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SCHOOL OF ECONOMICS AND BUSINESS

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**AN ANALYSIS OF BUSINESS ANGELS' INVESTMENT BEHAVIOR  
AND CRITERIA**

DOCTORAL DISSERTATION

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*To my Mutti.*



## SUMMARY

This dissertation provides an analysis of business angels' investment behavior and criteria. In this dissertation, we first provide a literature review on business angel decision-making using various bibliometric analysis methods. This shows how the intellectual structure of the research field of business angel decision-making has changed, which terms are frequently used, and which are the focal relationships between knowledge form different scientific clusters. This bibliometric analysis uncovers collaborative networks within researchers in the field and interdisciplinary trends, fostering a deeper understanding of the evolving landscape of scholarly research in business angel decision-making. Furthermore, the metrics derived from this bibliometric study help to establish benchmarks of research excellence in business angel decision-making that help institutions and countries to assess their performance and make informed decisions to improve the quality and impact of their scientific work. In this part, we first review the current literature on the co-occurrence of keywords to determine which phrases are most prevalent in business angel decision-making research and when their development began. The second analysis we conduct is co-citation analysis, which reveals focal relationships between key research publications and reveals the structure of the scholarly community and the evolution of the research structure in business angel decision-making over time. The third analysis in this bibliometric study represents the first bibliographic coupling analysis in the field of business angel decision-making and provides insight into where research might be heading in the future. As there are limited bibliometric studies in the field of entrepreneurship in general and few in the field of business angel research, this is a valuable contribution to research methodology and literature reviews in this area.

In the following chapter, we take a phenomenological stance and view decision-making as a phenomenon to which business angels can relate through their lived experiences of investment decision-making and explore which individual-level factors play a role in business angel decision-making. Through such phenomenological lens, we deepen the understanding of business angel decision-making by compiling three sets of individual-level factors important in business angel decision-making: character-based, experience-based and relational-based factors. Within these three sets of individual-level factors we uncover three specific novel factors, namely intuition, emotional intelligence and respect, being important antecedents of business angel decision-making, but neglected in previous research. In line with previous research, our findings also highlight the importance of trust, culture, vision and experience in their decision making.

In the next chapter, we discuss in detail the business angels' individual-level factors in their decision-making. We uncover the story of business angel investment decision making and what personal factors are at the heart of this phenomenon. Among others, we discover the importance of relation-based factors in a business angel investment decision making. We know that business angels inject capital into ventures and thus participate in a nuanced social exchange that is essential for economic progress. This complex process involves the

exchange of information, the sharing of knowledge and skills from their previous experiences, the building of relationships of trust and the potential impact on business success. In return, business angels receive a financial reward in the form of returns on their investment in certain entrepreneurial ventures. In a broader sense, this synergistic relationship between business angels and entrepreneurs is more than an ambidextrous and socially embedded phenomenon. It is about the relationship between the business angel and the entrepreneur, which, if successful, results in relational rents that benefit both parties. Thus, in this chapter, we look at this relationship through the lens of social exchange theory and investigate the business angel's perspective of the achieved relational rents of an investment based on trust in the investee and amendments needed to sustain the investment (known as relational specific investments). We present a quantitative study that encompasses 139 business angels and that builds on the qualitative phenomenological study presented earlier. We adopt a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examine the determinants of organizational success in terms of achieving relational rents viewed through the business angel's perspective. We do so by looking at different stages of a venture's life cycle and uncover that relational rents are higher when business angels apply relation-specific investments in ventures at scalability and exit stages compared to investments in ventures that need a proof of concept, technology or business.

Keywords: business angel, decision making, bibliometric analysis, phenomenology, interpretative phenomenological analysis, individual-level factors, structural equation modelling, relational view

## POVZETEK

Ta disertacija predstavlja analizo naložbenega vedenja in kriterijev poslovnih angelov. V tej disertaciji najprej podamo pregled literature o odločanju poslovnih angelov z uporabo različnih metod bibliometrične analize. Ta kaže, kako se je spremenila intelektualna struktura raziskovalnega področja odločanja poslovnih angelov, kateri izrazi se pogosto uporabljajo in kateri žariščni odnosi med znanjem tvorijo različne znanstvene grozde. Bibliometrična analiza razkriva mreže sodelovanja znotraj raziskovalcev na tem področju in interdisciplinarne trende ter spodbuja globlje razumevanje razvijajoče se pokrajine znanstvenih raziskav pri sprejemanju odločitev poslovnih angelov. Poleg tega metrike, izpeljane iz te bibliometrične študije, pomagajo vzpostaviti merila raziskovalne odličnosti pri odločanju poslovnih angelov, ki institucijam in državam pomagajo pri ocenjevanju njihove uspešnosti in sprejemanju odločitev na podlagi informacij za izboljšanje kakovosti in vpliva njihovega znanstvenega dela. V tem delu najprej pregledamo trenutno literaturo o skupni pojavnosti ključnih besed, da bi ugotovili, kateri izrazi so najbolj razširjeni v raziskavah odločanja poslovnih angelov in kdaj se je njihov razvoj začel. Druga analiza, ki jo izvajamo, je analiza socitiranja, ki razkriva osrednja razmerja med ključnimi raziskovalnimi publikacijami in razkriva strukturo znanstvene skupnosti ter razvoj raziskovalne strukture pri odločanju poslovnih angelov skozi čas. Tretja analiza v tej bibliometrični študiji predstavlja prvo analizo bibliografskega spajanja na področju odločanja poslovnih angelov in zagotavlja vpogled v to, kam bi se lahko usmerile raziskave v prihodnosti. Ker je bibliometričnih študij na področju podjetništva na splošno malo, na področju raziskav poslovnih angelov pa še manj, je to dragocen prispevek k raziskovalni metodologiji in pregledom literature na tem področju.

V naslednjem poglavju zavzamemo fenomenološko stališče in na odločanje gledamo kot na pojav, s katerim se lahko poslovne angele povežejo s svojimi življenjskimi izkušnjami pri odločanju o naložbah, in raziskujemo, kateri dejavniki na ravni posameznika igrajo vlogo pri odločanju poslovnih angelov. Skozi takšno fenomenološko perspektivo poglobljamo razumevanje odločanja poslovnih angelov s predlaganjem treh sklopov dejavnikov na ravni posameznika, ki so pomembni pri odločanju poslovnih angelov: dejavniki, ki temeljijo na značaju, na izkušnjah in na odnosih. Znotraj teh treh sklopov dejavnikov na ravni posameznika odkrivamo tri specifične nove dejavnike, in sicer intuicijo, čustveno inteligenco in spoštovanje, ki so pomembni predhodniki odločanja poslovnih angelov, vendar so bili v prejšnjih raziskavah zanemarjeni. V skladu s prejšnjimi raziskavami naše ugotovitve poudarjajo tudi pomen zaupanja, kulture, vizije in izkušenj pri odločanju poslovnih angelov.

V naslednjem poglavju podrobno razpravljamo o dejavnikih individualne ravni poslovnih angelov pri odločanju poslovnih angelov. Razkrivamo zgodbo o naložbenih odločitvah poslovnih angelov in kateri osebni dejavniki so v središču tega pojava. Med drugim odkrivamo pomen dejavnikov, ki temeljijo na odnosih, pri odločanju o naložbah poslovnih angelov. Vemo, da poslovni angeli vlagajo kapital v podjetje in tako sodelujejo v niansirani

družbeni izmenjavi, ki je bistvena za gospodarski napredek. Ta kompleksen proces vključuje izmenjavo informacij, deljenje znanja in veščin iz njihovih prejšnjih izkušenj, gradnjo odnosov zaupanja in potencialni vpliv na poslovni uspeh. V zameno poslovni angeli prejmejo finančno nagrado v obliki donosa svojih naložb v določene podjetniške podvige. V širšem smislu je to sinergijsko razmerje med poslovnimi angelov in podjetniki več kot obojestranski in družbeno vpet pojav. Gre za odnos med poslovnimi angeli in podjetnikom, ki ob uspehu rezultira v relacijskih donosih, ki koristijo obema stranema. Zato v tem poglavju gledamo na to razmerje skozi perspektivo teorije družbene menjave in raziskujemo pogled poslovnih angelov glede doseženih rezultatov povezave pri naložbi, ki temelji na zaupanju v podjetje, v katerega vlagamo, in spremembah, potrebnih za ohranitev naložbe (poimenovane kot naložbe v povezavo). Predstavljamo kvantitativno študijo, ki zajema 139 poslovnih angelov in nadgrajuje prej predstavljeno kvalitativno fenomenološko študijo. Uporabimo relacijsko perspektivo, da poudarimo sinergijsko perspektivo vzajemnosti in zaupanja ter preučimo dejavnike organizacijskega uspeha v smislu doseganja rezultatov povezave, gledano skozi perspektivo poslovnih angelov. To naredimo tako, da pogledamo različne razvojne faze podjetja in odkrijemo, da so rezultati povezave višji, ko poslovni angel investira v prilagoditev svojih procesov in aktivnosti specifičnih za povezavo, v podvigih na stopnjah razširljivosti in izhoda v primerjavi z naložbami v podjetja, ki so v razvojni fazi dokazov o konceptu, tehnologiji ali poslu.

Ključne besede: poslovni angel, odločanje, bibliometrična analiza, fenomenologija, interpretativna fenomenološka analiza, faktorji na ravni posameznika, modeliranje strukturnih enačb, relacijski pogled

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# 1 INTRODUCTION

According to the European Business Angel Network (EBAN, 2023), “Since 2013, the size of the business angel investment market on the European continent has tripled, from approximately 420 million euros invested then, to the 1,4 billion euros invested in 2022” (p. 5). In the same year, the European community counted around 43,340 business angels responsible for 5,738 investments (EBAN, 2023, p.5). We must note that these official data from the European Business Angel Network include only business angels in business angel networks or similar associations, along with investments only in the visible business angel market. Previous studies in the business angel field suggest that not all business angels are part of networks (Zu Knyphausen-Aufseß & Westphal, 2008). Therefore, we can only guess how high the investment volume can be and what the actual number of business angels in Europe is. Nevertheless, the market data from European Business Angel Network show us that something is interesting going on in this multi-million sphere of business deals where business angels as dealmakers are usually hidden members of society (Farrell et al., 2008), either involved on an individual basis or within networks (Antretter et al., 2020; Bonini et al., 2018; Ramadani, 2012).

Either way, the significance of business angels in the global economic environment is multifaceted. First and foremost, as individual investors, business angels play a significant role in the entrepreneurial setting. Their ultimate goal is to address the critical funding gap that many entrepreneurs face, especially during their early development stages, where alternative financial avenues may be hesitant to invest in unproven concepts (Avdeitchikova & Landström, 2016; Bessière et al., 2020; Dibrova, 2015). Business angels are willing to take risks with innovative ideas and unproven business models by providing entrepreneurs with the necessary financial resources in the early stages to bring their business ideas to market. What makes them unique is that they allocate their personal wealth to support early-stage and startup ventures, unlike the other players in the venture funding field. Their financial support not only facilitates the development and scaling of these early-stage ventures but also fosters the growth of the entrepreneurial ecosystem (Mason & Harrison, 2004; Söderblom et al., 2016; Tuomi & Harrison, 2017).

Even if we know that the most common reasons for business angels to invest are positive and overwhelming investment returns (Riding et al., 2007; Sudek, 2006) and an overall business opportunity (Feeney et al., 1999; Mason, 2008; Yitshaki, 2008), there is evidence that in the post-investment phase they add value to ventures either by taking hands-on-role or mentoring (Freear et al., 1995; Harrison & Mason, 1992; Politis, 2016). Business angels bring their expertise, strategic advice, networking opportunities and operational support (Macht & Robinson, 2009; Politis, 2008; Sørheim, 2005). Furthermore, they act as facilitators for further finance, leveraging their experience and track record to attract additional funding for their portfolio companies (Sørheim, 2005).

Although scholars in entrepreneurship shift their perspective and look at business angels from a multidisciplinary perspective, they usually try to understand business angels' behavior through current economic theory, which assumes that individuals behave rationally (Malkiel, 2005; Zott & Amit, 2007) and observe business angels primarily by comparing them with venture capital investors (Bonnet & Wirtz, 2012; D. K. Hsu et al., 2014; Wallmeroth et al., 2018; K. Wilson & Reimsbach-Kounatze, 2011). From a conceptual point of view, however, business angels and venture capitalists diverge, and we cannot derive many conclusions for business angels when we study venture capitalists. Two main reasons argue for separate research for business angels and venture capitalists. First, their source of funding is different: While venture capitalists are companies that invest other people's money in already established businesses, business angels invest their own funds in promising business opportunities (Aernoudt, 2005; Drover et al., 2017; Sørheim & Landström, 2001). These circumstances lead to different attitudes towards risk and investment criteria and behavior. Secondly, and most importantly, from a behavioral perspective, the *modus operandi* of business angels and venture capitalists is different. While venture capitalists stay on the safe side of the ventures they have invested in by demanding a seat on the board while waiting for positive returns, business angels are more personally involved, and their role in the invested ventures is less formalized.

