple field-level logics in the context of BVCs.

3. Methodology

3.1 Research context and rationale

My research context is the market for bank-affiliated VC in Germany. After France, with 355 bank-affiliated VC deals, Germany is the second-largest European provider of bank-affiliated VC, with 171 deals closed during the last decade (Crunchbase, 2019). German BVCs provide a particularly appropriate setting in which to examine the above-outlined research questions, mainly due to three reasons. First, Germany represents a bank-based economy, which

traditionally provides credit to firms and other institutions (Croce et al., 2015). In recent years, however, banks have become a substantial VC provider for high-tech entrepreneurial ventures next to their traditional lending activities (Murtinu & Johan, 2018). Second, the German banking sector consists of a heterogeneous banking landscape (Hoggarth, Milne, & Wood, 2001), that is, a unique system of private, public savings, other public banks such as promotional banks, and cooperative banks characterized by different institutional structures, investment patterns, and objectives (Bertoni et al., 2015). Third, the (German) banking landscape has long been a traditional industry, but it has experienced an increasing need to innovate and transform its business. For example, due to the growing number of emerging fintech platforms, banks can make use of these competitors and cooperate with them, and gain insights about disruptive trends and technologies to improve their business models (Lee & Shin, 2018). Consequently, banks have established their own VC units to gain exposure to high-tech entrepreneurial ventures, which enables them to adapt to the structural changes in the financial services industry.

3.2 Research design and sample

To investigate how BVCs invest, how their investment logics evolve, and whether they conduct deals differently from IVCs, I applied an exploratory qualitative research approach (Miles & Huberman, 1994; Patton, 1990; Strauss & Corbin, 1998). More specifically, I used an inductive research design that enabled me to move from specific field observations to a more granular, generalized view. This helped me to fully understand the rather atypical behaviour of BVCs in the VC ecosystem. Since little is known about BVCs, and given my focus on ‘how’ and ‘why’ questions rather than ‘what’ or ‘how many’ questions, a qualitative-empirical research design is particularly appropriate to explain their peculiarities (Yin, 1994).

This paper builds on a sample of 20 active German bank-affiliated VC firms that are affiliated with either a private bank, a public savings bank, a promotional bank, Landesbank, or

a cooperative bank. My emphasis on BVCs in Germany allows me to study a sample that is homogenous concerning two theoretically relevant variables. First, I avoid having cross-country contingencies such as different banking regulations and monetary policy and, second, I impede any distortion by cultural factors.

Consistent with the concept of building theory, I chose the sample based on purposive (theoretical) principles rather than statistical considerations (Eisenhardt & Graebner, 2007; Silverman, 2006), especially in gathering material from different market players with different characteristics in the bank-affiliated VC market. Participating BVCs differ in terms of several practically relevant characteristics such as type of parent bank, fund size, deal size and investment stage. This promoted maximum variation in the sample (Eisenhardt & Graebner, 2007), which comprises cases covering a broad spectrum of positions regarding the phenomenon under investigation, thus matching the research aims (Miles & Huberman, 1994). The sampling procedure enabled me to study a variety of BVCs to either reveal practice differences in bank-affiliated VC firms across Germany or, if common patterns were uncovered, I could remove alternative explanations (Yin, 1994).

To build the sample, I proceeded as follows. To obtain a complete list of the population of German BVCs (cf. Koironen, 2002), I obtained a list of 63 registered BVCs from the German Private Equity and Venture Capital Association. The German Private Equity and Venture Capital Association (BVK) is an industry association that represents the interests of the German private equity branch. It comprises all active firms in Germany offering financing, from VC, to growth equity, to private equity (e.g., buy-out financing). To ensure that this list covered the entirety of German bank-affiliated VC firms, I triangulated it with other lists of German banks and with several bank-specific websites. I contacted all 63 BVCs, and 22 managers of 20 bank-affiliated VC firms agreed to participate in the study. This represented a good response rate

given the small size of BVCs in Germany and the well-known difficulty of researching equity investors due to confidentiality concerns and investment managers' time constraints (Birley, Muzyka, Dove, & Rossell, 1995).

I interviewed top-level managers who have all gained substantial experience in the VC and (investment) banking industry. The interview partners differ in their professions and academic and professional education. Furthermore, the observed BVCs invest in the pre-seed, seed, early, and growth stages across different industries, mainly in Germany but also across Europe, the United States, and Israel, with initial ticket sizes from EUR 25,000 to EUR 10 million. Most of the BVCs are set up as corporate subsidiaries of the respective banks, with one or more dedicated funds, and the majority with declared dual objectives. To facilitate data triangulation, I additionally interviewed four managing directors from banks that i) strictly refuse such business, ii) have recently closed their BVC, iii) are active in related businesses (e.g., venture lending), and iv) are in current conversations about becoming active in VC activities. Finally, to increase confidence in the findings, one further industry expert provided me with valuable insights into the market for German BVCs. I used the cases and then built upon the knowledge of this industry expert to corroborate the plausibility and robustness of the findings (Miles & Huberman, 1994).

Tables D-1, D-2, and D-3 summarize the characteristics of the interviewees and the respective BVCs.

Table D-1: Characteristics of interviewees from bank-affiliated venture capitalists

Pseudonym of interviewee	Profession	Education	Professional experience	Age category (in years)	Gender	Venture capital experience (in years)
Alpha	CEO and Managing Partner of the BVC	Electrical Engineering (MSc) Business Administration (MBA)	Start-up experience; various roles as investment manager; 14 supervisory board seats	35–40	M	18
Beta	Investment Manager	Business Economics (MSc)	Fintech industry; 6 supervisory board seats	30–35	M	7
Gamma	Vice President	Business Administration (MSc)	Various strategic roles within a private bank	30–35	M	3
Delta	Investment Manager	Business Informatics (BSc)	Various roles within the bank's VC arm	30–35	M	10
Epsilon	CEO and Managing Director of the BVC	Economics (Dipl.) Business Economics (PhD)	Various front-office and strategic roles within the bank and its different VC arms; member of the ministry of economics	45–50	M	12
Zeta	Investment and Project Manager	Business Administration (MSc)	Corporate banking analyst; manager of the bank's venture centre (5 y)	25–30	M	5
Eta	Managing Director of the BVC	Business Administration (MA) Certified Private Equity Analyst	Various roles within a public savings bank's innovation and venture capital centre; 2 supervisory board seats	35–40	M	8
Theta	CEO and Managing Director of the BVC	Aerospace Engineering (MSc) Business Administration (MBA)	CVC experience in the infrastructure and financial services industry; investment manager of a petroleum and natural gas company; 8 supervisory board seats	40–45	M	12
Lota	Investment Director	Business Informatics (Dipl.)	Manager in the manufacturing industry; various roles as investment manager; 6 supervisory board seats	50–55	M	18
Kappa	CEO and Managing Director of the BVC	Economics (Dipl.)	Auditor for several public savings banks; active politician; manager of the bank's VC and PE business; board member of a public savings banks	55–60	M	19
Lambda	Director	Business Administration (BSc)	Various investment management roles within a public savings bank	35–40	M	12

Note: This table displays the demographics of the interview participants: 22 investment managers at 20 bank-affiliated VC firms.

Table D-1: Continued

Pseudonym of interviewee	Profession	Education	Professional experience	Age category (in years)	Gender	Venture capital experience (in years)
My	Investment Manager	Business Administration (BSc)	Various investment management roles within a public savings bank	35–40	M	4
Ny	CEO and Managing Director of the BVC	Business Administration (Dipl.) Business Administration (PhD)	Turnaround management consultant; various roles as an investment manager	40–45	F	12
Xi	CEO and Managing Director of the BVC	Industrial Engineering and Management (Dipl.) Business Administration (PhD)	M&A experience; manager strategy consulting; founder; management experience in several PE and VC funds; active business angel; several supervisory board seats	50–55	M	19
Omikron	CEO and Managing Director of the BVC	Business Economics and Mechanical Engineering (MSc) Economics (Dipl.)	Corporate finance experience; various roles as investment manager; 5 supervisory board seats	50–55	M	19
Pi	CEO and Managing Director of the BVC	Business Administration (MA) Executive Business Program	Various front-office and strategic roles within a federal state bank	35–40	M	5
Rho	Board Member and Managing Director of the bank	Business Administration (MA) Executive Business Program	Various management roles within a cooperative bank; bank board member; member of the BVC investment committee	50–55	M	5
Sigma	CEO and Managing Director of the BVC	Law (State Examination) Executive Business Program	Various front-office roles within a private and cooperative bank	50–55	M	5
Omega	CEO and Managing Director of the BVC	Business Administration (Dipl.)	Various front-office roles within a public savings bank; various roles as an investment manager	45–50	M	17
Digamma	CEO and Managing Director of the BVC	Business Administration (Dipl.)	Various management roles within a federal state bank; various roles as an investment manager	55–60	M	18
Sigma	Managing Director of the BVC	Business Administration (Dipl.)	Various management roles within a business development bank; founder; various roles as an investment manager	40–45	M	20
Heta	Managing Director of the BVC	Business Administration (Dipl.) Business Administration (PhD)	Various senior roles as an investment manager in a business development bank	40–45	M	21

Acronyms: BSc = Bachelor of Science; BVC = bank-affiliated venture capitalist; CEO = chief executive officer; CVC = corporate venture capital; Dipl. = Diplom (equivalent to a master's degree); MA = Master of Arts; MBA = Master of Business Administration; MSc = Master of Science; M&A = mergers and acquisitions; PE = private equity; PhD = Doctor of Philosophy; VC = venture capital

Table D-2: Characteristics of bank-affiliated venture capital firms/units

Pseudonym of interviewee	Type of parent bank	Structure of the VC business	Active since	# of FTE	Investment vehicle	Funding size (in EUR m)	# of portfolio firms	Declared objectives	Stage of investment	Geography of investment
Alpha	Private bank	Wholly owned subsidiary	2014	10	Fund structure	–	14	Financial	Early stage Growth stage	International
Beta	Private bank	Wholly owned subsidiary	2014	26	Evergreen structure	–	17	Strategic/ financial	Seed stage Series A	National
Gamma	Private bank	Direct investment	2016	4-6	Evergreen structure	–	–	Strategic/ financial	All stages after proof-of-concept is given	International
Delta	Promotional bank	Wholly owned subsidiary	1995	25	Fund structure	300	75	Promotional/ financial	Seed stage	Regional
Epsilon	Promotional bank	Direct investment	1995	11	Fund structure	75	45	Promotional/ financial	Early stage	Regional
Zeta	Promotional bank	Wholly owned subsidiary	2002	45	Fund and evergreen structure	–	250	Promotional/ financial	Seed stage Early stage	Regional
Eta	Public savings bank	Direct investment	2008	4	Fund and evergreen structure	50	25	Promotional/ financial	Early stage	Regional
Theta	Landesbank	Wholly owned subsidiary	1998	9	Fund structure	20	14	Financial	Seed stage Series A/B	International
Lota	Promotional bank	Wholly owned subsidiary	1997	17	Fund structure	250	76	Financial	Seed stage Series A	Regional
Kappa and Lambda	Public savings bank	Wholly owned subsidiary	1999	6	Evergreen structure	–	–	Promotional/ financial	Later stages	Regional

Note: This table displays the characteristics of the respective interviewees' (cf. Table D-1) affiliated venture capital firms/units they work for (N = 20).