Consequently, there is evidence that the returns on investments made by business angels are significantly higher than those made by non-angels, mainly due to the nature of their personal involvement (Haar et al., 1988; Mason & Harrison, 2002; Riding, 2008). When they start a new investment, business angels have their “own unique motivations, intentions, experiences and personalities” (Collewaert, 2012), along with their money, time, knowledge, and social networks (Freear et al., 1994; Mason, 2008; K. Wilson & Reimsbach-Kounatze, 2011). When entrepreneurs use their acquired wealth, accumulated experience, and contacts to promote the early entrepreneurial ventures of others, they become business angels and entrepreneurially recycle (Mason & Harrison, 2006). The onset of business angel behavior is thus triggered by previous entrepreneurial experiences and/or entrepreneurial exit events, leading them to devote their energy, time, money, experience and networks to creating and supporting further entrepreneurial activities.

Furthermore, some studies show that investment behavior is irrationally driven by investment intention (Alleyne & Tracey, 2011; East, 1993) and roots in behavioral finance (Avvakumov et al., 2002; Daniel et al., 1998). Evidence suggests that business angels make investment decisions based on experience, cognitive factors and heuristics rather than relying solely on compensatory decision models (Maxwell et al., 2011; Van Osnabrugge & Robinson, 2000). Experience-based decision-making is often led by irrationally framed decision criteria (Daniel et al., 1998; H. Zhao et al., 2005). However, business angel investments go beyond financial support and include a belief in the entrepreneur's capabilities, innovation potential and commitment to long-term success (Mason & Harrison, 2000; Mason & Stark, 2004). In return, the entrepreneurs commit to using the invested

capital wisely, implementing strategic plans and maintaining communication (De Noble, 2001; Parhankangas & Ehrlich, 2014). This exchange of trust and commitment is critical as specific investments in time, knowledge and resources become core to the relationship (Cardon et al., 2017; Falcão et al., 2023; Lefebvre et al., 2022; Prowse, 1998).

We can understand business angel investment behavior through a multi-level review of their pre- and post-investment activities, which include boundary spanning, structuring, leadership, the “doing” process (performing venture tasks) and monitoring (Fili & Grünberg, 2016). Research on business angel investment behavior suggests that decision-making is primarily embedded in this process (Ding et al., 2015; Harrison et al., 2015; D. Smith et al., 2010). While existing studies often delve into the financial criteria business angels use to make their decisions (Croce et al., 2017a; Sudek, 2006), there is a relatively narrow research frame that examines the business angels as active and “personal” contributors to the growth and success of ventures they invest in. To understand the pre-investment behavior and the dynamics of post-investment involvement, we have to observe business angels from their personal perspective. This can provide us with valuable insights into the impact of their role in the entrepreneurial ecosystem. Indeed, the broad consensus among scholars is that business angels matter in the entrepreneurial ecosystem, and it is, therefore, essential to study them in depth (Edelman et al., 2017; Kelly, 2007).

Whether for policymakers, educators, other investors, or active entrepreneurs themselves, to understand how business angels can contribute to the entrepreneurial ecosystem, we need to examine their behavior, but from their own perspective and not that of other types of investors. They are unique, so the approach to studying them should also be unique. Moreover, this is what current research still lacks – a unique and detailed perspective on business angels’ investment behavior and criteria. Therefore, this dissertation offers a new perspective on the holistic role of business angels in entrepreneurship and their investment decision-making. First, we perform a multi-technique bibliometric analysis of business angel decision-making literature to gain insight into patterns, trends and impact of scientific publications from the field. In the second part of the dissertation, we examine in depth how 16 business angels behave in the pre-investment phase, which individual-level factors influence how they make decisions, and why they make these investment decisions. Our primary focus is to obtain broader explanations of investment decision-making through a phenomenological approach. In addition, in the third part of this dissertation, we observe business angels’ behavior in the post-investment phase, where we measure how their individual-level factors influence how they build relationships with their entrepreneurs to gain expected investment outcomes. In particular, we hypothesize that trust as an individual-level factor is positively associated with relational rents as the outcome of the relationship between the business angel and the entrepreneur. Still, we argue that this relationship is mediated by relation-specific investment and depends on the entrepreneurial venture development stage. We validate our proposed hypothetical model on a sample of 139 European business angels.

## 1.1 Research problem and research questions

With the previously stated conceptual overview of business angel investment behavior and criteria, the following question stands as an overarching research problem in this dissertation:

*How do business angels use their individual-level factors to engage in decision-making when they approach venture investments, and how do their individual-level factors relate to the performance of the ventures they invest in?*

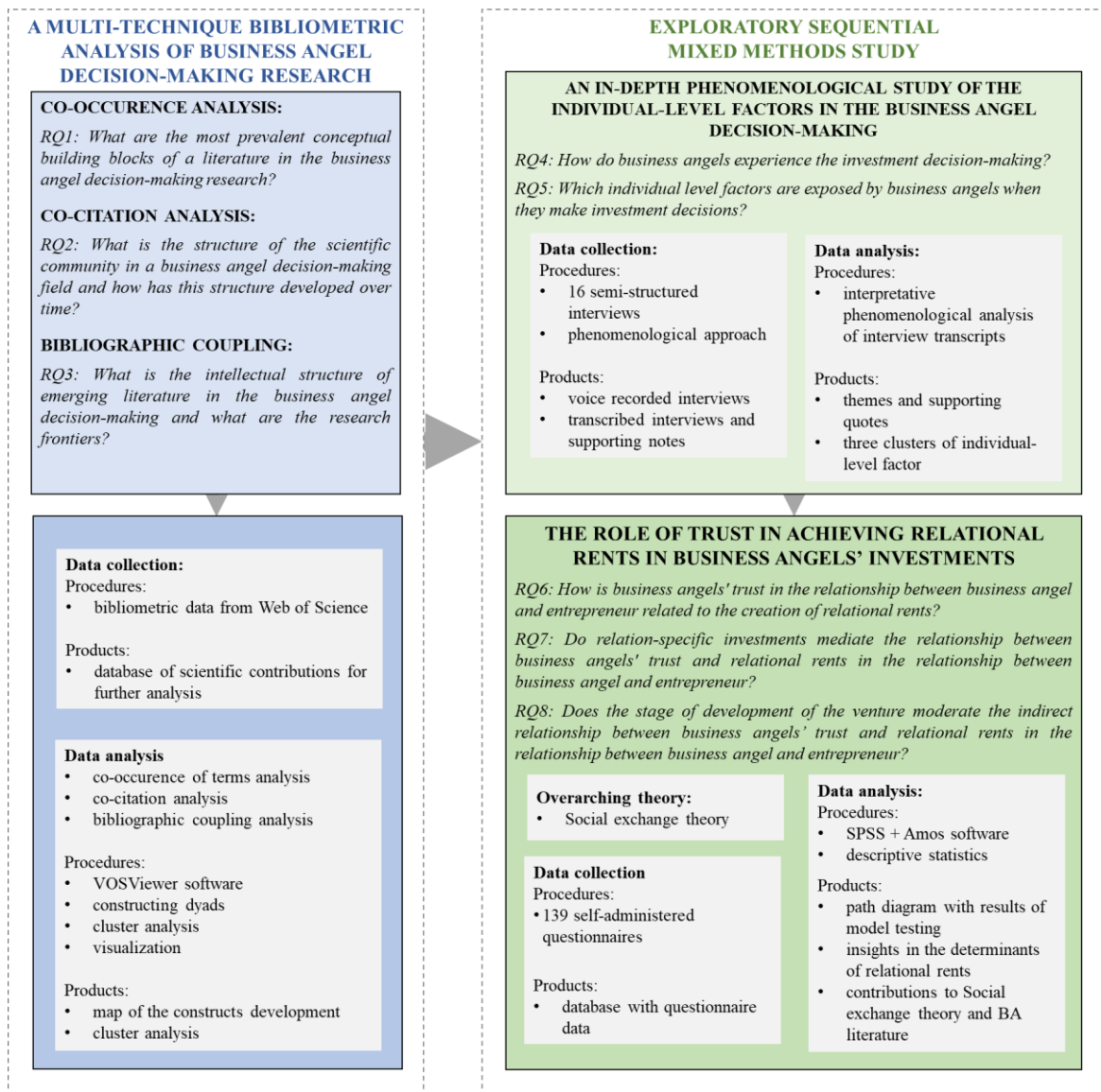
To explore this research problem, we develop a comprehensive framework that utilizes a broad approach to exploring the existing literature through multi-technique bibliometric analysis of business angel decision-making and exploratory sequential mixed methods study.

Figure 1 illustrates the detailed research framework in this dissertation and provides an overview of how we examine the conceptual background of the main research problem to build up a better understanding of business angel investment decision-making through the mixed methods study. We use concepts from qualitative phenomenological study as the first research stage in the exploratory sequential mixed methods research design to build upon it in the quantitative study.

### 1.1.1 Fragmented scholarly contributions need a proper review

In the field of entrepreneurship, scholars sometimes conduct interdisciplinary research by adopting concepts and theories from other fields of research. One of the approaches to drawing on dyads from different fields is to create a bibliometric review of the literature by analyzing and visualizing the informal communication between the most influential scholars in the respective research area. Bibliometrics describes the process of using mathematical and statistical methods to examine the process of “written communication and the nature and course of a discipline’s development” (Pritchard, 1969). It examines science or a particular discipline by evaluating the performance of individual publications by visualizing the structure and dynamics of fields using data from formal sources (i.e., publications, books, journals, articles) (Borgman & Furner, 2005; Cobo et al., 2011; Hood & Wilson, 2001). In addition, it provides a way to identify the most influential authors, shows the connections between authors, and serves as a benchmark for the research community to position current research and recognize new research frontiers (Ferreira, 2017). Bibliometrics is actively used in scientific reviews on specific topics or areas because it minimizes potential biases (Garfield et al., 1983), appoints a focus of leading ideas between researchers, provides dyads between research paths (Courtial et al., 1993; Nerur & Rasheed, 2008) and analyzes the evolution of science (Casillas & Acedo, 2007; Coviello & Jones, 2004; D. Zhao & Strotmann, 2008).

Figure 1: Detailed doctoral dissertation research framework



Source: Own work.

Recent studies reveal the communication between scholars in the general entrepreneurship field, with some studies only mentioning the existence of business angels (Reader & Watkins, 2006; Schildt et al., 2006). To date, a traditional review of business angels as a research field has been performed by (Edelman et al., 2017; Gabrielsson & Politis, 2006; Harrison, 2017). Nevertheless, the current literature on business angels' investment behavior, especially their decision-making, is largely fragmented. Scholars in this field call for a more thorough understanding of the academic structure of the entrepreneurship field by focusing on specific subfields and drawing on specific constructs and theoretical dyads (Busenitz et al., 2017; Cornelius et al., 2006; Schildt et al., 2006; Teixeira, 2011).

To date, only three existing literature reviews in business angel research provide a qualitative explanation of the potential research topics (Edelman et al., 2017; Kelly, 2007; Wallmeroth

et al., 2018). Unfortunately, we must note at this point that, so far, only one recent study describes the structure of business angel research through bibliometric network analysis (Tenca et al., 2018a). Other studies that measure research structure are not specific enough to business angels as individual investors, as they only partially observe this research niche and focus more on other funding sources for entrepreneurial ventures (Arora et al., 2023; Capizzi et al., 2022; Cumming et al., 2023; Padilla-Ospina et al., 2018; Pandey et al., 2023; Sharma et al., 2021).