Table D-2: Continued

Pseudonym of interviewee	Type of parent bank	Structure of the venture capital business	Active since	# of FTE	Investment vehicle	Funding size (in EUR m)	# of portfolio firms	Declared objectives	Stage of investment	Geography of investment
My	Public savings bank	Wholly owned subsidiary	1998	4	Evergreen structure	34	–	Financial	Later stage	Regional
Ny	Public savings bank	Wholly owned subsidiary	1983	6	Evergreen structure	11	~60	Promotional/financial	Early stage	Regional
Xi	Promotional bank	Wholly owned subsidiary	2017	23	Fund of Funds*	2000	>25	Financial	Later stage Growth stage	International
Omikron	Public savings bank	Wholly owned subsidiary	1988	15	Fund structure	–	–	Financial	Seed stage Early stage	Regional
Pi	Landesbank	Direct investment and wholly owned subsidiary	2016	4	Evergreen structure	25	–	Strategic/financial	Early stage	National
Rho and Sigma	Cooperative bank	Wholly owned subsidiary	2016	4	Fund structure	–	12	Strategic/financial	Early stage	International
Omega	Public savings bank	Wholly owned subsidiary	2008	5	Fund structure	–	–	Financial	All stages	Regional
Digamma	The joint venture of a cooperative bank, promotional bank, and Landesbank	Wholly owned subsidiary	1971	9	Fund structure	110	265	Promotional/financial	Later stage	Regional
Sigma	Promotional bank	Wholly owned subsidiary	1999	6	Evergreen structure	80	28	Financial	Early stage Later stage	Regional
Heta	Promotional bank	Direct investment	1972	7	Evergreen structure	55	32	Financial	Early stage	Regional

*Xi is a fund of funds investor and invests in European venture capital funds.

Table D-3: Characteristics of other industry experts and related institutions

Pseudonym of interviewee	Type of parent bank	Profession	Education	Professional experience (including current position)	Age category (in years)	Gender
Tau	Private bank*	Head of Strategy	Business Administration (Dipl.)	Various strategic and managing roles within a private bank	50–55	F
Epsilon	Public savings bank**	Managing Director	German Savings Bank Academy	Various managing roles within a public savings bank	55–60	M
Pi	Private bank***	Managing Director	No academic background	Various strategic and managing roles within a private bank; founder of startups and an incubator; business angel	50–55	M
Chi	Public savings bank****	Board Member and Managing Director	Business Administration (MSc) Business Informatics (MSc) Business Administration (MBA) Business Administration (PhD)	Various strategic and managing roles within a public savings bank; board member of a public savings bank	40–45	M
Psi	PE/VC association	Head of market information and research	Business Administration (Dipl.)	Various roles within the German Private Equity and Venture Capital Association	40–45	M

Note: This table displays the characteristics of other industry experts relevant to the bank-affiliated venture capital sector in Germany (N = 5).

Acronyms: CEO = chief executive officer; Dipl. = Diplom (equivalent to a master's degree); MBA = Master of Business Administration; MSc = Master of Science;

PE = private equity; PhD = Doctor of Philosophy; VC = venture capital

*Tau has not yet been active in the venture capital field and does not intend to do so from a strategic point of view.

**Epsilon was active in the venture capital field and is currently liquidating the business due to strategic reasons.

***Pi is one of the world's largest venture lenders for new ventures. Due to clauses in venture lending agreements, the bank is also involved in some new ventures, but this is not the primary objective.

****Chi is currently not active in the venture capital field but considers the venture capital field as an interesting hedging opportunity.

3.3 Data collection

I conducted 27 semi-structured interviews that varied in length and lasted on average 40 minutes. A total of 21 hours of interview material was recorded. The interviews were conducted in person, by videoconference, and by telephone and followed an interview guideline that helped me structure the interview process. I created a first version of the interview guideline based on a literature review in the field. I then pretested the interview guideline with one BVC and modified it thereafter. Finally, I critically discussed the guideline and the respective research design with researchers in the field.

During the data collection period, I continuously and iteratively adapted the interview guideline. I started a series of interviews with an introduction and then directly moved into the research topic. First, I asked interviewees to give an overview of the BVC they work for, including the firm's history from foundation to the present and its core investment activities. Second, I encouraged participants to share their views on and beliefs about the German market for bank-affiliated VC and the main motives for becoming involved in this market. Finally, I asked the interviewees about how their broader belief system may shape the perception and behaviour of the BVC and how those logics differ from those of other types of venture capitalists. During each interview, I asked open-ended questions so that interviewees could express their thoughts to allow for flexible responsiveness. Except for one conversation, I recorded and transcribed the interviews verbatim.

To triangulate the qualitative data (Jick, 1979; Jonsen & Jehn, 2009), I drew on additional data sources, such as the Crunchbase data set, private data from BVK, the BVCs' and their parent companies' websites and annual reports, and selective specific internal documents. For each BVC, I then created a detailed memorandum containing all relevant information from the archival data. Information from those sources helped me to understand the market for bank-affiliated VC and provided me with important background information on

the respective investors. Furthermore, triangulation facilitated the interpretation of the conversations and the comparison of each investor's activities to those of their peers. Whenever I missed information, I contacted the participants again during follow-up phone calls.

3.4 Data analysis

While gathering the interview material, I simultaneously coded and categorized it (Glaser & Strauss, 1967) using the online software program MAXQDA, which provides support in the qualitative content analysis of unstructured data such as interviews. The first data analysis step was to build an initial list of codes based on prior knowledge from relevant literature (VC [investment process], dependent VC, and institutional theory; (Miles & Huberman, 1994). I then expanded the initial coding system by going back and forth between the data. Moreover, I coded the transcripts several times and changed the order of the interviews in that process to avoid cognitive bias. This enabled me to further categorize and recategorize (Reay, 2014) the data to identify meaningful patterns (Miles & Huberman, 1994).

In the second step, I engaged in a cross-code analysis. I merged similar codes and excluded those that I felt were uninformative and irrelevant for the emerging concepts (Gioia et al., 2012). During the course of the study, I followed an iterative, inductive, and ongoing process to build the final coding system. I developed the open first-order concepts into axial second-order themes (Strauss & Corbin, 1998), and finally categorized those into a meaningful, aggregate system of higher-dimensional categories (Mayring, 2010; Miles & Huberman, 1994). When I coded the material, I coded both short phrases and whole paragraphs to maintain the original essence of the interviewees' statements. I continued the data sampling until theoretical saturation was reached. After several rounds of discussion, research fellows in the field agreed that no additional material was necessary to further expand the final categorization system (Glaser & Strauss, 1967). The data analysis is illustrated in Figure D-1.

Figure D-1: Data structure

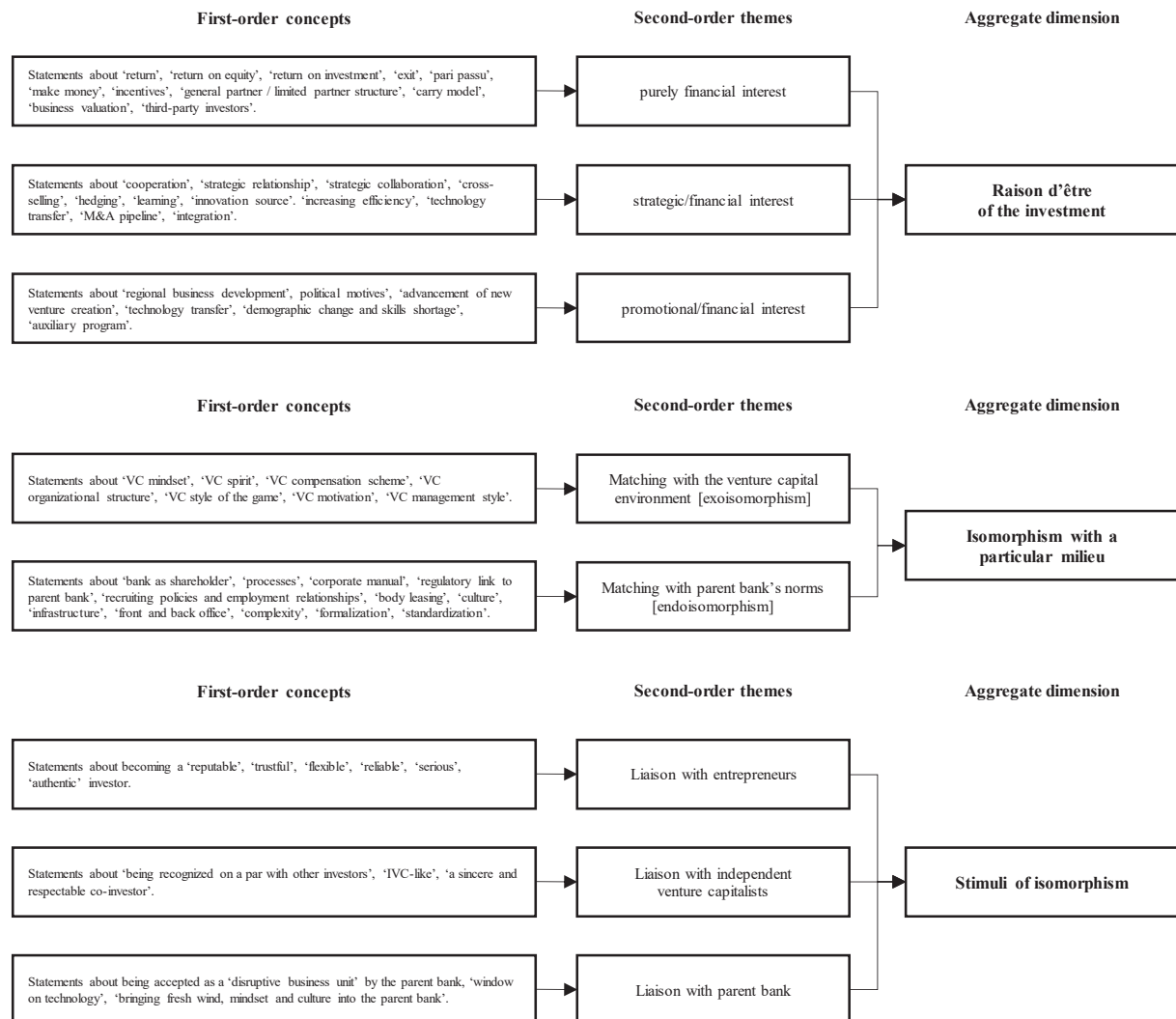
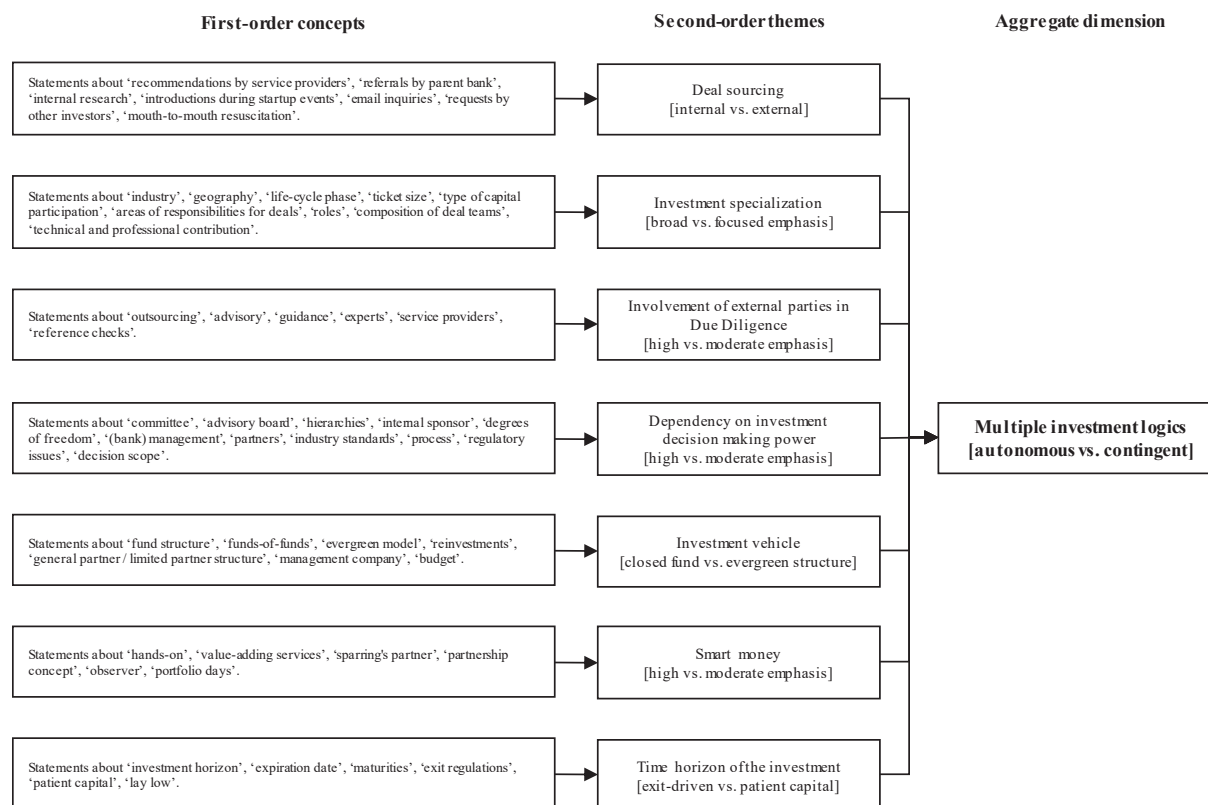


Figure D-1: Continued



Moreover, I used the material that I coded and categorized for thematic content analysis. I applied an inductive process (Mayring, 2010) to move the coding and categorization towards abstraction, which enabled me to build a new ‘theoretical framework—the core of the emerging theory’ (Glaser & Strauss, 1967, p. 40). As part of the analysis, I iteratively moved between the qualitative evidence of the data material and extant literature (Denzin & Lincoln, 2000; Silverman, 2006) to build a theory on BVCs’ multiple investment logics.

Finally, to assess the reliability of the coding, another research fellow who had not been involved in this study but who had been informed about the German bank-affiliated VC market acted as an auditor and independently coded the material and looked for emergent themes in the research context (cf. Reay, 2014). I compared and extensively discussed the results with research scholars in the field and adapted the categorization scheme until we reached consensus.

4. Findings

4.1 Variation in the *raison d'être* of bank-affiliated venture capitalists

Based on the cross-case analysis, the observed BVCs can be broadly categorized into three groups according to their investment motivation—that is what I call the *raison d'être* of the BVC. There is no hard cut-off criterion for the three different types of *raison d'être*, and the categorization has been done according to the content of the transcripts. This means that even though a BVC might be strategically driven, it cannot be generally excluded that this investor does not follow any financial or other goals.

Purely financial raison d'être. The purely financially oriented investment motivation of a VC investor is solely concerned with a focus on financial metrics such as the internal rate of return or the time to exit the portfolio firm (Gompers, Gornall, Kaplan, & Strebulaev, 2020; Sørensen, 2007). Amongst others, it emerged that BVCs can be driven by a purely financial *raison d'être* that is like that of an IVC. This has been evidenced specifically by the participants' investment activities and by their way of making investment decisions, as illustrated by the following quotation:

We are a pure financial investor. We are predictable since our firm is only interested in increasing portfolio firm valuation without having any other secondary interests. (Omikron)

Managers in bank-affiliated VC firms have a clear perception of how they define the financial orientation of the respective bank's VC arm. The following quotation underlines the pressure from the parent bank to earn money, which is, in turn, reflected in Theta's investment goals:

We are held to earn money and not just to sit here in our warm offices. Our parent bank wants us to deliver performance. You can only deliver performance in terms of numbers; that is the IRR. (Theta)

Strategic/financial raison d'être. The strategically/financially oriented investment motivation of a BVC reflects the goal to secure a strategic fit for the bank and to transfer this

fit to different divisions within the bank (Berger & Schaeck, 2011; Hellmann et al., 2008). It surfaced from the data that a bank may use its VC arm to adapt its business model to disruptive industry changes. Furthermore, banks need to be ‘on the cutting edge’ (Beta) to determine how the fintech industry may evolve. Therefore, BVCs are seen as learning platforms for their parent banks, and banks use VC units for those kinds of strategic investments. As an investment manager put it:

It is important to note that the most important motive of our investment activities is always to organize further learning for our bank. [...] We want to learn from this new industrial logic, to be in direct contact with the start-up environment and implement a learning process. (Rho and Sigma)

When pursuing their strategic goals, BVCs additionally aim to ‘build-up cooperation with innovative, new ventures’ (Pi). Conversely, a BVC’s strategic habit to enter cooperation or strategic alliances with portfolio firms through capital participation creates value for the parent bank. Moreover, BVCs invest in new, innovative ventures to hedge their parent banks against disruptive innovations that the banks cannot offer by themselves. Thus, the strategic/financial *raison d’être* of BVCs is not only oriented for opportunities for the bank’s operative business model but also looks for activities the bank does not operate in, as illustrated below:

[...] I am just building a portfolio by various investments. These do not necessarily have to be portfolio firms that might be related to the bank’s operational business but rather those that will hedge our parent bank when the banking business is disrupted. We will have a hedge in the form of capital investments. (Pi)

Additionally, bank-affiliated VC activities aim to groom portfolio firms and to cross-sell banking products to portfolio firms during later life-cycle phases. For example, one bank’s CEO and the BVC’s managing director stated:

We have the start-up market right outside the door here in the capital. We see ourselves as an entrepreneurial bank. We aim to increase our visibility in that entrepreneurial sector. (Rho and Sigma)

Finally, BVCs may focus on strategically oriented goals, but the resulting motivation might be influenced by certain financially oriented goals, such as preventing that the BVC faces a total loss of the invested capital:

To put it bluntly and honestly: even with every strategic investment, there is always a little bit of the financial aspect that cannot be ignored. (Beta)

Promotional/financial raison d'être. The promotionally/financially oriented investment motivation of a BVC is linked to domestic new venture investments having a mission to strengthen the regional entrepreneurial environment (Bertoni et al., 2019). In addition to the interview material, I found ample archival evidence that especially BVCs with a promotional/financial *raison d'être* belong to public state-owned banks, which include public savings banks and promotional banks. Especially BVCs with a promotional/financial *raison d'être* do not act like purely financially driven investors. In turn, both regional focus and political intentions dominate the promotional *raison d'être* of the investment. This explains the downstream focus on a financial return of those BVCs since state-owned banks do not primarily engage in business for profit, as the CEO of a BVC described:

We have no claim like IVCs, which strive for return expectations of X times the capital invested. Due to our parent bank's history, this is not necessary for us. In the first instance, we need to put a sustainable focus on creating jobs and supporting regional venture development. (Digamma)

This investment pattern illustrates that BVCs as part of state-owned banks aim to contribute to the promotion of trade, industry, and innovation in their regions. Moreover, the sustainability of the investment also influences promotional motivation and affects the investment decision making of BVCs, as Lota noted:

We have a discussion on sustainability, which is an important topic, and it has always been important for our parent bank. We understand sustainability in the sense that we develop ventures so that those ventures can create new jobs in our city. I want to add that we aim to find ventures that have the chance to maintain those new jobs in the long term, not just during the initial start-up phase. (Lota)

Finally, it is evident that even though the promotional motivation might prevail, those BVCs also follow financial interests to some degree. I concluded that the promotional/financial *raison d'être* is mainly attributed to BVCs that belong to state-owned banks. Yet it is important to understand—as it is the case with BVCs having a strategic/financial *raison d'être*—that the financial motivation is usually a partial component in a BVC's *raison d'être* when striving towards a promotional direction, as pointed out by Digamma:

We do not expect a return of 20 to 30 times the invested capital as traditional VCs do. We don't necessarily strive for those aims. However, we would not be happy if our investments fail. We need to calculate our expected default, though our expectations differ from those of independent VCs. (Digamma)

Table D-4 provides comparative quotations related to all three *raison d'être* types.

Table D-4: Comparative quotations on the raisons d'être

Raisons d'être	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selected quotations
<i>Purely financial</i>	Alpha, My, Omikron, Omega, Theta, Lota, Xi, Sigma, Heta	33%	50%	50%	0%	<p>The only filter that I use is the question: 'Can I make damn much money for my fund?'. That means I am predictable, as I have the same incentives as Earlybird, Accel, or Index have. [...] In the end, I am interested in whether there will be a reasonable probability that my investment will make a multiple of ten times in Series A and a multiple of five times in Series B. (Alpha)</p> <p>When we make VC investments, we need a clearly defined goal of why we do that. I think that the only true goal to be active in the VC cosmos is to earn money. If I want to follow that goal, I need to ask myself how I might achieve that. And the only way is to act independently from any strategic considerations. (Lota)</p> <p>I want to invest my money and ideally, I just want to get more back. Otherwise, I have no other primary interests. (Heta)</p> <p>We send a clear signal to our fund investors that we manage money, which is only linked to achieving a return and which has a repayment claim. (Omega)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-4: Continued

Raisons d'être	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selected quotations
<i>Strategic/financial</i>	Beta, Gamma, Pi, Rho and Sigma	67%	0%	10%	100%	<p>[The BVC] is our parent bank's R&D centre. That means that we use our investments to test use cases, which might be integrated into the financial services industry within the next five to ten years. One of our key goals is, therefore, prototyping. If the investment is going to be successful, we can hand it over to our parent bank so that it might be integrated there. (Beta)</p> <p>In the middle of this ecosystem around our parent bank, the value will be created, and this value cannot be fully absorbed by our parent bank. From an economic perspective, BVC investments make sense to hedge the bank's business model and to optimize the bank's risk-return profile. (Gamma)</p> <p>We try to change our bank with the established business model, but in the end, it is all about a competition against time and the bet on the right strategy. So, if one of our portfolio stories works out, then from an overall perspective, it is like a hedging strategy for the bank. (Rho and Sigma)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-4: Continued

Raisons d'être	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selected quotations
<i>Promotional/financial</i>	Eta, Kappa and Lambda, NY, Delta, Epsilon, Zeta, Digamma	0%	50%	40%	0%	<p>'Region first', that is why our parent bank, a public savings bank, established this BVC unit. Officially, the bylaws of our parent bank say that regional business development is the primary aim of our VC activities. (Eta)</p> <p>We invest in companies to make them big, to make them successful, but here on-site in our region. We aim to find new ventures locally. (Ny)</p> <p>We are a state-owned bank. We do our VC business especially from the perspective of a development bank; that is, to support new and innovative technology-oriented start-ups. All our funds are promotion oriented. (Epsilon)</p> <p>From our view, there is a clear goal to strengthen our region with VC money. (Zeta)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

4.2 The focus in two institutional environments

I then explored in what way BVCs' *raison d'être* lead to a certain focus of isomorphism within the organization. BVCs with a purely financial *raison d'être* have aligned with the traditional VC model by adopting characteristics such as the compensation model based on carried interest, the organizational set-up structure as a general partner and limited partner structure, the working style, culture, and mindset from the VC ecosystem. Lota's statement supports the finding that a BVC with a purely financial *raison d'être* aims to adopt the traditional VC structure to be recognized as a *pari passu* investor:

As a BVC, we simply have to document independence and show that we are a traditional plain, vanilla VC that can offer top benefits to founders, especially when thinking about our banking affiliation. (Lota)

Conversely, BVC programs implemented by interviewees with a strategic/financial or a promotional/financial *raison d'être* are primarily aligned with the parent bank's organization. For example, the interviews have shown that BVCs adapt to the parent bank's organization in terms of human resources issues, complexity, flexibility, standardization of scope of duties and processes, branding of VC activities, regulatory affairs, and the mindset of employees. Moreover, BVCs operate investment teams that regularly manage the portfolio. However, when transactions arise, some BVCs again selectively examine which additional employees from the parent bank might be added to work on the deal. Additionally, many BVCs employ investment managers and administrative employees who do not work as a dedicated team and who have a broad scope of duties, such as sourcing deals, performing due diligence tasks, and monitoring current portfolio firms.