Given the increasing number of studies in this field, the largely fragmented base of scholarly contributions seems to be hidden and is sometimes not even mentioned in these earlier literature reviews. We need to extract the specific dyads from the literature to understand how research on business angels is really structured. To clarify this under-researched area in the literature, the first aim of this dissertation is to develop a three-pronged approach for a multi-technique bibliometric analysis of the field of business angel decision-making that answers the following research questions:

*Research question 1: What are the most prevalent conceptual building blocks of literature in the business angel decision-making research?*

*Research question 2: What is the structure of the scientific community in a business angel decision-making field, and how has this structure developed over time?*

*Research question 3: What is the intellectual structure of emerging literature in business angel decision-making, and what are the research frontiers?*

With our bibliometric analysis of the literature, we provide a further understanding of the development of business angel research and will frame the current evidence on business angel investment decisions. Reviewing the literature on business angel decision-making and identifying areas of influence is highly relevant as it continues to provide provocative stimuli for both business angels, entrepreneurs seeking investments and policymakers, which could lead to a rethinking and reformulation of investment procedures, strategies and policies, highlighting the shortcomings in the current literature.

#### 1.1.2 Uncovering the personal business angels' experiences in their pre-investment behavior

The academic community has studied business angels extensively (Falcão et al., 2023; Freear et al., 1994; Harrison, 2022). Besides their personal financial sources, they also provide active mentoring and networking opportunities to the ventures they invest in (Falcão et al., 2023; Macht & Robinson, 2009; Riding, 2008). Their personal engagement provokes individual-level factors in their investment decision-making, especially when the evidence says it is based mainly on experience and heuristics (Maxwell et al., 2011; Van Osnabrugge

& Robinson, 2000). There is also evidence that they rely more on cognitive factors rather than relying solely on compensatory decision models when making their investment decisions (Franić, 2014; Franić & Drnovšek, 2019; Maxwell et al., 2011).

Current studies in this field usually focus on individual-level factors that entrepreneurs expose, which business angels recognize as important to make their investment decisions in the first place (C. Clark, 2008; Collewaert, 2016; Svetek, 2022a, 2022b; Svetek & Drnovšek, 2022). When we try to discuss more broadly which business angels' individual-level factors are crucial to making investment decisions, we find ourselves in a largely underexplored area. There is evidence that business angels expose trust as the essential antecedent of their investment decision-making (Ding et al., 2015; Harrison et al., 1997; Sørheim, 2003) along with business angel demographics such as age, education, income and gender (Becker-Blease & Sohl, 2011; Harrison & Mason, 2007; Li et al., 2014; Maxwell et al., 2011; Sohl, 2003; Wong & Ho, 2007), experience (Harrison et al., 2015; Maxwell, 2016) and culture (Block et al., 2019; Mason et al., 2019). Nevertheless, even if some scholars still seek an answer to the question of how "who business angels are" impacts their investment decision-making (Edelman et al., 2017; Paul et al., 2007), current studies fail to offer valid interpretations. We know what the business angel investment process looks like, but we still do not know enough about what triggers their investment decisions, the latter as firmly embedded in the notion of who they really are. Therefore, with the qualitative phenomenological study in this dissertation, we aim to explore business angels' lived experiences in investment decision-making. Thus:

*Research question 4: How do business angels experience investment decision-making?*

*Research question 5: Which individual-level factors do business angels expose when making investment decisions?*

### 1.1.3 Building relational rents in the post-investment stage

Investment in entrepreneurial ventures is at the heart of business angels' activities, and the alliance between a business angel and an entrepreneur aims to generate economic growth from early-stage entrepreneurial finance. Every year, we see more and more scholarly contributions to this area in a more general sense (Arthurs & Busenitz, 2003; Blaseg & Hornuf, 2023; Bonnet et al., 2022; Fairchild, 2011; Gregson et al., 2017; Herrmann et al., 2016; Macht & Robinson, 2009). The majority of studies contribute to our understanding of how agency theory can inform the study of the relationship between business angels and entrepreneurs (Avdeitchikova & Landström, 2022; Colombo et al., 2023; Wesemann & Antretter, 2023). For example, Kelly and Hay (2003) examine the influence of various factors on the form of contracts in the business angels and entrepreneur relationship, while Van Osnabrugge (2000) compares the investment procedures of business angels and venture capitalists, highlighting differences in their approaches to mitigating agency risks in the

relationship with entrepreneurs. However, no studies have explored the alliance between business angels and entrepreneurs as a social relationship.

This is surprising since both business angel and entrepreneur disclose their individual-level factors, and investment becomes not only a financial transaction but also a manifestation of trust, shared vision, and mutual commitments. Their relationship is evidence of exchange reciprocity within different forms (e.g., financial, social, and human capital exchange). As the ventures evolve through the various stages of growth, the nature of these investments adapts to both parties' changing needs and aspirations. This shared journey highlights the sophisticated social exchange that defines the relationship between business angels and entrepreneurs in early-stage entrepreneurial finance. From the business angels' perspective, in this dissertation, we additionally observe their relationship with entrepreneurial ventures in the post-investment stage in the context of relations employment. From the social exchange theory and relational view, we observe this give-and-take dynamic where business angels seek to maximize rewards in their relationship with entrepreneurs in creating a sustainable and profitable venture (Dutta & Khurana, 2023; Huang & Knight, 2017; Madanoglu, 2018).

A growing number of scholars question the frequently advocated unique role of financial criteria that business angels supposedly use for investment selection and propose to look for soft, hard-to-observe criteria in business angel investment selection framed around cognition-based personal factors (Huang & Pearce, 2015; Mason et al., 2017; Mason & Stark, 2004; Sudek, 2006). Also, previous research has mainly focused on the direct effects of business angels' individual-level factors on investment decisions.

Differing from previous research, in this dissertation, we look at this relationship between a business angel and an entrepreneur through the lens of social exchange theory and investigate the business angel's perspective of the achieved relational rents of an investment based on trust in the investee and amendments needed to sustain the investment (known as relation-specific investments). Consistent with recent business angel and management research, we conceptualize relational rents as the performance of a joint venture (Capizzi, 2015; De Clercq & Sapienza, 2001; Herrmann et al., 2016). We present a quantitative study encompassing 139 business angels that builds on the qualitative phenomenological study presented earlier. We adopt a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examine the determinants of organizational success in terms of achieving relational rents viewed through the business angel's perspective. We do so by looking at different stages of a venture's life cycle and uncover that relational rents are higher when business angels apply relation-specific investments in ventures at scalability and exit stages compared to investments in ventures that need proof of concept, technology or business. Therefore, we seek answers to the following questions:

*Research question 6: How is a business angel's trust in the relationship between a business angel and an entrepreneur related to creating relational rents?*

*Research question 7: Do relation-specific investments mediate the relationship between a business angel's trust and relational rents in the relationship between a business angel and entrepreneur?*

*Research question 8: Does the venture's development stage moderate the indirect relationship between the business angel's trust and relational rents in the relationship between the business angel and entrepreneur?*

## **1.2 Research approach and research goals**

To answer our first three research questions, we review existing research in business angel decision-making using a bibliometric analysis approach. First, we use a co-occurrence analysis of terms related to a conceptual overview of research, followed by a co-citation analysis of previous research. Finally, a bibliographic coupling analysis highlights research limitations in the business angel decision-making field.

Research goal 1: To uncover the conceptual building blocks of literature in the business angel decision-making research.

Research goal 2: To uncover how the structure of the scientific community in a business angel decision-making field developed over time.

Research goal 3: To see the intellectual structure of emerging literature and expose the research frontiers of business angel decision-making literature.

In the second part of this dissertation, we aim to identify business angel decision-making utilizing a mixed-methods approach. By definition, mixed methods is a research procedure offering collection, analysis, and integration of both qualitative and quantitative data at a particular stage of the research process, but within a single study, with the aim to better understand the research issue (Creswell, 2003; Tashakkori & Creswell, 2003). This dissertation uses sequential exploratory design (Ivankova et al., 2006) in two phases.

In our first phase, the qualitative study, we take a phenomenological standpoint and look at decision-making as a phenomenon that business angels can relate to through their lived experiences of making investment decisions. We also examine what individual-level factors play a role in business angels' decision-making. In this study, we use the phenomenological lens to interview 16 purposively selected European business angels to deepen the understanding of business angels' decision-making. The research goals for this phase of the study are:

Research goal 4: To explore and gain a nuanced understanding of the lived experiences and subjective perspectives of business angels who have had entrepreneurial venture investment experiences and to uncover the underlying meanings and essence of their experiences.

Research goal 5: To uncover new individual-level factors of business angels that might not be covered in the current literature but are important in their investment decision-making.

After completing the qualitative stage study, we follow up with quantitative data collection and analysis from a survey of 136 business angels from European countries to test the relationships among variables acquired in the qualitative phase. We use structural equation modeling to test our hypothetical model on how the relational rents are built in the relationship between business angel and entrepreneur. Hence, the research goals are as follows:

Research goal 6: To observe how trust in the relationship between business angel and entrepreneur is associated with creating relational rents.

Research goal 7: To uncover the potential of relation-specific investments and their mediating role between trust and relational rents in the relationship between business angel and entrepreneur.

Research goal 8: To see how the venture development stage moderates the indirect relationship between trust and relational rents.

Hence, the second research phase builds on the first phase, and finally, both phases of research are connected. From the practical implication side, the aim of the study is twofold. First, we aim to understand business angels' individual-level factors where early-stage entrepreneurs compete for their investments. Secondly, we dig deeper into how to adjust to their competing policies. Moreover, the study provides information to business angel society about how their individual-level factors relate to their investment behavior.

### **1.3 Scientific contributions**

With this doctoral dissertation, we aim to contribute to science in several aspects.

First, this will be one of the first scholarly contributions that embeds a comprehensive literature review from a bibliometric perspective. This makes a significant scientific contribution as we aim to provide a quantitative lens through which other scholars can evaluate and understand the dynamics of intellectual communication in the business angel decision-making field. The three analyses we undertake allow for mapping scientific landscapes in this research niche, then identifying emerging research trends and frontiers and assessing the current scholarly research impact and quality. Thus, it provides an objective evaluation of scholarly contributions that are already in the field. With our bibliometric analyses, we will unveil collaboration networks and track the flow of knowledge through citation patterns, show clusters of knowledge, and track the development of the knowledge through time.

Second, our qualitative part of the mixed-methods study makes two theoretical contributions to the literature on business angel decision-making. First, we add to the existing business angel decision-making research by uncovering new individual-level factors that business angels rely on when deciding whether to invest. To date, the literature only sporadically considers the role of intuition, emotional intelligence, and respect in business angels' decision-making (Botelho et al., 2023; Harrison et al., 2015; Huang & Pearce, 2015). With this study, however, we are the first to demonstrate the importance of those individual-level factors in the lived experiences of business angels.

The third contribution is to continue the stream of literature by synthesizing the fragmented factors identified in the previous literature and adding new individual-level factors that arise from our qualitative study. Namely, the newly identified individual-level factors that business angels use or consider in their decision to invest in an entrepreneurial venture we section into three groups:

- the character-based factors that relate to the business angel's intuition, emotional intelligence, and vision,
- the experience-based factors which consider the business angel's experiences, skills and competencies, and
- the relational-based factors that consider the business angel's views on the shared culture and values, respect and trust with the entrepreneurs willing to invest.

With this framework, we aim to stimulate future research to deepen and empirically substantiate the individual-level factors in business angel decision-making.

Fourth, we contribute to the business angel literature by shifting the perspective from the agent-principal relationship based on monitoring activities and ownership incentives (i.e., agency theory perspective) to the synergetic dyad perspective of reciprocity and trust (i.e., social exchange theory) in examining the determinants of relational rent creation in the relationship between business angel and entrepreneur. In this way, we provide new insights into the emergence of synergetic relationships between business angels and entrepreneurs. We base our theoretical model on the assumption that trust and relation-specific investments build relational rents, but this relationship depends on the venture growth stage.

Finally, we contribute by empirically testing our proposed theoretical model of relational rent creation in the relationship between business angel and entrepreneur relationship. We provide empirical evidence of the role of trust and relation-specific investments in building relational rents based on a sample of 139 business angels across Europe.

## **1.4 Dissertation structure**

This dissertation is structured as follows. After the introduction, Chapter 2 provides an overview of the literature in the field of business angel decision-making. Here, the

development of the main constructs, the knowledge dyads, the evolution of research over time, and the limitations of research in the field of business angel decision-making are examined using a three-part approach. Starting from the main constructs and knowledge segmentation, in Chapter 3, we examine the phenomenon of business angel decision-making with the phenomenological lens and uncover the new factors at the individual level of business angels that influence their investment decisions. Based on the uncovered individual-level factors, we empirically test the hypothesized model of the impact of individual-level factors on relational rents in Chapter 4. Chapters 2, 3, and 4 each contain sub-chapters on theoretical background, methodological issues, results, and discussion. Chapter 5 of this dissertation provides a broader discussion of the results of the previous studies, in which we provide additional implications for theory and practice as well as limitations of the study and avenues for future research. The final Chapter 6 concludes the dissertation. After the references section, the last two parts refer to appendices and a detailed summary of the dissertation in Slovenian.