Furthermore, BVCs cannot 'play the traditional VC game' (Digamma) IVCs can play, as BVCs are more regulated in the direction of the allocation of funds. This is also reflected in the BVCs' autonomy to approve deals. Many BVCs in the sample face a complex and inflexible deal approval chain, which is due to the close link to the parent bank:

The back office must always give the front office an affirmative vote, otherwise a credit institution cannot bring money on the market today. Since we are close to a credit institution, we have simply taken over that process in our VC business. (Kappa and Lambda)

Overall, I found that BVCs can be broadly clustered as isomorphic, with two distinct institutional milieus (the traditional VC world and the parent bank's organization). Table D-5 presents comparative quotations on these findings.

These findings broaden the conceptual understanding of institutional theory by proposing that BVCs run their VC activities in two distinct milieus based on their *raison d'être*. This could be either the BVC's link with the external, traditional VC world (the case of exoisomorphism) or its link to the internal organizational structure of the parent bank (the case of endoisomorphism (cf. Souitaris et al., 2012). That is, BVCs with a purely financial *raison d'être* strive for the traditional VC model, thus implementing exoisomorphic habits that aligns with those of IVCs outside the focal organization. In turn, BVCs with a strategic/financial or promotional/financial *raison d'être* are oriented towards their parent bank and being influenced by the focal parent bank's activities by focusing on endoisomorphic habits. Drawing on these findings, I propose the following:

Proposition 1.a. The existence of a purely financial *raison d'être* drives BVCs' exoisomorphic habits.

Proposition 1.b. The co-existence of a strategic/financial *raison d'être* drives BVCs' endoisomorphic habits.

Proposition 1.c. The co-existence of a promotional/financial *raison d'être* drives BVCs' endoisomorphic habits.

Table D-5: Comparative quotations on the focus of isomorphism

Isomorphism within a particular milieu	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selected quotations
<i>Exoisomorphism</i>	Alpha, My, Omikron, Omega, Theta, Lota, Xi, Sigma, Heta	33%	50%	50%	0%	<p>We do get a carry if the funds perform well. That is not on a deal basis but a fund basis. We do participate, as investment managers from IVCs profit from investment activities. (Lota)</p> <p>Our parent bank is a public institution and has regulations, applications are made, there are officers. We do not want to adopt that terminology for ourselves. We are investment managers and not officers. We don't process (credit) requests. Ventures come to us and pitch and then we decide; there is no traditional application procedure as in the credit business. This 'authority image' that is latently resonant in our parent bank does not exist in the BVC. We are not bureaucratic; we are fast! (Lota)</p> <p>I think our governance is appropriate since you have to follow the rules of the VC market if you want to play that game. That's why you have your hands tied about governance to be credible and to be allowed to play. (Alpha)</p> <p>We don't have a carry structure yet. But I am promised that this will come shortly. I'm quite honest, everyone knows that if it doesn't happen at all, all the core and good people will leave at some point. That is simply the point because that is the exciting thing, or rather the carrot in the VC field. As soon as you have that compensation model, it's clear that you're playing the VC game. (Theta)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-5: Continued

Isomorphism within a particular milieu	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selected quotations
<i>Endoisomorphism</i>	Beta, Gamma, Eta, Kappa and Lambda, Ny, Delta, Epsilon, Zeta, Digamma, Pi, Rho and Sigma	67%	50%	50%	100%	<p>But at the end of the day, our parent bank's branding is already doing something for entrepreneurs, so we are already going out to the start-ups with this brand. (Beta)</p> <p>Several departments of the bank are responsible for the VC business. That is our actual BVC, our legal department, the finance and tax division, and our IT division. That's very complex. (Epsilon)</p> <p>And my co-managing director is also the savings bank's corporate customer advisor. So that's where we have the link to the corporate customer area on the debt capital side. This is an important approach for us because the main sales channel we have is our corporate customer centre. (Ny)</p> <p>We cannot implement a carry structure since we are regulated by a lot of bylaws. Yet if the good Lord means well for us and our performance is good, then we receive a variable remuneration. [...] Suppose you have one percent in a venture, and it is worth a billion. We don't need to discuss that. He'll go home with the money. You don't want that, and that's the way it is. (Kappa and Lambda)</p> <p>Capital participation is treated in the same way as loans, which means that as soon as we enter into any capital participation with a venture, the credit department is on board. That's a difficult issue with start-ups and thus also with our venture capital business. (Rho and Sigma)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

4.3 Stimuli of isomorphism

In light of propositions 1.a.–1.b., I further investigated whether certain surroundings may be related to either the exoisomorphic or endoisomorphic habits of BVCs. It emerged from the data that there are three stimuli of isomorphism. These are three liaisons that BVCs combine: i) the liaison with entrepreneurs, ii) the liaison with IVCs, and iii) the liaison with the parent bank. These liaisons are independent of BVCs' *raison d'être* and thus are positively related to BVCs' isomorphic habits. In particular, the liaisons with entrepreneurs and with IVCs prioritize the legitimacy within the VC environment (exoisomorphic habits), whereas BVCs' liaisons with parent banks conform to the structure and working style of the parent banks (endoisomorphic habits). Table D-6 provides comparative quotations illustrating that the liaisons with entrepreneurs, with IVCs, and with parent banks are a driver of the focus of isomorphism.

Table D-6: Comparative quotations on the stimuli of isomorphism

Stimuli of isomorphism	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in public banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Liaison with entrepreneurs</i>	All cases	100%	100%	100%	100%	100%	<p>It is important to demonstrate to entrepreneurs that we act like an IVC. No more, no less. (Lota)</p> <p>Check it out on Facebook or Instagram. This is a completely different way of presenting ourselves to the outside world as a BVC. We are located right next to the university, which is now increasingly coming into the city. We have more and more events that we hold on our premises. We are becoming increasingly well-known, and this alone has already led to a clear increase in our VC activities. (Ny)</p> <p>The positive success surprised us a bit—we could give our VC activities a slightly different branding than our parent bank did. We have our small market presence here, which of course signals a certain degree of an authentic investor to entrepreneurs. (Pi)</p> <p>If I were a founder and I could build up a proper, appropriate cap table, because I am also able to and it is going well, then I would try to get both. Bank VC is important because it gives entrepreneurs a lot of trust and reputation. (Beta)</p> <p>We have a customer base and bring along this aspect of trust that other VCs simply don't bring along. Our parent bank is still a brand with traction. (Gamma)</p>

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-6: Continued

Stimuli of isomorphism	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Liaison with IVCs</i>	All cases	100%	100%	100%	100%	Our BVC must demonstrate independence to the outside world. We already do that well. We want to be perceived as an investor at eye level. Thus, we follow the traditional VC structure. (Alpha)
						We are currently in the middle of a discussion about the extent to which we might want to become more independent of the bank in our brand image. There are also examples of this if you look at the fund of one of our BVC competitors: they have quite deliberately erased the parent bank's logo everywhere. This is attractive for being recognized by other financial investors. They don't want complexity, and a bank—in that vein the bank's branding—is a synonym for complexity (Lota)
						The degree of syndication of BVCs is very high. BVCs preferably look for an independent venture capital investor or a foreign VC. So, you try to put the consortia together in a complementary way so that each investor brings in an added value or a special advantage. Thus, some BVCs adapt to this ecosystem to get the chance to play along with the VC game. (Psi)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-6: Continued

Stimuli of isomorphism	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Liaison with the parent bank</i>	All cases	100%	100%	100%	100%	<p>I believe our parent bank needs innovation. They also have to deliver cost-cutting measures, so logically they need our radical activities on this ‘start-up solution side’. There are certainly some people who say that we are annoying and force people out of their comfort zone. I mean, we are just a small city, so you’ll always have one or the other person who says, ‘Don’t annoy me, just stay away from me with these start-up things’.</p> <p>(Beta)</p> <p>It is of course also a special field of business, so even in the bank, very few people know what we do at all. I am always surprised to find that out. We also have to explain what we do more often. That costs a lot of time, but we need to. (Eta)</p> <p>We are still involved with our parent bank, but we always can go beyond the borders. You have to know that our investment directors all have a longstanding relationship of trust with the savings bank’s board of directors. (Kappa and Lambda)</p> <p>Those who have been here longer in the BVC, they identify themselves more with the parent bank, but identification does not mean that we say the bank is great and we are totally happy to belong to the group. But we say that we belong to the group and that this is part of our heritage. (Lota)</p>

*The group ‘other public banks’ includes promotional banks, Landesbanken, and joint ventures.

BVCs emphasized that it is important to be recognized as an on-par VC investor by entrepreneurs (liaison with entrepreneurs). For instance, the branding and the location of the bank-affiliated VC unit may influence the focus of exoisomorphism. To be better noticed by entrepreneurs and to increase the legitimacy of the local entrepreneurial ecosystem, the banks decided to use distinct branding and separate locations for their VC activities. Especially the branding of the BVC helps to attract innovative new ventures, which in turn emphasizes the investor's exoisomorphic habits and which increases the legitimacy of entrepreneurs. As Ny noted:

When I continued to enlarge my team, I paid attention to not what they can do but to their mindset and to where I can direct them in the VC environment. That's important to show entrepreneurs so that they perceive you as a trustful and reliable investor, basically like a traditional VC investor. [...] We have also made enormous progress in public relations by simply creating an extra office for the BVC, with a new brand. (Ny)

Furthermore, Lota mentioned that it is important to be recognized as a sincere and reputable co-investor to be considered for the syndication of VC deals. BVCs in the sample have shown that they try to appear on the outside like an IVC in terms of quick deal approval and competent knowledge in the VC sector. Thus, to be seen as an on-par VC investor in the VC cosmos may also influence BVCs' focus of exoisomorphism. Similarly, Zeta illustrated the relevance of establishing legitimacy in the view of IVCs:

Being a BVC, this is our leverage factor. We are already perceived as a serious market player in the VC market and often are in the role of the lead investor and therefore motivate other VCs to make corresponding investments together with us. To play the VC game, you need to be recognized by all the other players. (Zeta)

Lastly, BVCs aim to become isomorphic with their parent banks. In particular, they focus on habits related to their parent banks' environments to be accepted by their parent banks,

which shifts the culture and mindset. For instance, Ny perceived a strong connection to the parent bank, as investment managers know about the strength of the brand of a ‘German public savings bank’. Amongst other interviewees in the sample, Ny exemplifies how BVCs focus on their parent bank during their VC deal activities since they aim to combine both the strength of their parent bank and the BVC’s activities. Since they feel closely connected with the parent bank, BVCs also focus on endoisomorphic habits. Additionally, BVCs try to be the banks’ ‘window on technology’ to understand which disruptive trends start-ups are working on and how the bank might benefit from those new trends. BVCs aim to ‘bring a breath of fresh air’ (Pi) to their parent banks by maintaining a close relationship with these banks, as the following quotation shows:

We also organize learning journeys to Berlin for our top management to instil new thinking and a digital spirit, but we had set a clear task for each participant to come up with some ideas of how to use a digital approach to drive their day-to-day business or the bank a bit forward. Taking all that into account, we are connected to our parent bank and aim to refine our parent organization. (Pi)

Given the above findings, I proposed the following:

Proposition 2.a. The strong liaison with entrepreneurs and/or IVCs is positively related to a BVC’s exoisomorphic habits.

Proposition 2.b. The strong liaison with the parent bank is positively related to a BVC’s endoisomorphic habits.

4.4 The emergence of multiple investment logics

In what follows, I propose three investment logics BVCs may follow by deriving seven investment practices BVCs use. I present and then clarify each of those practices according to the traditional VC investment process (Wright & Robbie, 1998).

Practice #1—Deal sourcing. From recent entrepreneurial finance literature, we know that IVCs primarily source their deals from reliable entrepreneurs, business angels, or other VCs (Fried & Hisrich, 1994). The deal sourcing stage of BVCs differs since they use more channels, such as internal referrals from their front offices, pitch decks sent via mail, and deal referrals by their networks. Referrals from the parent bank were present in nearly all cases in this study, yet the focus between internal and external deal sourcing differed across the cases. Thus, I coded the quotations according to internal and external deal sourcing. In addition to internal sourcing opportunities via banks' corporate banking centres or research labs, many cases used their external networks to source new VC deals. A managing partner of Alpha stated:

Our deals usually come from our network, i.e., from founders we have worked with before, from other VCs we are in contact with, or from M&A bankers. The quality of the leads we get from the network is on average better by a factor of ten than those that address us directly via our mailbox. (Alpha)

Lastly, since the VC market is fast-moving, investors depend on good market access and on a prompt sourcing process to become attractive for new ventures. Especially, BVCs that do not have the same resources as IVCs thus focus on external fundraising agents which provide sourcing and due diligence services, as Rho and Sigma explained:

We were beginners in the field and were therefore glad to have found a partner which supports corporate VCs in bringing in the necessary deal flow, including the necessary know-how, and who is ultimately an essential part of the work and value chain. This means that we buy-in the whole subject of market observation, selection, preparation, right up to the due diligence processes. (Rho and Sigma)

Practice #2—Investment specialization. In BVCs, specialization of investment practices is related to the focus of the investment, that is, whether there is industry-, geography- or life-cycle-phase-agnostic behaviour. Additionally, specialization is related to the composition of labour within the organization, or deal teams' composition and internal role (Pugh, Hickson, Hinings, & Turner, 1968). BVC cases varied regarding their concern with their investment

specialization. Therefore, I coded the interview material according to a broad and focused emphasis on investment specialization. First, one investment pattern became evident about the BVCs' investment industry, geographic, and life-cycle focus. The sample contains numerous BVCs—especially those that belong to public savings or promotional banks—characterized by a regional investment focus due to their bylaws. This automatically leads those BVCs to focus on multiple industries and life-cycle phases, as the following quotation illustrates:

We have no industry focus anywhere. What we do have is a clear regional focus because we only cover the Western Rhineland. Apart from that, we have no focus, for example, no specific stage of the investment; even though there are some preferred ones, we are open to all. This is also valid for industries. (Omikron)

Conversely, some cases showed that they have a broader geographic investment focus but that they are focused on specific industries:

We have an international investment focus. We can invest in different countries; however, we position ourselves as a specialist on the market, which means that we only invest in fintech and insurtech. (Alpha)

Second, there is evidence that the specializations of the respective investment teams, such as the teams' roles and responsibilities, differ across cases. In some cases, BVCs have dedicated industry teams with specialized investment managers, but others do not. The investment managers' areas of responsibilities also vary across cases, ranging from rather broadly defined roles and tasks to focused, specific contributions to the investment process. My, for example, noted a broad investment specialization:

Our managing director and I are rather responsible for all tasks in our investment activities. We do both the sales function of the BVC as well as all operational issues across the whole investment process. We only have one administrative FTE for fund administration. (My)

In contrast, BVCs such as Zeta, Lota, and Xi follow a focused investment specialization concerning their labour. This might be moderated by the number of employees in the BVC since

there are signs that the larger the BVC is, the more focused the labour's investment specialization becomes. Those BVCs focus their investment managers, analysts, and other staff on specific roles and tasks so that the investment process becomes as efficient and smooth as possible, as Xi illustrated:

We have a structured organization chart, which is broken down into individual positions. For each position, there is a position and task description, there are defined processes that are documented, as should be the case in a proper firm. We have clear functions within the BVC. (Xi)

Practice #3—Involvement of external parties in due diligence. Compared to IVCs, who usually use external consultants for the technical parts of the due diligence (Fried & Hisrich, 1994), BVCs do both—that is, they rely on the parent bank's resources to conduct due diligence and use selective external assistance. I coded cases according to BVCs having a moderate and a high emphasis on the involvement of external parties in due diligence. I identified two reasons why BVCs rely on external parties in their due diligence. First, BVCs consult external parties when they lack internal capacity and when the respective investment managers are already busy with generating deal flow. The following quotation supports this contention:

In principle, everything that we can outsource is going to be outsourced so that the people who sit here in the BVC are responsible for the market and support. We work with lawyers, auditors, and tax consultants from external service providers. (Kappa and Lambda)

Second, BVCs use external parties in their due diligence to obtain independent views on start-ups and entrepreneurs to ensure a certain degree of legal protection for the bank:

We also made a conscious decision to consult external specialists. Especially if you instruct an external law firm, you can externalize the liability risk; that is in the interests of our parent bank. (Pi)

Finally, BVCs have a finer granulated due diligence structure compared to IVCs due to their affiliation to a credit institution and resulting formalities. In particular, there are detailed

compliance and politically exposed persons (PEP) checks about people, money laundering, and other regulatory issues.

Practice #4—Dependency on investment decision making. Unlike IVCs, which can usually approve deals themselves without referring to their limited partners, BVCs' investment decision-making processes can be more complex in that BVCs involve the parent banks in deal approval. Since dependency in investment decision making varies across cases, I coded the material for decision-making practices into cases with a moderate and high emphasis on deal approval depending on the parent bank. Especially BVCs with a financial *raison d'être* and exoisomorphic habits can approve deals quickly and directly through an internal investment committee, without referring to the parent bank, as Theta illustrated:

Since we use a quasi-partner structure, my two partners and I can take decisions up to five million euros. So, the three of us can decide the deal approval independently. (Theta)

However, in numerous cases the parent bank is involved in the final deal approval. In some cases, managers or executives from the bank are part of the investment committee and have a voting right. In other cases, the BVC's management needs to pitch prospective investment deals again in front of a series of senior managers of the parent bank. Problems arise because many investment committees—that consists of both investment managers and (executive) bank managers—meet only quarterly. Overall, this means that investment managers in those BVCs cannot fully approve deals on their own but need formal or informal approval by their parent bank's management, which makes the process more complex compared to that of an IVC. As Pi explained:

First, we need a professional sponsor in our parent bank. When that's done, we go through our digitization committee, which consists of 11 managers from our parent bank. When we get approval there, we need to go to the bank's board of directors to get approval from them. So, and then, unfortunately, we have to

be honest about it, we have to join some stupid risk and credit committee, which is a subcommittee of the board of directors, in other words, a supervisory board. Then, we are ready. (Pi)

Practice #5—Investment vehicle. IVCs traditionally operate their investment activities via a general partner and limited partner (GP/LP) structure. In turn, banks structure their VC activities according to two approaches: on the one hand, BVCs act according to the traditional GP/LP structure, where the limited partner is either the parent bank only or additional external investors; on the other hand, banks avoid the traditional investment vehicle and manage their investments via an open-ended or evergreen fund. This investment vehicle has no fixed end date and continues as an ongoing investment vehicle receiving a continuous budget from the parent bank. Consequently, I coded the different cases according to BVCs following the traditional GP/LP structure and those following the evergreen model.

The case of Digamma illustrates that BVCs use a closed fund structure to be open to third-party investors who can participate in the bank's investment activities. Additionally, Theta and Xi explained that funding from external investors helps the BVC to become both even larger and more efficient because external investors pay a management fee and the bank itself has leverage based on the capital. Digamma noted:

We built various funds, and this continued with Technology Funds I, II, III, with H. Capital I, II, III, with regional funds, and new funds open to external investors such as private individuals, family offices, and the state as LPs. (Digamma)

In contrast, in cases in which BVCs operate their VC activities via an evergreen model, the parent bank's board of directors agreed on an annual budget, which can be called up when required for investments. This structure prevails when BVCs do not want to open their investments to third parties and when they have no pure financial reason d'être, as the case of Pi illustrated:

We are not a traditional VC fund, so formally and legally we are not. We do not necessarily see ourselves as a financial investor, because we feel like [the BVC] and would like to be a little bit different. So, we have a certain budget available each year that we have to call from the board. Additionally, we don't want to open our investment to third parties, so we don't need the traditional GP/LP model. (Pi)

Practice #6—Smart money. IVCs usually provide post-investment value-added services to their portfolio firms, such as recruiting, strategic advisory, and fundraising networks (Gompers & Lerner, 2004b; Gorman & Sahlman, 1989; Mason & Harrison, 1999; Sapienza et al., 1996). BVCs also provide post-investment advice for their portfolio firm; however, they can additionally connect portfolio firms to their parent banks, which in turn provides technical and marketing capabilities and leverages the venture's business model. I observed different emphases BVCs put on providing post-investment advice and linking portfolio firms with their parent banks' tangible and intangible resources. Some cases provided the full range of value-added services, ranging from strategic and operational support to providing a network and help for follow-up funding, but they also tried to connect the portfolio firm to the parent bank if it would have a meaningful impact on the bank's business model. I coded those cases as having a high emphasis on smart money. Conversely, other cases provided less support, basically due to time and labour restraints, which are less distinctive than with IVCs. I coded those cases as having a moderate emphasis on smart money.

For instance, Rho and Sigma provide access to their network so that their portfolio firms can leverage the BVC's and the bank's networks. In turn, the bank's VC unit drives the start-up towards a route that is strategically relevant for the parent bank—especially when the investment is close to the financial services industry:

You have to be attractive as a VC to get an attractive ticket, and we are interested in fintech and proptech because we can help them here and there. So, we can also offer them added value besides money, for

example, market access. When I think of proptech in our portfolio, we took that venture with us to the biggest real estate fair and then they simply had thirty to forty warm contacts. (Rho and Sigma)

Respondent My explained that the shortage of value-added services the BVC provides to its portfolio firms is due to a lack of human resources. Investment managers are fully engaged with new investment activities so that they do not have time to provide post-investment advice to all their portfolio companies:

There are only two of us that do the VC business here at our bank. That means we can't provide this post-investment value-add for everyone in our portfolio. (My)

Practice #7—Time horizon of the investment. The last investment practice I derived relates to the time horizon of the investment—the time to exit. Entrepreneurial finance literature provides evidence that the average time to exit for a start-up as part of an IVC's portfolio is around five to 10 years (e.g., Cumming & Johan, 2010; Giot & Schwiendbacher, 2007). Additionally, it emerged from the data that there are two foci on the time horizon of bank-affiliated VC investments. I coded cases according to two specifications: Cases either have an exit-driven focus like that an IVC pursues, or they tend to a 'patient' time horizon for the investment. BVCs have an exit-driven focus when they apply a traditional closed-end fund structure, which forces an exit from the investment:

I have a maturity fund and a very clear exit policy in place since I also have external limited partners that pressure me to run for a return. That needs to happen within my ten-year frame via an exit. (Omikron)

In turn, some cases have a different understanding of their investment horizon compared to IVC investors, which have a hard cut-off time for an exit. For instance, when investments are related to the strategic orientation of the parent bank, the time horizon might vary. Furthermore, if a BVC manages only money from its parent bank, there is no conflict of interest with other limited partners, so the BVC is less exit-driven and exits the venture once the timing is appropriate. The investment director of Lota explained:

BVCs are all less clocked than all the independent VC investors. I would rather say that the immediate exit pressure with a BVC is not as high as with an IVC. Do I see a difference in exit behaviour? It seems that we are more tolerant. (Lota)

Comparative quotations for the seven investment practices are provided in Table D-7.