## **2 A MULTI-TECHNIQUE BIBLIOMETRIC ANALYSIS OF BUSINESS ANGEL DECISION-MAKING RESEARCH**

This chapter provides a literature review on business angel decision-making using various bibliometric analysis methods. It shows how the intellectual structure of the research field of business angel decision-making has changed, which terms are frequently used, and which focal relationships between knowledge form different scientific clusters. This bibliometric analysis uncovers collaborative networks within researchers in the field and interdisciplinary trends, fostering a deeper understanding of the evolving landscape of scholarly research in business angel decision-making. Furthermore, the metrics derived from this bibliometric study help to establish benchmarks of research excellence in business angel decision-making that help institutions and countries assess their performance and make informed decisions to improve the quality and impact of their scientific work. In this chapter, we first review the current literature on the co-occurrence of keywords to determine which phrases are most prevalent in business angel decision-making research and when their development began. The second analysis we conduct is co-citation analysis, which reveals focal relationships between key research publications and reveals the structure of the scholarly community and the evolution of the research structure in business angel decision-making over time. The third analysis in this bibliometric study represents the first bibliographic coupling analysis in the field of business angel decision-making and provides insight into where research might be heading in the future. As there are limited bibliometric studies in the field of entrepreneurship in general and few in the field of business angel research, this is a valuable contribution to research methodology and literature reviews in this area.

## 2.1 Introduction

Since there is an increasingly important evolution of business angel operations in the entrepreneurial ecosystem (Tenca et al., 2018; White & Dumay, 2017), the research development analysis is a timely and knowledge-boosting study to perform. The early beginnings of knowledge development in the business angel decision-making field align them with venture capitalists (Tyebjee & Bruno, 1984; Zacharakis & Meyer, 1998), yet in the 1990s, the literature begins differentiating them (Mason, 2008; H. Wilson, 1995), since business angels use their personal funds to provide financial support to early-stage ventures, while venture capitalists are professional investment firms managing pooled funds from various sources to invest in high-potential ventures at various stages of development. Later research attributes business angel behavior and decision-making to be two of the most critical topics in the business angel literature because of their increasing contribution to local economies (Edelman et al., 2017). While investigating business angel behavior and decision-making, we note that scholars sometimes borrow theories from other research fields. In the rise of diverse knowledge sub-fields, several researchers argue that there is a need to measure the intellectual structure of the entrepreneurship field (Cornelius et al., 2006; Schildt et al., 2006; Teixeira, 2011). Some attempts have already been made by employing bibliometric analysis in entrepreneurship research (Gregoire et al., 2006; Reader & Watkins, 2006; Schildt et al., 2006). However, to date, we have only two published bibliometric analyses in the field of business angel research (Tenca et al., 2018).

Although some literature reviews on the business angel research field offer a comprehensive and narrative reflection on the literature to date (Edelman et al., 2017; Gabrielsson & Politis, 2006; Harrison, 2017), to date, no study draws specific intellectual dyads, nor reviews the informal communication between scholars in the business angel decision-making research. One of the approaches to drawing dyads from different fields and reviewing the informal intellectual communication within a research field is to produce a bibliometric review of the literature. Still, all existing bibliometric reviews in entrepreneurship research that report communication between scholars frame the general discussion in the field, some just mentioning the existence of business angels (Reader & Watkins, 2006; Schildt et al., 2006).

This chapter addresses the aforementioned issues through a comprehensive multi-technique bibliometric analysis of business angel decision-making research. Bibliometric studies in this chapter investigate the most common keywords in the field and how they relate, the nature of knowledge in the business angel decision-making field, how its structure developed over time, and what the frontiers of research in the field are.

This study contributes to entrepreneurship research by examining the intellectual dyads in business angel decision-making research and provides an overview of knowledge clusters within specific time intervals. A review of the literature about business angel decision-making and identification of impactful areas is highly relevant because it provokes impulses for business angels, entrepreneurs seeking investments, and policymakers. It leads to

rethinking and restating investment procedures, strategies, and policies; thus, it explicitly shows underexplored areas to which future research can contribute.

## 2.2 Background

We trace back the conceptual foundation of business angels to Wetzel (1983) and his first formalized introduction of this type of investors who direct their capital investments to start-ups and emerging technology-based companies. From then on, studies represent business angels as informal individual investors who incentivize ventures in seed or early-stage phases and bridge the financial gap in their development (Edelman et al., 2017; Harrison, 2017; Mason, 2006; Wallmeroth et al., 2017). Usually, they are high-net-worth individuals who use their own money to invest in ventures they feel comfortable with (Freear et al., 1994, 1995; Wetzel, 1983) and sometimes even invest within their geographic proximity (Avdeitchikova & Landström, 2016; Edelman et al., 2017; Osnabrugge & Robinson, 2000).

In the academic community, vocabulary standardization, especially in interdisciplinary research, is of great benefit. However, in our field of interest, scholars face a vocabulary inconsistency when defining the unit of analysis. While European-based research commonly uses the term “*business angels*” (Argerich et al., 2012; Avdeitchikova & Landström, 2016; Capizzi, 2015; Capizzi et al., 2022; Franić & Drnovšek, 2019; Freear et al., 1994; Harrison & Mason, 2007; Herrmann et al., 2016; Mason et al., 2017, 2021; Maxwell & Levesque, 2014; Sørheim, 2005), United States based research, on the other hand, used the term *angel investors* to represent the same unit of analysis (Brush et al., 2012; Collewaert, 2012; Edelman et al., 2017; Madill et al., 2005; Mitteness et al., 2012; Morrisette, 2007; Prowse, 1998; K. Wilson & Reimsbach-Kounatze, 2011). Even if the language differences do exist, the problem of lexicon inconsistencies does not. However, the difference in defining the main concepts created only redundancy in supplemental concepts and potential deficiencies in key term searches.

As an essential part of the entrepreneurial ecosystem, business angels do not just play the role of financial incentive providers. From the operational side, their active involvement forms their role in the venture community. Here, we would like to emphasize their decision-making role and leadership position in ventures they invest in (Forrester et al., 2020; Freear et al., 1994; Granz et al., 2020; Sørheim, 2005). Even if the most common reasons for business angels to invest are positive and overwhelming investment returns (Riding et al., 2007; Sudek, 2006) as well as an overall business opportunity (Feeney et al., 1999; Mason, 2008; Yitshaki, 2008), evidence suggests that in post-investment stages business angels actively engage in the ventures they invested in, either through taking a hands-on role or through monitoring investments (Freear et al., 1995; Harrison & Mason, 1992). Consequently, there is evidence that returns on investments made by business angels are significantly higher than those made by non-angels, mainly because of the nature of their involvement (Haar et al., 1988; Mason & Harrison, 2002; Riding, 2008). When entering a

new venture, business angels dispose their new ventures with their “own unique motivations, intentions, experience and personality” (Collewaert, 2012), along with their money, time, knowledge and social networks (Freear et al., 1994; Mason, 2008; K. Wilson & Reimsbach-Kounatze, 2011). When entrepreneurs use their acquired wealth, accumulated experiences and contacts to boost other’s early-stage entrepreneurial ventures, they become business angels and entrepreneurially recycle (Frimanslund, 2022; Mason & Harrison, 2006). Therefore, previous entrepreneurial experience or entrepreneurial exit events trigger business angel decision-making. It demands the devotion of their energy, time, money, experience and networks to create and support more entrepreneurial activity.

## **2.3 Co-occurrence analysis and clustering**

As we intend to review the literature in the field, the first analysis we pursue is the co-occurrence analysis, which “uncovers the conceptual building blocks of the literature” (Zupic & Čater, 2015). A co-occurrence analysis, sometimes called a co-word analysis, represents a content analysis that uses words in documents to show relationships between specific terms and build the conceptual landscape of the particular research domain (Callon et al., 1983). The basic idea behind this analysis is that words or terms co-occur in documents, meaning that concepts behind those terms are closely related. The more terms co-occur together or even co-occur through different timeframes, the stronger their relationship is, which shows the building blocks of a research field (Börner et al., 2003; Chen, 2017). Thus, with this analysis, we first capture the broader landscape of the business angel research domain and uncover the topics associated with the research stream.

### **2.3.1 Data and procedures**

To generate the co-occurrence analysis, we follow the procedure by Zupic and Čater (2015) for science mapping with bibliometric methods. We use Web of Science (Clarivate, 2019) as our database in line with the majority of previous bibliometric studies in entrepreneurship (Bernatović et al., 2022; Cornelius et al., 2006; Gartner et al., 2006; Rey-Martí et al., 2016; Yu et al., 2022).

Web of Science is a citation database with multidisciplinary coverage of high-impact journals in science, social sciences, and international proceedings of conferences. We filter core references in Web of Science, where we determine the sample of primary papers for the co-occurrence analysis. In the literature, there seems not to be a general definition of how to select search terms in bibliographic studies. We decide to follow the most common practice – we include key terms that derive from reading the literature in the field through Boolean search terms (Capobianco-Uriarte et al., 2019; Ferasso & Cherobim, 2017; Forliano et al., 2021; Guleria & Kaur, 2021; Piñeiro-Chousa et al., 2020). Though it seems entirely arbitrary, these keywords precisely reflect the observed field. We search for terms “*business angel\**” OR “*angel invest\* AND “decision\* mak\*”*” within the Web of Science topic search

field. The use of the asterisk (\*) as a truncation symbol allows the database to search for different endings of the word (Granados et al., 2011). This search ability is common for e-source search algorithms and is the most convenient way to cover all appearances without losing some of the literature sources.

We perform a database search through the Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI) and Emerging Sources Citation Index (ESCI). To ensure the use of a validated knowledge base, we restrict our search to peer-reviewed scholarly journal articles and reviews (Meyer et al., 2011; Schildt et al., 2006) in the English language for the period from January 1981 to March 2019. Further, we manually refine the search by specifying Web of Science categories with the highest record count for the observed search terms: business, economics, management, business finance, sociology, operations research management science, social sciences interdisciplinary, psychology, behavioral sciences, and psychology applied.

Our query results in 1,009 results from the Web of Science Core collection. After the initial overview of field development in numerical terms, we perform an in-depth bibliometric analysis. We export data from the Web of Science database for further treatment on a local level and use specialized bibliometric software, VOSviewer (van Eck & Waltman, 2014), as our primary tool, both for analysis and visualization of the bibliometric network. We import in VOSviewer the data obtained in the Web of Science search and perform co-occurrence analysis with keywords as a unit of analysis.

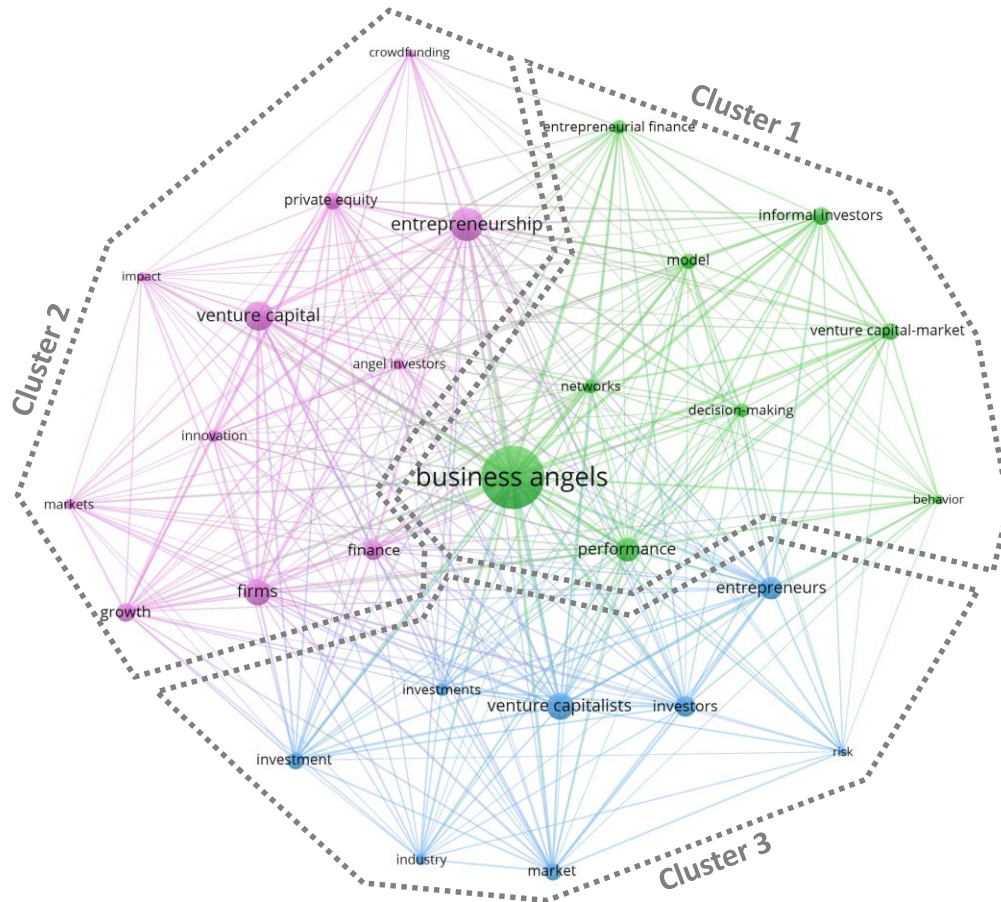
We select a minimum of 10 occurrences of a keyword to gain a more manageable network for further analysis. Of 4,921 keywords, 97 meet the threshold. For each of the 97 keywords, the total link strength of the co-occurrence links with other keywords is calculated and imputed for further analysis in VOSviewer. We perceive link strength as the underlying content similarity measure (Meyer et al. 2011).