Table D-7: Comparative quotations on investment practices

Investment practice	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Internal deal sourcing</i>	Beta, Gamma, Ny, Omega, Theta, Pi	67%	33%	20%	0%	Usually, we get our deal flow from our parent bank's network. We also look for candidates ourselves and actively approach them. (Beta) We also do sourcing topics by ourselves if we are looking for something concrete. (Pi)
<i>External deal sourcing</i>	Alpha, Eta, Kappa and Lambda, My, Omikron, Delta, Epsilon, Zeta, Lota, Xi, Digamma, Sigma, Heta, Rho and Sigma	33%	67%	80%	100%	Everything over the network. Or we meet some advisor of a portfolio company that says, 'If you need early-stage capital, then contact the [the BVC] Group. Here is the phone number of the guy I know, by the way.' We used to get more from the savings banks—now we don't get as many deals. (Omikron)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Broad investment specialization</i>	Beta, Gamma, Eta, Kappa and Lambda, My, Ny, Omikron, Omega, Delta, Epsilon, Theta, Digamma	67%	100%	40%	0%	[...] And as a result, we are mostly generalists here in the BVC. (Ny) We have a regional focus, but we are open to all industries. (Omega) We have various regional seed funds [...]. We have further investment managers who invest from Series A onwards, and then we have a complete team focusing on SME financing. That is only possible thanks to our large market appearance. (Zeta)
<i>Focused investment specialization</i>	Alpha, Zeta, Lota, Xi, Pi, Sigma, Heta, Rho and Sigma	33%	0%	60%	100%	We have a clear regional emphasis. We are organized into four industry teams. One is focused on medical technology, life science, and e-health, another is in industrial technologies, and one is in creative industries, and the fourth area is about information and technologies. (Lota) We two are the heads of the organization in the BVC. We have our employees, who take care of the portfolio. One of them is life-science oriented, the other one is more mechanical-engineering oriented, the other one has a little more software focus. These are the areas in which we are active here. And then, we have a clear, a very clear, focus on B2B business models. (Sigma)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>High involvement of external parties in due diligence</i>	Eta, Kappa and Lambda, My, Pi, Rho and Sigma	0%	50%	10%	100%	We always do a management team audit, which means that we ‘shake-up’ the team in one day together with an external service provider to get external validation. (Eta) The business model of our external DD provider has specialized in that area for CVCs, and they simply had access to the market through the people who were acting, which we would have had to work very hard to achieve. We wanted to get into the market quickly, and we also see a broad deal flow to place our investments afterward. Therefore, we fully outsourced the DD. (Rho and Sigma)
<i>Moderate involvement of external parties in due diligence</i>	Alpha, Beta, Gamma, Ny, Omikron, Omega, Delta, Epsilon, Zeta, Theta, Lota, Xi, Digamma, Sigma, Heta	100%	50%	90%	0%	We usually carry out the due diligence ourselves. Accordingly, we have our investment managers from many different backgrounds, that is, engineers, scientists, economists etcetera so that we can also classify certain technologies ourselves. (Zeta) The due diligence is completely integrated into our VC unit. We draw on our parent bank and use its resources for topics such as commercial, financial, legal, and tech, or rather IT, due diligence. No service provider is needed for that. (Epsilon)

*The group ‘other public banks’ includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>High dependency in investment decision making</i>	Beta, Gamma, Eta, Kappa and Lambda, My, Ny, Pi, Heta, Delta	67%	67%	30%	0%	The final deal memo is then sent by a circular letter to our shareholder, the savings bank, and in this case equally represented by the entire board. This means that the board of directors consists of four people, and they all sign that they think it is good to deal with. So as soon as it's about new investments, it's explicit, we want the whole board to decide on that. (Ny) We have a certain level of autonomy. Then, if it goes beyond that, we have to go to the board of the bank. And we then we must also go through the credit committee. (My)
<i>Moderate dependency in investment decision making</i>	Alpha, Omikron, Omega, Epsilon, Zeta, Theta, Lota, Xi, Digamma, Sigma, Rho and Sigma	33%	33%	70%	100%	The investment committee includes the COO of our parent bank and many other divisional managing directors, who come from different areas and can push this again in different ways. Then we also have external members without a voting right but whose opinions we ask for. (Beta) We act relatively independently with a management board and a supervisory board. And in these management companies, the VC vehicles also have a relatively high degree of freedom. (Omikron) We do our deal approval like a traditional VC investor. We just have our internal investment committee that can make the decision rather quickly. (Heta)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Closed-fund investment vehicle</i>	Alpha, Eta, Omikron, Omega, Delta, Epsilon, Zeta, Theta, Lota, Xi, Digamma, Rho and Sigma	33%	50%	70%	100%	We use closed funds to get the chance to onboard other LPs such as natural persons. This allows us to invest larger volumes since the range of financing for technology companies tends to require more financing and staying power. (Omikron) The advantage of investing through a fund is that we can leverage the capital—that is, we can leverage it very efficiently. (Theta)
<i>Evergreen investment vehicle</i>	Beta, Gamma, Kappa and Lambda, My, Ny, Pi, Sigma, Heta	67%	50%	30%	0%	This is an evergreen model. So, we have no fund structure. Although it's called the Opportunity Capital Fund. This gives us more flexibility. (My) We are designed as an evergreen fund. We were once endowed with limited liability capital, which was then increased or which included retained earnings. We finance ourselves from our cash flow. (Ny)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>High emphasis on smart money</i>	Alpha, Omikron, Omega, Epsilon, Theta, Lota, Pi, Heta, Rho and Sigma	33%	33%	50%	100%	Ultimately, the key point is that we say we are the access point or, so to speak, the networker in our region for our portfolio company. As a bank, we naturally have a large number of (corporate) client advisors who know these different clients and who are in contact with them, which makes networking easy. (Theta) We bring in networks that we have access to, such as other investors, but also networks with regional banks and also the opportunity to take advantage of our other promotional products. It is important to mention that we also support the start-ups in their search for a location because in any case, it is the task of our development bank to carry out location management on behalf of the state. We invest a lot of time into our founders. (Epsilon)
<i>Moderate emphasis on smart money</i>	Beta, Gamma, Eta, Kappa and Lambda, My, Ny, Delta, Zeta, Xi, Digamma, Sigma	67%	67%	50%	0%	[...] in recent years, it just shows that the more we go into the VC world, the more we have to offer hands-on management. (Ny) We are hands-on and hands-off. We are a hands-off investor who offers added value but does not build it up. We are also always a minority investor, in accordance with regulations. This means that we see ourselves as helping hands, but not as leaders in the venture. (Digamma)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Table D-7: Continued

Investment practice	Evidence in cases	Evidence in private banks	Evidence in savings banks	Evidence in other public banks*	Evidence in cooperative banks	Selective quotations
<i>Exit-driven time horizon of the investment</i>	Alpha, Gamma, Eta, My, Omikron, Omega, Delta, Zeta, Theta, Xi, Sigma, Heta	67%	67%	60%	0%	I don't care about the long-term orientation because I have to be out after ten years. (Sigma) Since we naturally have a holding period of five to seven years, we are talking about medium- to long-term investments. Accordingly, time plays a significant role in our investments. (Zeta)
<i>Patient time horizon of the investment</i>	Beta, Kappa and Lambda, Ny, Epsilon, Lota, Pi, Digamma, Rho and Sigma	33%	33%	40%	100%	I think the points are probably simply different concerning the exit. With us, it's more about how long it will benefit our business. How long does this cooperation make sense, because we always combine this investment with cooperation with our parent bank, and if the underlying cooperation model is no longer viable, you have to consider whether now is the right time to exit. (Pi) Since we invest to help to push forward the strategic direction of our parent bank, we look for solutions that add value to the bank. We aim to make a profit but have more time to do so with our investments. (Beta)

*The group 'other public banks' includes promotional banks, Landesbanken, and joint ventures.

Based on my previous findings—that is BVCs' focus of isomorphism and their investment practices—I distinguish between three investment logics in BVCs as follows. First, BVCs that were isomorphic to the VC environment follow an autonomous investment logic. Those BVCs generally emphasize managing their investment activities according to the standards of IVCs and the external VC environment. Second, BVCs that were isomorphic to the parent bank environment follow a contingent investment logic. Those BVCs place a moderate emphasis on traditional VC investment standards, and their investment behaviour is influenced by the parent bank's practices. By considering all findings, I observed that the focus of isomorphism determines which investment practices the BVC focuses on and, hence, which investment logic emerges. Therefore, I propose the following:

***Proposition 3.a.** A BVC's focus on exoisomorphic habits determines an autonomous investment logic.*

***Proposition 3.b.** A BVC's focus on endoisomorphic habits determines a contingent investment logic.*

Third, however, I noticed that there are cases where the respective BVC does not follow one specific investment logic but, in fact, focuses on both an autonomous and a contingent investment logic, which in turn relates to the BVC's focus of isomorphism. At that point, the BVC's focus of isomorphism cannot be distinctly classified since the BVC follows both exoisomorphic and endoisomorphic habits. The managing partner at Alpha explained:

You have people, like Propel Venture Partners, who all started strategically or from somewhere else, and have now arrived exactly where we have arrived. That is at an increasing autonomization of the venture units, an increasing adaptation to the structures you have in the traditional venture capital business to be able to satisfy the bank and potential other limited partners, and also to be able to keep the teams. (Alpha)

BVCs focus on what I call a ‘hybrid’ investment logic by following both exoisomorphic and endoisomorphic habits—a mix of different investment practices that leads to neither an autonomous nor a contingent investment logic. Hence, I propose the following:

Proposition 3.c. *A BVC’s focus on both exoisomorphic and endoisomorphic habits determines a hybrid investment logic.*

An overview of the allocation of investment logics to the BVCs is provided in Table D-8. The allocation is based on the overall results considering the raison d’être, the focus of isomorphism, the stimuli of isomorphism, and the investment practices.

Table D-8: Overview of investment logics

Investment logic	Evidence in cases	Evidence in private banks	Evidence in public savings banks	Evidence in other public banks*	Evidence in cooperative banks
<i>Autonomous</i>	Alpha, Omikron, Delta, Theta, Lota, Xi, Sigma, Heta	33%	17%	60%	0%
<i>Contingent</i>	Beta, Kappa and Lambda, Epsilon	33%	17%	10%	0%
<i>Hybrid</i>	Gamma, Eta, My, Ny, Omega, Zeta, Pi, Digamma, Rho and Sigma	33%	66%	30%	100%

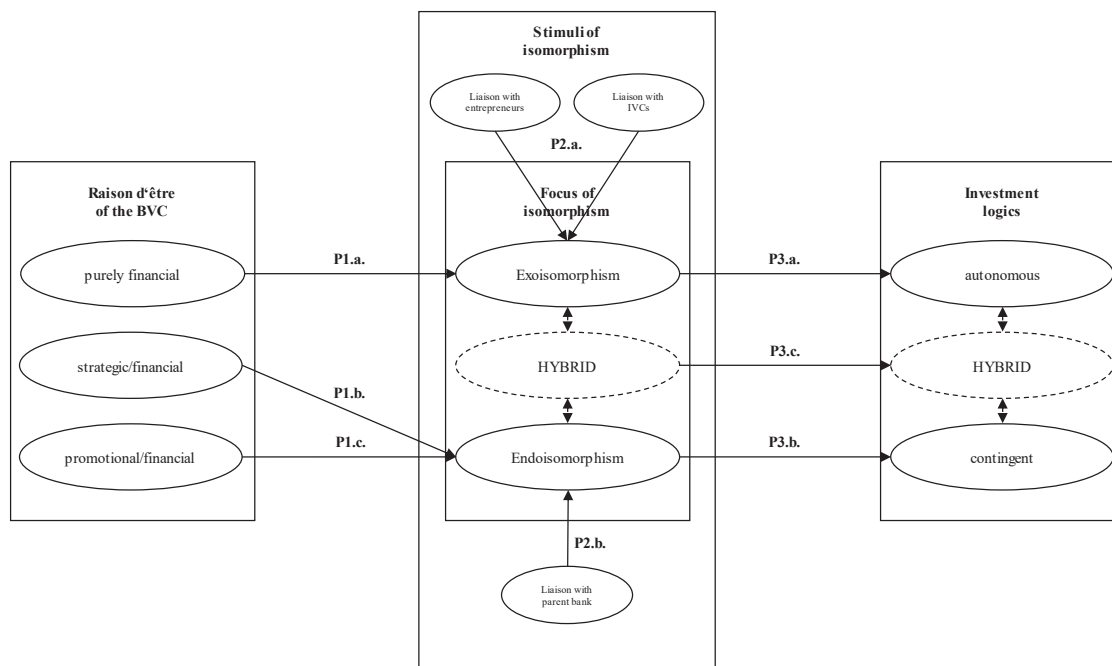
*The group ‘other public banks’ includes promotional banks, Landesbanken, and joint ventures.