### 2.3.2 Co-occurrence analysis results

Our analysis reveals three major keyword clusters in the field's network map. The first cluster is the major conceptual cluster of business angel research, which uncovers the concepts mainly derived from the economics and business research field. It deals with business angel decision-making performance in investment networks where the emphasis is on the behavior. Later on, in the second cluster, the relationship between business angels and venture capital gets stronger with the newer concepts in the field, such as ownership structures and key terms in entrepreneurial finance (i.e., volatility, returns, equity crowdfunding, decision-making, venture capital market and growth). The third cluster of keywords tries to distinguish between business angels and venture capitalists. This is also where the business angel conceptual framework is strongly interrelated with the concept of

growth and performance in innovation and private equity entrepreneurship. Clusters within a co-occurrence analysis we show in Figure 2.

*Figure 2: Co-occurrence analysis map of a field with clusters*



*Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).*

Within the following subchapters, we analyze three clusters that occur in our analysis and provide our definitions of select ones, giving us the highest total link strength in the network analysis.

#### *2.3.2.1 Cluster 1: Business angel decision-making performance in informal investment networks*

The first cluster of key terms shows concepts dispersed around the term “business angels”, being a central term in a network cluster. In our search the term “business angels” occurs 75 times, and around the year 2013, this term appears strongly in the business angel research framework. In the literature observed from this co-occurrence map, the “business angels” rely heavily on “performance”, the term remaining in the same cluster.

In our search, “performance” occurs 125 times, and around the year 2014, this term starts appearing in the business angel research framework. In the literature observed from this co-occurrence map, the “performance” largely relies on the financial indicators of success. “Performance” in the business angel literature is mainly related to measuring business angel investment returns, where the common metric to measure and compare investment returns is the internal rate of return (Aernoudt, 2005; Freear et al., 1995; Gregson et al., 2017). Some studies align the “performance” with how the business angels affect the performance of entrepreneurial ventures through the presence of angel syndicates and the hands-on involvement in the business procedures (Bonini et al., 2019), through the contribution of their skills, expertise, knowledge, and contacts to entrepreneurial ventures (Lumme et al., 1998), and exposing entrepreneurial orientation (Lindsay, 2004). There is also a stream of literature in this area which gives the “performance” a more behavioral perspective. Capizzi (2015) outlines that higher business angel investment performance determines a more efficient venture capital market where higher investment performance is determined by higher levels of business angel business experience and higher investment rejection rates (Capizzi, 2015).

As we indicate in our co-occurrence analysis map (Figure 2), besides the leading term in this cluster being “business angels”, several inferior, still important terms occur like “venture capital market”, “decision-making”, “networks”, “model”, “entrepreneurial finance”, and “behavior”. Terms with the strongest interrelatedness (the total link strength) with the leading term “business angels” in cluster 1 we define in Table 1.

*Table 1: Select cluster 1 key terms*

Key term	Number of occurrences	Total link strength	Our definition
Business angels	75	241	Wealthy individuals with previous investment experience in a start-up community.
Performance	28	92	Alliance between business angel and entrepreneur as the value of joint efforts (synergies)
Decision-making	18	55	An individual cognitive process of weighing alternatives to make a certain action.
Venture capital market	14	65	Arena of matching specific private equity investments with ventures seeking funding, whereas investment deals usually incorporate a variety of financial instruments dealing with an equity stake in exchange for money.

*Source: Own work upon Web of Science data (Clarivate, 2019).*

#### 2.3.2.2 Cluster 2: Business angels as individual investors

The second cluster sets the stage for “business angels” being part of the entrepreneurial society. Hence, the term “venture capital” occurs again, but in a different setting, largely

related to “entrepreneurship”. “Entrepreneurship” is a term that occurs 41 times in the whole network, and aside from “business angels,” it represents the key term with the highest total link strength. Entrepreneurship is a crucial process that fosters economic growth, well-being, and wealth. It involves initiating new businesses and transforming innovations into economic goods. Entrepreneurs often start new organizations or revitalize mature ones in response to perceived opportunities. This cultural and psychological process involves capturing and using opportunities, taking risks, and developing creative power to realize new value (Amatucci et al., 2006; Landström, 2004; Lex & Gielnik, 2019; Mason & Butler, 2006; Ratten, 2023).

Key terms in cluster 2 with the highest link strength form the basis of knowledge in the cluster, which we present with our definitions in Table 2.

*Table 2: Select cluster 2 key terms*

<b>Key term</b>	<b>Number of occurrences</b>	<b>Total link strength</b>	<b>Our definition</b>
Entrepreneurship	41	128	A field of study where ventures as legal entities initiate economic expansion.
Venture capital	38	112	Long-term risk capital available for new and promising entrepreneurial ventures in the economic environment.
Firms	29	101	Legal entities within a venture surrounding that maximize owners’ wealth and operate in the market.
Growth	23	73	An increase in the entrepreneurial venture size and impact over time in relation to the general economic conditions.

*Source: Own work upon Web of Science data (Clarivate, 2019).*

The second strongest key term that occurs in this cluster is “venture capital”. Its overall link strength to “entrepreneurship” is 11, and the link strength towards the central term in the network “business angels” is 19. This shows the importance of the term, which appears especially around the year 2011 in the business angel literature. Venture capital is long-term risk capital provided by professionals to new, growing, innovative, and promising companies in entrepreneurial surroundings. It primarily focuses on providing early-stage investment capital for innovative technology companies. The most suitable financial instrument for this is ordinary shares or common stock, which can help the company’s cash flow and provide a substantially better return than geared equity (Busenitz et al., 2017; Mason & Harrison, 1999; Shepherd, 1999; Wallmeroth et al., 2018).

As we previously show in Figure 2, in our co-occurrence analysis map, this cluster is highly dependent on the leading term “business angels” on the whole map. Its superior terms encompass a variety of terms mainly related to the financial structure of the economic environment like “private equity”, “markets”, “firms”, “finance” and “crowdfunding”. We

must emphasize that the majority of terms in this cluster started their evolution in the mid-2010s, with new terms like “crowdfunding” evolving in approximately year 2016.

### *2.3.2.3 Cluster 3: Business angels vs. venture capitalists*

In the third cluster of our observed key terms network, the emphasis is on “venture capitalists” as the central term, which is strongly related to the “business angels” term with a link strength of 15. The overarching idea of the cluster is that venture capitalists are non-existent without the business angels’ market. The cluster terms started their evolution in the early 2010s with the majority of occurrences of the key terms like “investments”, “investment” and “industry”.

Venture capitalists are usually full-time professionals who invest in partnership funds, closely following technology and market developments. They scrutinize founders and business concepts before investing and provide capital, advice, contacts, and experience. They use financial and organizational technologies like screening capabilities, due diligence processes, staged financing, investment syndicates, compensation contracts, and corporate governance practices to help bring innovative ideas to market (Casamatta, 2003; Chahine et al., 2007; Hindle & Lee, 2010; Macmillan et al., 1985; Sapienza et al., 1996).

From the literature observed on the key term “venture capitalists”, it is easy to see that the term in the literature was interchangeably used with “business angels”. In practice, it is difficult to distinguish venture capitalists from business angels because both play a role as investors in early-stage companies by providing capital and expertise, but their differences lie in the scope, structure and degree of involvement in the investment process. With regard to the key term development, the term “venture capitalists” appears in this network around the year 2016. On the contrary, the term “business angels” appears around the year 2014. It does not mean that the term “business angels” developed before the term “venture capitalists”. Rather, the terms are brought closely together in the later years. We explain it as the increasing conflation of business angels and venture capitalists fueled by the growing tendency to use the terms interchangeably, as both types of investors participate in financing entrepreneurial ventures, leading to a blurred distinction in public perception. We must add that the confusion between business angels and venture capitalists is partly due to the media’s portrayal and generalization of entrepreneurial venture investors, where the terms are often used interchangeably without highlighting their nuanced differences. Of course, the more we know about business angels through the years, the less overlap in the literature we have.

Other terms in this cluster are highly related to the central term “business angels”, and in Table 3, we provide information on their number of occurrences, total link strength, and our definitions.

Table 3: Select cluster 3 key terms

Key term	Number of occurrences	Total link strength	Our definition
Venture capitalists	29	105	Individual investors in “revenue generating” stage ventures.
Entrepreneurs	21	87	Individuals or groups of founders who start a venture upon an identified opportunity.
Investors	20	81	Individuals willing to provide their financial sources in the venture environment
Investment	21	61	An asset given as an incentive to increase a venture's growth in the subsequent time.

Source: Own work upon Web of Science data (Clarivate, 2019).

## 2.4 Bibliometric co-citation analysis and clustering<sup>1</sup>

In this study, we use a bibliometric co-citation analysis to produce a quantitative review of the business angel decision-making research. Bibliometrics refers to the mapping of the scientific field through literature analysis and brings to light conceptual patterns, research trends, and scientific relationships (Holman et al., 2017) as we investigate the relationships in cited references (Griffith et al., 1974; Small & Griffith, 1974).

A co-citation analysis uses co-occurrence data and explains that two references are co-cited if there is a third reference that cites both previous references (Boyack & Klavans, 2010; Černe et al., 2016; Marshakova, 1981; Small, 1980). This exemplifies the link between the two references, meaning that they are more closely related to each other if they are in the reference list of the same article. There are two reasons for their close relationship: The two references might be from the same area of interest, or the topic areas of both articles relate closely (Cawkell, 1976; Garfield et al., 1983; Schildt et al., 2006; Small, 1973; Small & Griffith, 1974). The series of contributions, or basically the intellectual exchange within the field, present an “intellectual history of the field” and the links between scholarly work provide the “means of documenting this history” (Culnan, 1986).

To illustrate the importance of this analysis, we highlight that the typical behavior of researchers in the academy is to “cluster into informal networks” (Culnan, 1986), often denoted as “invisible colleges” (de Solla Price, 1963; Gmur, 2003; Hagstrom & Crane, 1973) where they share concepts to build the knowledge of the field. With this in mind, we explore the field of business angel investment decision-making, with a particular focus on the development of dominating clusters of knowledge (i.e., colleges) in this field. In this study, we use co-citational relations among documents (e.g., articles/references) to provide

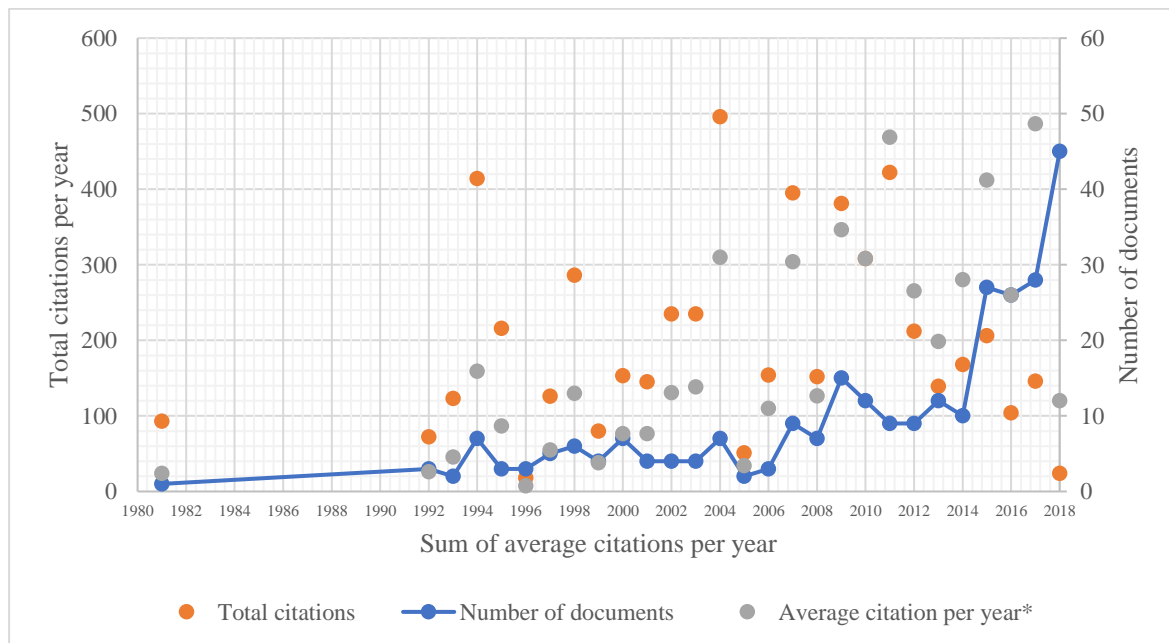
<sup>1</sup> Subchapter is largely based upon: Vasić, D., & Slavec Gomezel, A. (2022). What Do We Know about Business Angels' Decision Making Research Development? A Document Co-Citation Analysis. *Economic and Business Review*, 24(1), 19-35. <https://doi.org/10.15458/2335-4216.1295>

evidence on scientific cooperation and the generation of research clusters in the business angel decision-making field. Important to note is that this study is the first bibliometric document co-citation analysis in the business angel decision-making field of research.

#### 2.4.1 Data and procedures

To generate the co-citation analysis, we follow the same steps as in the co-occurrence analysis (see subchapter 2.3 Co-occurrence analysis and clustering). Only this time, we restrict our search to a timeframe from January 1981 to March 2019. The initial query results in 280 publications with the sum of 5,554 citations at the end of March 2019 (without the self-citations, the result is 4,911 citations). In total, we receive a 4,151 citing articles base (4,003 without self-citations). The total *h*-index of all articles is 44, with an average citation per item of 20.12. Initially, we see that the field development is exponential since the 1990s, where 12% of total documents are published with 24% of total citations. In 2000s, an additional 22% of documents emerge with 43% of total citations, followed by 2010s with 65% of total published articles carrying 31% of total citations as we show in Figure 3<sup>2</sup>.

*Figure 3: Evolution of the business angel decision-making research*



*Source: Own work upon Web of Science data (Clarivate, 2019).*

After the initial overview of field development in numerical terms, we perform an in-depth bibliometric analysis. We export data from the Web of Science database for further treatment on a local level, and as in the co-occurrence analysis previously, we use VOSviewer as our

<sup>2</sup> Figure shows end-of-year data. We calculate the Average citation per year as a field Sum of single article average citations in a given year. The year 2019 data we do not include in this figure as the analysis was done in March 2019. Thus, we do not have end-of-year 2019 statistics.

primary tool, both for analysis and visualization of the bibliometric network (van Eck & Waltman, 2014). In VOSviewer, we import the data obtained in the Web of Science search and perform co-citation analysis with cited references (documents) as a unit of analysis.

Next, we select all the documents cited five times or more from the bibliometric database. We select this threshold primarily for convenience in computational processing regardless of the average citation value, as we previously show in Figure 3. Of the 11,147 cited references in the bibliometric network, 371 meet the threshold. For each of the 371 cited references, we calculate the total link strength of the co-citation links with other cited references. Some of the 371 items in our network are not connected to each other. The most extensive set of connected items consists of 359 references with the highest total link strength, and we send this set of documents for further internal analysis and network visualization. We present descriptive statistics of the part of the dataset in Table 4.

*Table 4: Top 20 references with the highest citation frequencies, the highest number of links, and link strengths in the business angel decision-making field*

<b>Total number of citations</b>	<b>Total number of links</b>	<b>Total link strength</b>	<b>Reference (first author, year, and publication)</b>
35	287	1114	Mason C, 2004, Int Small Bus J, V22, P227
33	280	1087	Maxwell A, 2011, J Bus Venturing, V26, P212
33	293	1106	Wetzel W, 1983, Sloan Manage Rev, V24, P23
30	298	1162	Van Osnabrugge M, 2000, Venture Capital, V2
28	286	999	Mason C, 2002, J Bus Venturing, V17, P211
26	240	928	Feeney L, 1999, Ventur Cap, V1, P121
26	287	1018	Mason C, 1996, Entrep Region Dev, V8, P105
23	230	693	Mason C, 2002, Entrep Region Dev, V14, P271
23	287	928	Politis D, 2008, Ventur Cap, V10, P127
22	277	800	Fiet J, 1995, J Manage Stud, V32, P551
22	274	886	Haar N, 1988, J Bus Venturing, V3, P11
22	265	962	Paul S, 2007, Ventur Cap, V9, P107
22	285	737	Prowse S, 1998, J Bank Financ, V22, P785
21	228	749	Mason C, 1996, Int Small Bus J, V14, P35
21	230	777	Mason C, 2000, Small Bus Econ, V15, P137
21	261	647	Robinson R J, 2000, Angel Investing Matc
21	255	578	Tyebjee T, 1984, Manage Sci, V30, P1051
20	272	655	Freear J, 1994, J Bus Venturing, V9, P109
20	284	845	Wetzel W, 1987, J Bus Venturing, V2, P299
20	263	726	Wiltbank R, 2009, J Bus Venturing, V24, P116

*Source: Own work upon Web of Science data (Clarivate, 2019).*

In the following step, we visualize a bibliometric network to develop nodes and edges that describe dyads between pairs of nodes. Nodes in our study represent publications (i.e., references). According to Van Eck & Waltman (2010), uncovered edges indicate *if* there is a relation between publications and *what* the strength of their relationship is. The distance between two nodes in the visualization of the bibliometric network in VOSviewer gives us an approximation of node relatedness (Naukkarinen & Bragge, 2016). We use a graph-based approach to visualize the bibliometric network of the domain, which gives us an appropriate two-dimensional space for our bibliometric network (van Eck & Waltman, 2014).

The last step in this procedure is an analysis of the results with an interpretation and discussion. We use interval sectioning proposed by Černe and colleagues (2016) and a clustering method proposed by Schildt and colleagues (2006) and Meyer and colleagues (2011). Interval sectioning in bibliometrics refers to the method of dividing a certain time period into smaller intervals or sections in order to analyze and evaluate scientific publications or citations (Habib & Afzal, 2019). In our case, the intervals are sectioned by decades. We label the clusters based on the keywords or titles of the most important documents in the clusters.

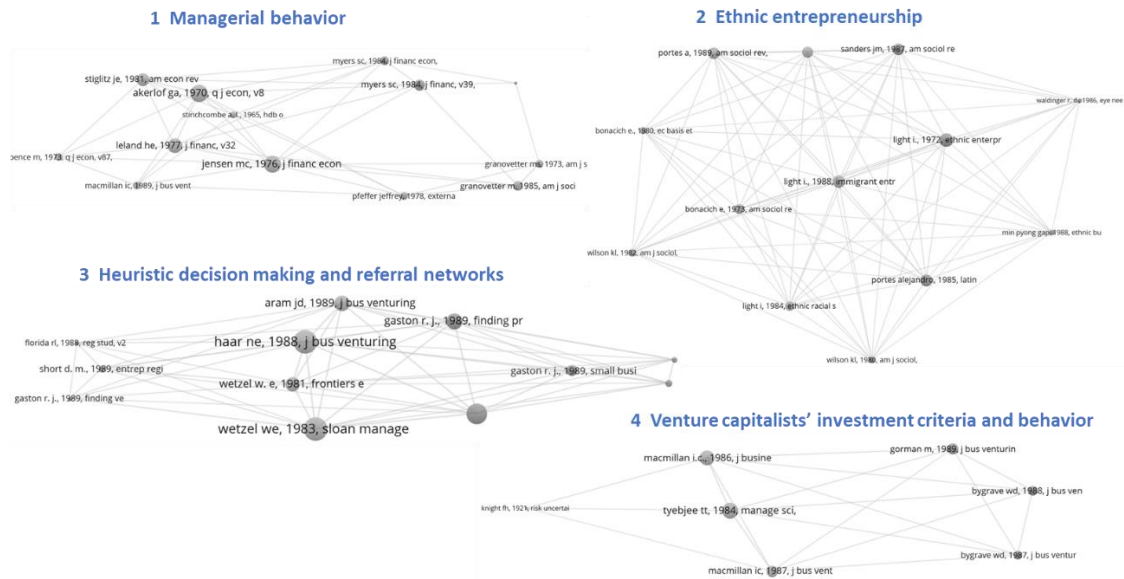
#### 2.4.2 Co-citation analysis results

Our analysis reveals four significant intervals of research in the business angel decision-making research. Even if our analysis shows that the majority of contributions are sectioned through four intervals, they still maintain an explanation of related work between researchers throughout the lifetime of the observed knowledge domain. Concerning the uniqueness of every article that forms this knowledge base, we must refer to the “growing recognition of scholars to borrow from others” (Schildt et al., 2006). Thus, some publications are not exclusively part of the entrepreneurship research, especially in the early stages of business angel field development. Bibliometric network visualization in VOSviewer assigns nodes in the network and reveals nineteen clusters of knowledge within intervals. These clusters reflect closely related nodes within the intervals.

##### 2.4.2.1 *First interval: early development to the end of the 1980s*

An analysis of the first co-citation network reveals the very beginnings of business angel decision-making research. The total number of documents associated with this interval is 50, 45 of which we directly observe for the analysis as some items are not interconnected. Among the 50 documents, the most extensive set of connected documents is 45, which we show separately as four clusters in Figure 4.

Figure 4: Clusters of knowledge in the 1980s co-citation network



Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).

The first two clusters of knowledge in the 1980s point out some historical discussion on “ethnic entrepreneurship” and “managerial behavior”. The majority of influential papers in those two clusters were published even before the 1980s, but they mainly guided the 1980s conceptualization of business angel decision-making as they were highly co-cited in future discussions. A theoretical framework of studies was grounded in the agency theory and the theory of the firm (Jensen & Meckling, 1976). The role of corporate social responsibility and managerial behavior in ethnic investments was investigated on a pure firm level until then, and this set a new direction of thinking in the business angel environment.

The first real article in the business angel decision-making field explored the backgrounds, investment interests, and behavioral patterns of business angels, where Wetzel (1981) started the regional study on closing the equity gap in informal investments. This article shapes the very beginnings of business angel decision-making dialogue and is densely clustered around several of the most crucial research papers in the 1980s. Later, in 1983, Wetzel presented the first attempt to explore the socially oriented characteristics of business angels. A couple of years later, Wetzel (1987) argued that expectations of risk and reward commonly motivate business angels, but those do not have to relate to financial incentives. This is the primary difference that distinguishes business angels from venture capitalists. The nonfinancial incentives in business angel decision-making are grounded in social responsibility as the leading motivator for investment (i.e., job creation, developing socially valuable technology, encouraging minority and female entrepreneurship).

When business angels consider the incentive of nonfinancial rewards, they do not rely on a compensatory decision model but commonly use shortcut decision-making heuristics

referred to as “elimination-by-aspects.” Still, the shortcut decision-making relies on their accumulated knowledge from past investments and trust in referral networks (i.e., friends and business associates).

As an addition to this study, another leading document in the cluster is by Haar and colleagues (1988), who argued that trust and supportiveness influence referral networks and business angels rely less on professional referees who can increase the probability of investment success. Heuristics framed decision-making; behavioral aspects lead investment patterns. Aram (1989) implied that business angels are usually entrepreneurs themselves. He builds upon the evolution of tech-oriented business angel referral networks (Aram, 1989). The more tech investments evolve, the more professional referee services are used by business angels. All articles in this cluster focused on business angels’ referral networks and used them as a part of their investment patterns. Also, they have more of a behavioral outlook for their decision-making. For these reasons, we labeled this cluster “*heuristic decision-making and referral networks*”.