5. Discussion

5.1 Toward a model of bank-affiliated venture capitalists’ investment logics

This paper aimed to advance theory and expand knowledge on BVCs’ investment logics and to place those logics into a broader context with the literature on IVCs. Based on my formal propositions, I inductively derived a conceptual model connecting theoretical concepts and relationships to illustrate BVCs’ investment logics, as shown in Figure D-2.

Figure D-2: Conceptual model and related propositions



First, I identified three types of raisons d'être of BVCs: purely financial, strategic/financial, and promotional/financial raisons d'être. Second, I observed that the different types of raisons d'être influence BVCs whether they are isomorphic to the external environment (i.e., the VC world) or to their internal environments (i.e., the parent bank). I also identified three stimuli that are positively related to either an exoismorphic or endoismorphic specification, namely the liaison with entrepreneurs and IVCs, and the liaison with the parent bank. Third, I investigated seven investment practices in the context of BVCs. I observed that BVCs who primarily operate their VC activities detached from their parent bank (focus on exoismorphic habits) follow an autonomous investment logic. In turn, other BVCs perceive higher pressure from their parent banks (focus on endoismorphic habits), thus following a contingent investment logic with a stronger emphasis on norms aligned to the parent bank. However, a cross-case comparison revealed that there are cases in which the allocation to one of those two investment logics is not possible. In my model, some cases focus both on exoismorphic and endoismorphic habits, which in turn lead the BVC to follow both an autonomous and a contingent investment logic. Therefore, I propose that there is a hybrid

investment logic that combines both investment practices, emphasizing the BVC's external and internal institutional environments.

5.2 Theoretical contributions

This paper contributes to three pieces of literature. First, I contribute to the literature on BVCs—an 'investor type that has received in general the least attention from the literature' (Bertoni et al., 2019, p. 248)—by documenting investment practices and resulting investment logics that characterize their investment activities. Until now, research has focused on how IVCs (Gompers & Lerner, 2004b) and CVCs (Souitaris & Zerbinati, 2014) conduct their deals and which investment practices they use; however, the investment behaviour of a VC investor, in general, differs from other institutional environments in which the investor operates (Bruton, Fried, & Manigart, 2005; Da Gbadji, Gailly, & Schwienbacher, 2015). I have tapped into this research gap by investigating this under-researched institutional environment of a VC investor who is affiliated with a bank. Especially in European countries such as Germany, banks play an integral role in the economy. Since the traditional banking model is not sustainable anymore, many banks develop their business models towards a 'beyond banking solution', such as the practice of having their own VC units. Hence, it is crucial to gain a deeper understanding of how those VC units work and how they are integrated into the banks' across-the-broad banking landscape.

Consequently, I advance a new typology of bank-affiliated VC investors (Bertoni et al., 2015) and explore the investment nature and related practices of BVCs (Murtinu & Johan, 2018). This complements recent findings on the heterogeneity of the investment activities within different VC investor types (Bertoni et al., 2015). My findings on investment practices and resultant investment logics are new for the specific literature stream on BVCs, although they can complement earlier findings on differences between CVCs concerning their set-up structure (Dushnitsky, 2012) and locus of investment (Hill & Birkinshaw, 2014). In particular, banks differ from traditional industrial companies, and therefore their respective VC units do

too. Banks are financial institutions that primarily strive for high returns. In contrast, industrial firms are interested in the development of their products but less return driven than banks are. Thus, it is important to obtain a deeper understanding of BVCs and their investment activities, considering their specific institutional environment.

In short, I developed two concepts—BVCs' autonomous and contingent investment logics—that I derived by analyzing seven specific investment practices while considering the institutional environment. Although we already know that the investment patterns for VC investors with different governance structures change (Bertoni et al., 2015; Bertoni et al., 2019; Murtinu & Johan, 2018), it was not well specified how BVCs conduct their deals and why they follow a certain investment behaviour (Bertoni et al., 2019; Croce et al., 2015). For example, when making its investment decisions, a BVC following an autonomous investment logic has much more self-determination and independence from the parent bank compared to a BVC following a contingent investment logic. This aligns with the BVC's focus of isomorphism, which explains why those investment logics emerge.

Second, I contribute to the literature on how multiple logics emerge in the special context of BVCs. We already know from institutional theory that critical events (Nigam & Ocasio, 2010), changes in the structure of the environment (Dunn & Jones, 2010), and the geographical separation of individuals in the field (Greenwood & Suddaby, 2006) explain the emergence of multiple logics. Souitaris and Zerbinati (2014) used alignment with different stakeholders as an explanation of how multiple logics emerge in CVC units. I contribute to their findings by identifying that this alternative mechanism can also explain how and why multiple investment logics emerge in the context of BVCs. I found that BVCs are generally placed between two institutional worlds—that is, the external VC environment and the internal environment of the parent bank. My data has shown that BVCs either feel isomorphic to the

external or internal environment and thus adopt investment practices that lead to an autonomous or contingent investment logic, or they feel isomorphic to both the external and internal environment, thus leading to a hybrid investment logic. I extend recent work that the focus of isomorphism explains how and why multiple field-level logics emerge—in my case-specific investment logics of BVCs—which is a current research question in institutional theory (Souitaris & Zerbinati, 2014; Souitaris et al., 2012; Thornton et al., 2012). Additionally, recent literature has generally assumed that different practices explain the emergence of multiple field-level logics (Lounsbury, 2007). I contribute to this line of thinking in that multiple logics can be linked to the same practice an individual focuses on, but with a different emphasis.

Third, I contribute to the literature on the role of VC investors in field-level logic hybridization. Souitaris et al. (2012, p. 502) called for research on whether there are ‘hybrid structural forms’ in the dependent VC environment. Hence, I echo Souitaris et al.’s (2012) call for further work on the investigation of a distinct hybrid VC investor type that is between the two extremes of the structural continuum. My findings suggest that there are BVCs that follow neither an autonomous nor a contingent investment logic but a hybrid investment logic, which is somewhere between those two extremes. I found theoretical evidence that the *raison d’être* influences a BVC, whether it is isomorphic to its external or internal environment. Additionally, certain stimuli are positively related to a specific focus of isomorphism. At that point, it became evident that some BVCs follow a specific *raison d’être*, but they internalize both foci of isomorphism—they combine exoisomorphic and endoisomorphic habits. I then found that those cases also follow my identified investment practices, but their emphasis on the respective investment practice does not permit any conclusive statement regarding whether they follow the autonomous or contingent investment logic. Those BVCs rather combine the two investment logics (Battilana & Lee, 2014) and can be therefore viewed as hybrid investors (Besharov & Smith, 2014; Pache & Santos, 2010). Hence, those BVCs may have problems in

establishing appropriate means (e.g., organizational structure, processes, formalization) that best promote the integration of the previously dissenting *raison d'être*, which leads to the emergence of the hybrid investment logic.

5.3 Practical implications

My study has implications for BVCs and their parent banks, IVCs, and entrepreneurs who are looking for VC financing. The management of many BVCs feel that they can compete against IVCs as equals; therefore, they downplayed their affiliation to a bank and the associated (bureaucratic) obstacles to conduct smooth VC investment deals like IVCs can. My results help BVCs and their parent banks to better understand how banks and their affiliated VC arms conduct deals in general and what leads them to a specific investment logic. This knowledge stimulates investment managers to critically rethink their business model to become accepted as an on-par investor in the VC environment. I shed light on BVCs' investment logics, which need to be understood and accepted for successful deal syndications, and thus facilitate negotiations for potential co-investments between BVCs and IVCs. Moreover, my results have implications for entrepreneurs seeking VC financing. The findings provide information about BVCs' investment logics and how their investment practices differ from those of IVCs. This will help entrepreneurs to better tailor their pitches when seeking external equity financing from a bank. In particular, this study should be relevant for entrepreneurs from the financial services and insurance sectors, as it allows them to develop a clearer idea of whether a BVC is the right type of VC investor for their start-ups.

5.4 Limitations and future research agenda

This study has three main limitations, which in turn offer fruitful avenues for future research. First, my results are limited to a qualitative and explorative research design. Hence, statistical generalizability is not possible. I recommend running a larger sample survey or collecting deal-level data from respective BVCs to test the conjectures set forth in this study—that is, the

existence of two extreme investment logics—by considering the varying emphasis on the seven investment practices and the influence of the foci of isomorphism.

Second, I interviewed only the top management of the respective BVCs, except for one case where I could also access a board member of the BVC's parent bank. This may limit the study's findings due to a lack of direct information on the parent bank's management perspective on its VC activities and investment practices. Although I counteracted this limitation by using a large self-collected portfolio of archival data to evaluate how the bank's perspective on its VC activities matches the perspectives of BVC managers, I suggest further qualitative and quantitative research to investigate BVCs' parent banks' perspectives on how the different governance models within the different types of banks may influence their VC activities.

Third, I focus on the German market for bank-affiliated VC; hence, this study focuses on an explicit institutional context. Since the market structure for banks and specific banking regulations are not homogenous across countries, BVCs may vary considerably between countries. In short, due to this niche research context, which implies certain motivations of BVCs to participate, market characteristics, and cultural differences, I cannot generalize my findings to other bank-affiliated VC markets without further research. I consider the further investigation of the French, U.K., and U.S. markets an interesting avenue for BVC research. Those markets have especially large banking systems with different types of banks, for example, commercial banks, investment banks, savings institutions, and non-banks such as investment funds. It might be interesting to evaluate how banks operate their BVCs in those countries, how they conduct deals, and whether there are cross-country similarities and differences.

Finally, hybrid forms of BVCs and a resulting hybrid investment logic could be another fruitful future research area. The question arises whether this phenomenon is just temporary until the dominant logic has established itself or whether it is a stable phenomenon.

E. Conclusion

1. Summary of research findings and contributions

“Classic” venture capital research on investment decision-making behavior has a long tradition in entrepreneurial finance research (Harrison & Mason, 2019). This dissertation further contributes to the evolution of the entrepreneurial finance literature. It does not just integrate recent literature, thereby highlighting the complexity of venture capitalists’ and business angels’ investment decision-making policies, but also raises currently relevant questions by including the perspective of the entrepreneur’s financing decision and by analyzing the investment behavior of alternative players in the early-stage risk capital market, such as the behavior of bank-affiliated venture capitalists—each of which is discussed in turn.