Another cluster in the 1980s built upon the business angel decision-making studies and related strongly to the first cluster. We label it the “*venture capitalists’ investment criteria and behavior*”. This cluster is not that dense, and its contribution is not related to the business angel decision-making field since arguments come from the venture capital lenses. MacMillan and colleagues (1985) conclude that the key criteria for venture investment are entrepreneurs’ experience and personality. Tyebjee and Bruno (1984) focus on venture capitalists’ decision-making stages and make a significant advance in the understanding of venture capitalists’ decision-making.

Even if we identify four different clusters of knowledge in this interval, Wetzel (1983) and Haar and colleagues (1988) represented the center of all clusters. They also bridge authors at the early beginnings of field development. Different theoretical perspectives within the four observed clusters with a high level of total link strength accounted for well-connected research paths in the observed interval. Still, we see that the first two clusters represented only the conceptual basis for the business angel decision-making development and are not that influential for the whole 1980s network. Additionally, we see that articles with the highest link strength dealt mainly with the heuristic decision-making and referral networks in the business angel framework, which provided a basis for the next interval knowledge exchange.

#### 2.4.2.2 *Second interval: the 1990s*

The co-citation network of the second research interval revealed five distinct knowledge clusters and showed the heterogeneity of theoretical backgrounds. The central articles in the network by Feeney and colleagues (1999) and Mason and Harrison (1992, 1996a, 1996b) are also the bridging articles in three clusters within the interval.

The dominance of works by Freear and colleagues (1994), Sapienza and colleagues (1996), and Prowse (1998) in the first cluster of the 1990s represents the new stream of thinking about the differences between business angels and non-angel investors or entrepreneurs. Those studies represent the most cited papers and the ones with the highest total link strength in this cluster, which we label “*Business angels vs. non-angel investors*”. Contrary to the study by Aram (1989) in the previous interval, Freear and colleagues (1994) argue that business angels prefer the geographic proximity of their investments, and these criteria strongly influenced their investment decisions. In this cluster, we also see the first formal studies on the differences between business angel decision-making and other members of the investment process.

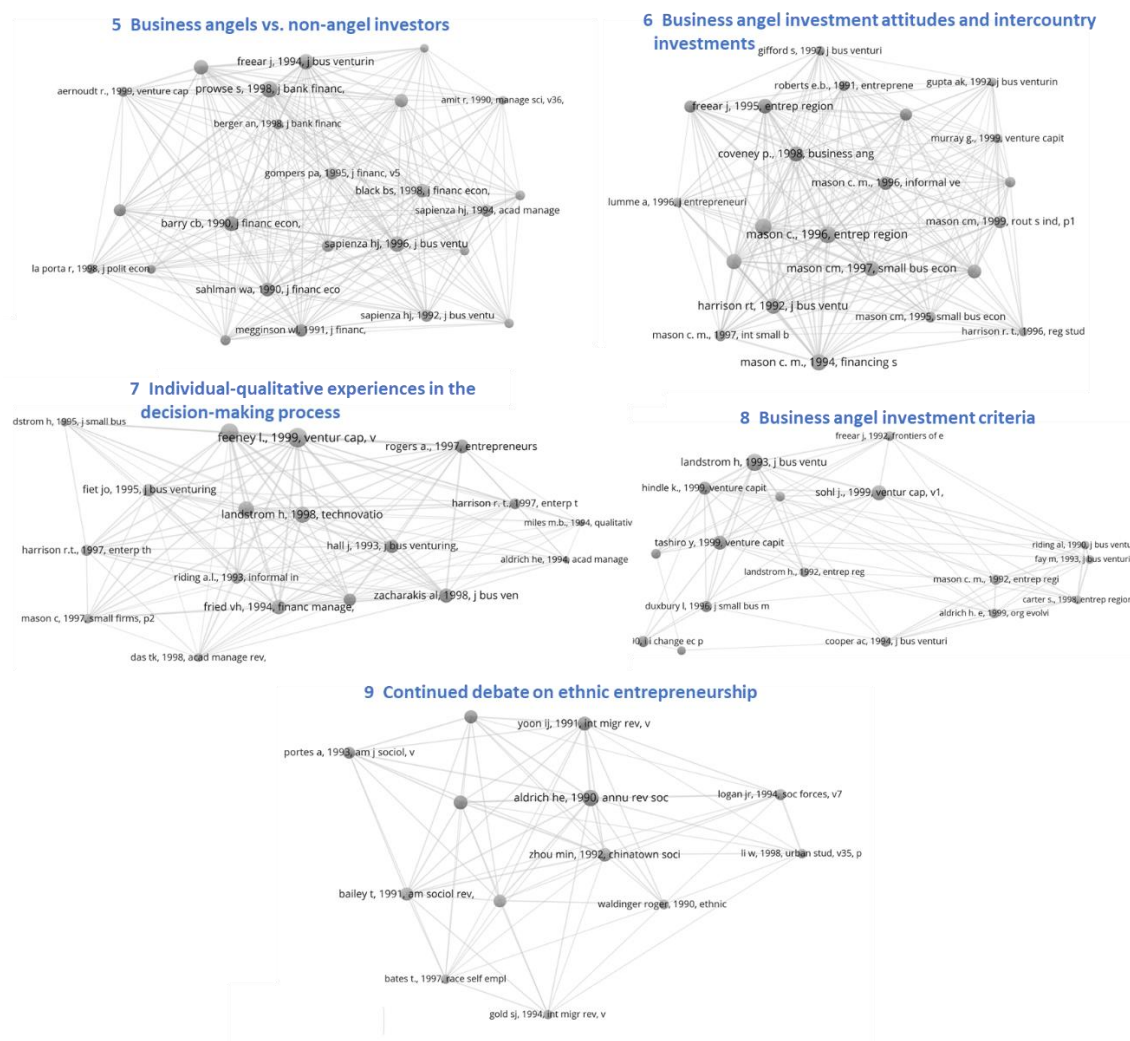
The second cluster in the 1990s frames around the “*Business angel investment attitudes and intercountry investments*”, where Mason and Harrison's (1996) study is the most influential one. They focus on the differences between the investors' and entrepreneurs' views on the expected venture performance and the situations when the relationships rupture because of different expectations. Freear and Wetzel (1990) point out the complementarity aspect of the investment relationship and that in the seed or start-up stages of venture financing, individual investors tend to behave more risk-averse, having a more conservative attitude in investing. When we observe investment attitudes, Freear and colleagues (1995) discover that business angels and non-angel investors share the same views of the investment process but differ in the degree of potential investment.

Studies in this cluster tend to draw on the differences in taking a hands-on role and making important business decisions in business angel and non-angel surroundings (individual investors or formal venture capital market). Non-angel investors use professional referee services rather than business angels due to a lack of expertise in this funding process (Freear et al., 1995). One of the principal articles in the cluster is the *Journal of Business Venturing* paper by Harrison and Mason (1992), which confirmed Wetzel's (1987) findings in a different geographical context. The invisibility of investors, fragmented market, imperfect communication in the investment process, and low effectiveness are the keynotes to take from the United Kingdom case in Harrison and Mason's (1992) study. Arguments on the geographic differences in business angel investments, with an emphasis on the European economies, formed the central scholarly contribution deficiency in the research domain. Clusters in 1900s co-citation network we show in Figure 5.

In the following interval cluster, we observe a strong influence of deal-specific theoretical perspectives. The works of Feeney and colleagues (1999) and Mason and Harrison (1996a) are by far the most cited documents and dominating points in the second cluster. Research in this cluster goes beyond the current studies on business angel decision-making and advocates the quality of venture managers or owners, as well as the entrepreneurial perspectives, as the main obstacle in the decision-making process. In light of this but going more into specifics of the deal-making structures, Landström's (1998) article advocates the involvement requirement as one of the main decision-making criteria. Risk avoidance

strategies are a crucial part of the business angels' decision-making. Fiet's (1995) paper is the first indication that business angels tend to focus more on agency risk in decision-making than on the current market risk. Additionally, Harrison and colleagues' (1997) study reflects on the behavioral part of risk avoidance, where the decision-making emerges around the concept of trust. Thus, we label this cluster *“Individual qualitative experiences in the decision-making process”*.

Figure 5: Clusters of knowledge in the 1990s co-citation network



Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).

The last two clusters of knowledge in the 1990s are smaller in size and are more heterogeneous. We label cluster number three the *“Business angel investment criteria international evidence”* as research mainly framed in the level of commitment, motivation, control, and business diversification. These determinants represent the principal differences between business angels and non-angel investors from different countries. In this cluster, Landström (1993) acknowledges that Swedish business angels treat investments as

entrepreneurial ventures of their own. The final cluster contains a debate on ethnic entrepreneurship from the 1980s, with the most influential paper from Aldrich and Waldinger (1990). We label this cluster the “*Continued debate on ethnic entrepreneurship*”.

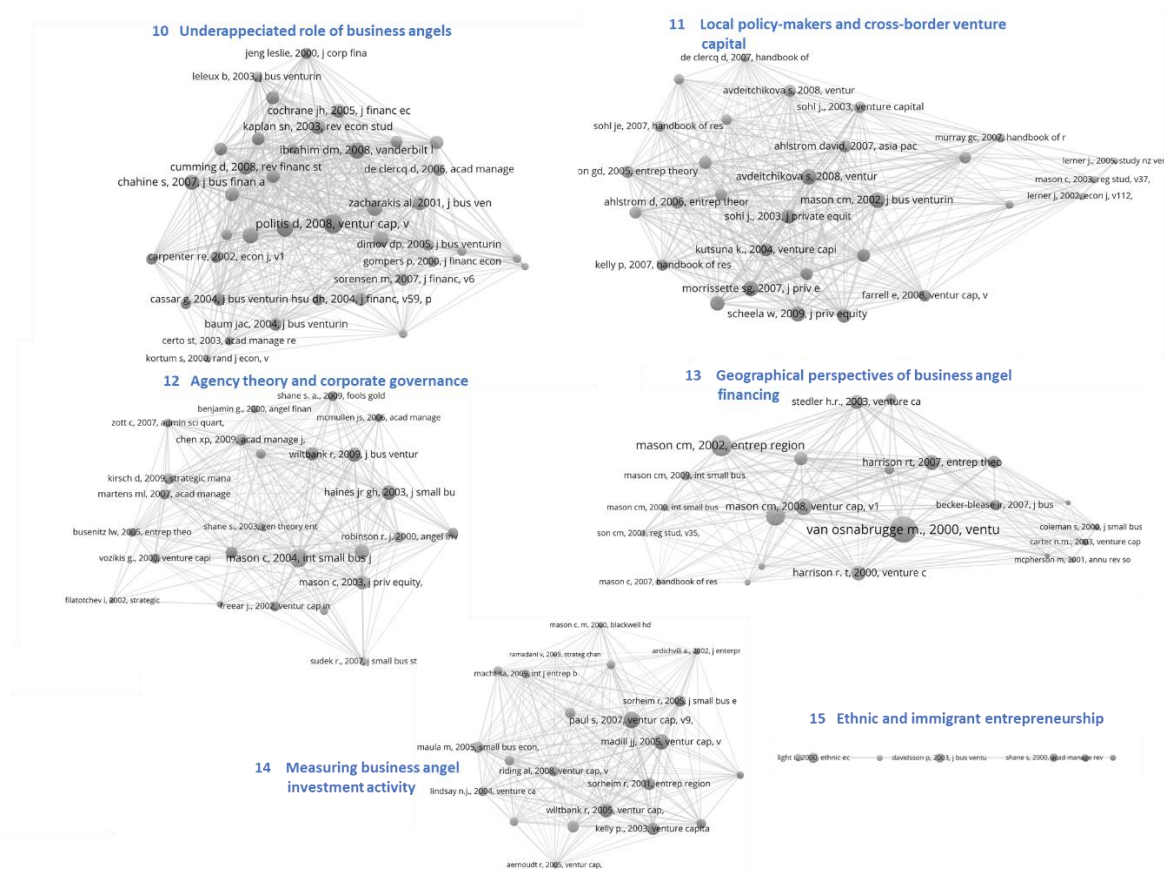
#### 2.4.2.3 Third interval: the 2000s

The evolution of methodological and conceptual approaches in the business angel decision-making domain is evident in the 2000s. The era of technological evolution strongly influences the literature in the field. The 2000s bring a denser collaboration in the field, and the density of the co-citation network reflects the rich and clustered intellectual collaboration in the field. The main outlets for publishing in the 2000s are *Venture Capital*, *Journal of Business Venturing*, and *Entrepreneurship Theory and Practice*, with the vast majority of influential articles published. In the 2000s, we witness the proliferation of six different clusters of knowledge, as we show in Figure 6.