First, the dissertation adds to the literature on investment criteria by taking the perspective of both venture capitalists and business angels (cf. Chapter B). It is essential to understand how early-stage risk capital providers select their portfolio firms because both venture capitalists and business angels operate in a precarious environment composed of information asymmetries and agency issues, thus making the selection difficult (Fiet, 1995; Van Osnabrugge, 2000). Since the body of literature in this research field is unstructured and heterogeneous, the dissertation, first of all, provides a systematic literature review of venture capitalists’ and business angels’ investment criteria. The systematic literature review develops an integrative, conceptual framework that is based on agency theory (Eisenhardt, 1989a; Hsu et al., 2014; Jensen & Meckling, 1976) and argues that the literature can be categorized based on behavior- and outcome-oriented control mechanisms in early-stage investments. According to this framework, the recent literature has been categorized into three main groups of investment criteria: (i) the management team, (ii) the business, and (iii) the financial traction. The results show that venture capitalists focus primarily on the business and the financial traction because of the return expectations of their limited partners, whereas the management team plays an inferior role in their investment decision. In contrast, business angels concentrate

mainly on the management team when making investment decisions. This behavior can be explained by their willingness to establish personal relationships with entrepreneurs.

In that vein, the dissertation contributes to the ongoing debate on venture capitalists' and business angels' investment decisions (e.g., Bernstein et al., 2017; Hsu et al., 2014; Mason & Stark, 2004). The recent literature has predominantly investigated single investor types and their investment criteria—for example for venture capitalists (Franke et al., 2006; Macmillan et al., 1985) and business angels (Carpentier & Suret, 2015; Sudek, 2006). However, this large body of literature shows rather heterogeneous results. The first essay of this dissertation takes the initiative to analyze both the quantitative and the qualitative literature and attempts to provide conceptual clarity. Furthermore, the dissertation reveals important shortcomings in the literature and proposes new research questions that may serve as a foundation for future research on investment criteria.

Second, the dissertation broadens the perspective of entrepreneurial finance research by examining how entrepreneurs evaluate and select their venture capital investors (Drover et al., 2014; Fairchild, 2011; Smith, 2001; Valliere & Peterson, 2007) (cf. Chapter C)—that is, investigating the flip side of research on the criteria of early-stage investors. Particularly, the dissertation disentangles the previously aggregated, general concept of value-added services that drive entrepreneurs' willingness to partner with venture capitalists (Saetre, 2003). The results of the choice-based conjoint experiment and the subsequent semi-structured interviews reveal several insights into the dynamics associated with entrepreneurs' financing decisions. In particular, the results show that entrepreneurs' investor selection is influenced by their pursuit of resource dependence (cf. Hillman et al., 2009; Pfeffer & Salancik, 1978). Concerning the effect sizes of different value-added services, the dissertation states that entrepreneurs highly appreciate the venture capitalist's operational network and exit experience. Rather than looking for complementary skills, entrepreneurs aim to strengthen their existing resource base.

Moreover, the dissertation contributes to research on resource dependence theory (Hillman et al., 2009) by showing that entrepreneurs perceive value-added services from venture capitalists as an unexplored, active resource management tool that influences business growth (Fraser et al., 2015). They are much more willing to work with a venture capitalist as a “scout” giving access to external networks than with a “coach” providing strategic guidance and internal advice. Thus this result contributes to the ongoing debate on entrepreneurs’ perception of a venture capitalist (Baum & Silverman, 2004; Hellmann, 2000).

Third, the dissertation enhances the understanding of decision-making from a novel perspective, namely how bank-affiliated venture capitalists conduct their business (cf. Chapter D). Based on a qualitative empirical research design, the dissertation draws on both institutional theory and the corporate venture capital literature to derive a conceptual model that explains the investment behavior of bank-affiliated venture capitalists. The results demonstrate that there is an autonomous and a contingent investment logic, which both depend on the isomorphic orientation of the bank-affiliated venture capitalist. Whether the focus is on autonomous or contingent investment logics depends on whether the bank-affiliated venture capitalist follows exoisomorphic or endoisomorphic habits. That, in turn, is influenced by the venture capitalist’s *raison d’être* and further stimuli, such as his or her liaison with entrepreneurs. However, the results show that hybridization of investment logics is possible as well, especially when bank-affiliated venture capitalists follow neither an autonomous nor a contingent investment logic and combine both exoisomorphic and endoisomorphic habits.

In this context, the implications shed light on bank-affiliated venture capital research and reveal new insights into the investment logics of bank-affiliated venture capitalists (Bertoni et al., 2015; Bertoni et al., 2019; Croce et al., 2015). Because of the increasing importance of bank-affiliated venture capital, as is the case in Europe, these findings are essential for understanding bank-affiliated venture capitalists’ investment practices and their ways of

thinking. Also, the thesis contributes to institutional theory by showing that bank-affiliated venture capitalists' investment logics evolve by their foci of isomorphism (Lounsbury, 2007; Souitaris & Zerbinati, 2014; Souitaris et al., 2012; Thornton et al., 2012). Finally, the dissertation contributes to the growing stream of hybridization of multiple institutional logics as part of the management and organization science literature by explaining why bank-affiliated venture capitalists' investment logics become hybrid (Battilana & Lee, 2014; Besharov & Smith, 2014; Pache & Santos, 2010; Souitaris et al., 2012).

Overall, this dissertation makes new theoretical contributions to the entrepreneurial finance literature by (i) advancing the understanding of early-stage investors' investment decision policies, thereby linking to agency theory; (ii) elaborating how entrepreneurs select their venture capital investors based on value-added services, thereby linking to resource dependence theory; and (iii) examining multiple investment logics of bank-affiliated venture capitalists, thereby linking to institutional theory.

2. Managerial implications

The findings of this dissertation have direct implications for entrepreneurial finance market participants, especially entrepreneurs, risk capital providers, and policymakers. First, the dissertation offers useful practical insights for entrepreneurs seeking early-stage financing. It supports entrepreneurs in understanding the differences in the way venture capitalists and business angels make their investment decisions. This helps entrepreneurs to prepare and adapt their pitches when presenting their business idea to a committee of either venture capitalists or business angels, as different nuances exist in how these investors make their investment decisions. Also, this dissertation enables entrepreneurs to gain new, strategic insights into which investor characteristics are important when selecting a venture capitalist. In particular, entrepreneurs may obtain insights into the internal investor selection process of the founder team, in which value-added services are an essential criterion for a venture capitalist. In that

vein, the dissertation shows that selecting a venture capitalist with the right portfolio of value-added services is an early strategic decision that is associated with the later success of the new venture. Lastly, the dissertation offers specific managerial insights for entrepreneurs from the Fintech and Insurtech environment. Besides independent venture capitalists, the dissertation has also investigated bank-affiliated venture capitalists. Thus, this thesis offers entrepreneurs a better understanding of the investment logics of bank-affiliated venture capitalists and helps to understand to what extent entrepreneurs may prefer venture capital financing by a bank to financing by an independent venture capitalist.

Second, the dissertation provides practical insights for risk capital investors. Venture capitalists and business angels get a better sense of how other investors behave when selecting their portfolio firms. Therefore, the dissertation offers detailed benchmarking data for venture capitalists and business angels to compare their decision-making behavior with that of others. Moreover, venture capitalists need to reflect on their value-added services offerings. The results show that entrepreneurs are more willing to partner with a venture capitalist who can offer an attractive operational network and a viable exit path. Venture capital investors should be aware of this specific situation, especially in times when dry powders have reached record levels, thus increasing entrepreneurs' bargaining power during investor negotiations. Adapting their portfolio to value-added services would help venture capitalists to become more attractive in the venture capital ecosystem. Furthermore, the thesis offers practical insights for investment managers of dependent venture capital firms, such as bank-affiliated venture capitalists. If they want to be recognized as an on-par investor by entrepreneurs, they need to adapt their business model to offer the same conditions, benefits, and decision-making promptness as independent venture capitalists.

Third, the dissertation provides insights for policymakers. They need to understand the magnitude of venture capital financing and the related entrepreneurial demand for different

types of value-added services in terms of regulatory perspectives in case they want to promote the potential venture capital landscape. This may be achieved by lowering the barriers for venture capitalists to advise and support their portfolio firms. In this context, the U.S. venture capital ecosystem—in which venture capitalists are actively involved in the management of their portfolio firms—can serve as a role model for boosting support programs for the startup ecosystem and realizing a positive impact on economic growth (OECD, 2017).

3. Avenues for future research

This dissertation makes an important contribution to the research field of entrepreneurial finance; however, several further questions have been raised along the way. To begin with, the conceptual framework presented in Chapter B enables a structured overview of the status quo of research on venture capitalists' and business angels' investment criteria. It would be fruitful to investigate how venture capitalists and business angels assess entrepreneurs' business failure experience (cf. Cope et al., 2004). Since failure is inherent to the entrepreneurial process, the interest of entrepreneurship research in that area has increased (Jenkins & McKelvie, 2016). In particular, for entrepreneurial finance, it would be interesting to examine whether entrepreneurial failure is perceived differently by venture capitalists and business angels when selecting their investment targets. Business angels focus more on non-measurable criteria when taking funding decisions; therefore, it would be interesting to explore whether this implies that business angels automatically rate entrepreneurial failure more positively than venture capitalists do.

Future work could further investigate the heterogeneity of investor characteristics between different risk capital providers, thereby following the approach of Block et al. (2019). They used an experimental conjoint analysis to investigate investment criteria for later-stage ventures used by various private equity investors such as family offices, business angels, independent venture capitalists, growth equity funds, and leveraged buyout funds. Future

research may extend this investigation not only in terms of the investor base but also in terms of the different life-cycles stages of an investment target by exploring different types of dependent venture capitalists (e.g., corporate venture capitalists, bank-affiliated venture capitalists). Because a systematic empirical assessment is absent, it would be interesting to analyze how decision-making may vary across the different types of investors and across the different life-cycle stages of an investment target. For example, this will be of special interest to entrepreneurs seeking external equity funding to be able to better adapt their pitches to the varying funding requirements of investors.

Another potential area for future research is extending the analysis of entrepreneurs' investor selection. It would be interesting to investigate how entrepreneurs would choose between different types of equity investors with a given set of decision criteria. This may help equity investors, who are not selected by entrepreneurs in the first round, to better adapt to entrepreneurs' selection criteria, thereby enhancing their deal flow quality in the future. Moreover, while this dissertation measures the decision-making of entrepreneurs at a given point in time, a longitudinal analysis of the same entrepreneurs over different life-cycle phases of the venture or across various funding stages would be interesting to investigate how the focus of entrepreneurs' selection criteria may change. For instance, it may be interesting to see how an entrepreneur in the early stage may select an equity investor compared with a later stage, when the new venture has already secured its first market success and/or first external equity funding. Furthermore, scholars could investigate how personal characteristics, such as entrepreneurial self-efficacy (McGee, Peterson, Mueller, & Sequeira, 2009; Schmutzler, Andonova, & Diaz-Serrano, 2019), risk propensity (Palich & Bagby, 1995; Stewart & Roth,

2001), or opportunity recognition (McCline, Bhat, & Baj, 2000) may influence entrepreneurs' investor selection.

Finally, bank-affiliated venture capitalists' deal activities provide additional opportunities for future research. It may be fruitful to investigate the hybridity of bank-affiliated venture capitalists concerning their *raison d'être* and investment logics. In that regard, it would be interesting to explore whether the hybridization of a bank-affiliated venture capitalist is temporary or permanent. Since the banking landscape is part of a volatile environment with several actors following potentially disagreeing logics, a conflict might arise in a hybrid organization with a bank-affiliated venture capitalist, which in turn could endanger the business model. Thus, future research might be able to derive more explicit recommendations for the bank's management regarding the strategic orientation of its bank-affiliated venture capital unit.

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Appendix**Eidesstattliche Versicherung**

Ich, Christian Granz, versichere an Eides statt, dass die vorliegende Dissertation von mir selbstständig und ohne unzulässige fremde Hilfe unter Beachtung der „Grundsätze zur Sicherung guter wissenschaftlicher Praxis an der Heinrich-Heine-Universität Düsseldorf“ erstellt worden ist.

Düsseldorf, 15.12.2020