Mason and Stark (2004) in *International Small Business Journal* as well as Harrison and Mason (2000, 2008), Madill and colleagues (2005), Politis (2008), and Van Osnabrugge and Robinson (2000) in *Venture Capital* represent the most notable studies in the field. In the observed interval, most studies in the network are published in more specialized research publications used as “toolboxes” for dealing with business angel investments. Accumulated knowledge results in multiple reviews, namely from Van Osnabrugge and Robinson (2000a), as well as Kelly (2007) and Sohl (2007), works published in the *Handbook of research on venture capital*. Our analysis reveals that Mason and Stark (2004) with Van Osnabrugge (2000), Mason and Harrison (2002) as well as Paul and colleagues (2007) with Van Osnabrugge (2000) are most often cited together and are centrally positioned in the co-citation network of the first cluster of the 2000s.

The most densely co-cited group of works represented the first cluster of knowledge with a total sum of co-citation link strength of 1,942. We label the first cluster the “*Underappreciated role of business angels*”. The central work in the first cluster reflects the profound literature review in the field by Politis (2008), where business angels are represented as essential stakeholders in venture surroundings while holding a complementary role in financing operations. Leading studies in the cluster offer the insight that business angels’ role goes even beyond the regular financing alternatives, both from financial (Cumming, 2008; Hellmann & Puri, 2002; Kaplan & Omberg, 2004) and legal perspective (Chahine et al., 2007; Ibrahim, 2008). The most novel trails in business angel decision-making research grounds are in the *Journal of Business Venturing* article where Elitzur and Gaviols (2003) examine the relationship between venture investment stakeholders through the signaling aspects of the investment while conceptualizing the free-rider phenomenon in the business angel society.

Figure 6: Clusters of knowledge in the 2000s co-citation network



Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).

Additionally, one of the most co-cited articles in the cluster grounded the research by analyzing biases that appear in the business angel and venture team relationship, where Franke and colleagues (2006) agreed that investors favor venture teams who are similar to themselves. Discussion in this cluster also involved the business angel's character: overconfidence (Zacharakis & Shepherd, 2001), moral hazard and irrationality (Bruton et al., 2009), and reputation (D. H. Hsu, 2004). This cluster literature is built mainly upon venture capital knowledge, and the majority of highly co-cited works underline the similarities between venture capital and business angel financing. Thus, even if business angels are in a financial form different from venture capitalists, their role is largely underestimated, and studies still re-frame the research based on the venture capitalists' experiences.

The second cluster in the 2000s starts a debate on “*Local policymakers and cross-border venture capital*”. One of the documents with the highest co-citation link strength comes from the *Journal of Business Venturing*, which remains one of the dominant outlets for publishing (Mason & Harrison, 2002), along with *Venture Capital* (Avdeitchikova et al., 2008; Sohl, 2003) and *The Journal of Private Equity* (Morrissette, 2007; Scheela & Isidro, 2009; Sohl

& Rosenberg, 2003). The main lessons we gain from this cluster outline the question of how networks and institutions (both formal and informal) support business angels' activities and venture capitalists in general.

A dominating article in the third 2000s interval cluster by Mason and Stark (2004) is one with the highest link strength and the highest number of citations in the whole interval network. It goes back to the differences between the supply and demand part of the business angel investment equation. The verbal protocol analysis in this study advances the methodological considerations in the field. The results of their study are the first to indicate that there are fewer differences in venture capitalists' and business angels' decision-making criteria, but formal investors like banks retained the standardized procedures in business plan evaluation. Again, a business plan is the first to eliminate criteria for venture financing, as proposed by Mason and Stark (2004). In addition to this study, one of the essential works comes from Van Osnabrugge (2000), where the author applies the agency theory in the venture capital environment to study business angel behavior. Further studies in the cluster mainly focus on corporate governance with a more financial perspective. Thus, we label the third cluster "*Agency theory and corporate governance*".

We label the fourth cluster of knowledge in the 2000s as the "*Geographical perspectives of business angel financing*". Contributions with the highest co-citation link strength estimate the size of informal venture capital in the United Kingdom (Harrison & Mason, 2007; Mason & Harrison, 2000, 2008; Van Osnabrugge & Robinson, 2000), and more specifically in Scotland (Paul et al., 2003). Moving forward, we also see substantial evidence of business angels' behavior in Germany, where social and cultural differences with previous cross-country samples are outlined.

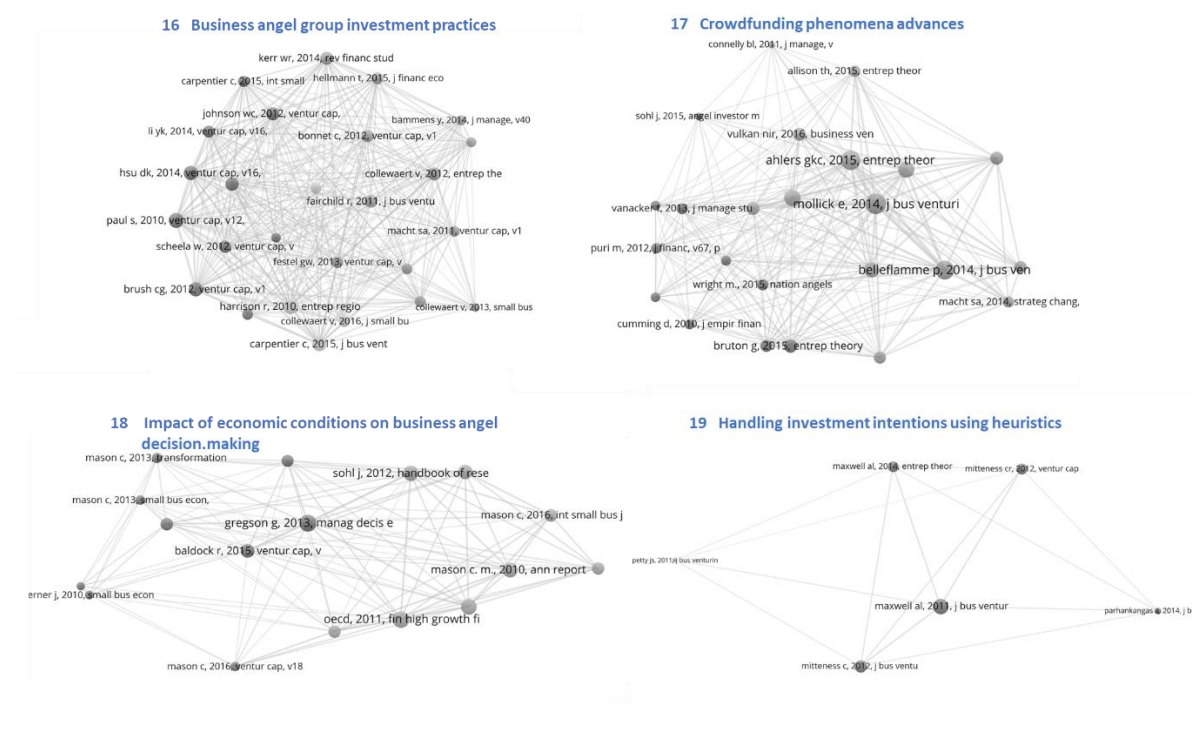
We label the fifth cluster in this interval the "*Measuring business angel investment activity*". The central studies by Mason and Harrison (2000), Paul and colleagues (2007), and Madill and colleagues (2005) review the importance of providing a reliable measure of the size and activity of the business angel market. Additionally, the sixth cluster is significantly smaller in size and weight than the rest of the clusters and offers a rather flat co-citation network. We name it "*Ethnic and immigrant entrepreneurship*", as discussions within it continue with ethnic entrepreneurship topics. However, in the 2000s, due to the rising immigrant issues all over the world, the concept of immigrant entrepreneurship is also introduced (Logan et al., 2002).

As we can see, the third interval of scholarly contributions in the 2000s is the most important one in terms of the co-citation link strength. The majority of empirical studies in the interval are frequently co-cited together. Also, the first literature reviews appear, and conceptually, business angel research moves to more interdisciplinary research (conceptual influence from finance, legal studies, and sociology).

#### 2.4.2.4 Fourth interval: the 2010s

As a central piece in the fourth observed interval in our co-citation network, Mollick's (2014) article dominates with a total of 18 citations and a total link strength of 102. This interval is the smallest observed interval with regard to total interval duration but represents the most meaningful current findings in the business angel decision-making domain. We section this interval into four clusters and show it in Figure 7.

*Figure 7: Clusters of knowledge in the 2010s co-citation network*



*Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).*

We label the first cluster in the fourth interval the “BA group investment practices”. Syndicated deals are just one form of business angel group investment practices. The article by Paul and Whittam (2010) was a central work in the first cluster and pointed out the role of business angels as gatekeepers in investment syndicates. Syndicated investments were mostly dependent on regional proximity, and business angel group investment practices differed from individual business angel decision-making processes (Carpentier & Suret, 2015). The first cluster is the densest co-cited cluster in the fourth interval and proposes the importance of new investment forms – syndicated deals in the business angel investment practices.

The second cluster in the fourth observed interval is significantly smaller in size but frames around the most cited article and the article with the highest co-citation link strength in the whole 2010s interval. Ahlers and colleagues (2015), Belleflamme and colleagues (2014),

and Mollick (2014) represent the central works with the highest total co-citation link strength. Their studies provoke the frontiers of research in business angel decision-making. In the late 2010s, the crowdfunding phenomenon in entrepreneurial financing emerged. Successful crowdfunding appears to be a positive signal for business angel investments, as reported by the central studies in this emerging cluster (Ahlers et al., 2015; Belleflamme et al., 2014; Mollick, 2014). However, the fusion of crowdfunding and business angel financing back in that cluster was in the early phase of research. Thus, we label this cluster the *“Crowdfunding phenomena advances”*

The last two clusters of knowledge in the 2010s represent smaller and heterogeneous research advances. More focused research on business angel decision-making provides a study in the third 2010s cluster by Harrison and colleagues (2015). They outline the importance of learning from investment practices in the business angel environment and additionally show how business angels approach the exit strategy in investments in diverse economic conditions (Baldock & Mason, 2015; Mason & Botelho, 2016). Thus, we label this cluster the *“Impact of economic conditions on business angel decision-making”*.

We label the fourth cluster in the 2010s the *“Handling investment intentions using heuristics”*. Maxwell and colleagues' (2011) article is a pivotal study in the cluster. Psychology theories explain the intentional activities in business angel decision-making in this cluster. Built upon findings from the early studies in the field (Haar et al., 1988), we receive new insight into heuristic-led decision-making. Maxwell and colleagues (2011) describe it as the “elimination-by-aspects” decision-making, where the emphasis is laid on the role of passion in the favorable decision-making (Mitteness et al., 2012) that intentionally leads to building trust in a business relationship (Maxwell & Levesque, 2014). It is important to note that most studies in this cluster come from the *Journal of Business Venturing* and *Entrepreneurship Theory and Practice*. It seems these journals represent the foundations of current theoretical contributions to the field of knowledge in business angel studies.

## **2.5 Bibliographic coupling analysis and clustering**

In this analysis, we focus on bibliographic coupling analysis as one aspect of bibliometrics and restrict our observed timeframe from January 1981 to March 2019. Thus, we guide our research with scientific importance criteria through the proximity of coupling links between documents in the bibliometric network, where we focus on the specificities of these dyads. Bibliographic coupling analysis, in its visualizations, develops nodes and edges that describe dyads between pairs of nodes in the core document collection. According to Van Eck & Waltman (2010), those edges indicate if there is a dyad between publications and what the strength of their relations is in the two-dimensional space. For the analysis, we observe only the nodes in the bibliometric network and not the edges between nodes. The distance between two nodes in the visualization of the bibliometric network gives us an approximation of node-relatedness (Naukkarinen & Bragge, 2016).

### 2.5.1 Data and procedures

We perform the bibliometric analysis in two steps: (1) we outline the bibliographic coupling maps of the field, and (2) we review the clusters of research frontiers. Table 5 shows the components of this bibliometric study.

*Table 5: Components of bibliometric study*

Development date	January 2020
Timespan	2015-2019
Web of Science Core	Science Citation Index Expanded (1900-present)
Collection: Citation Indexes	Social Sciences Citation Index (1900-present)
	Arts & Humanities Citation Index (1975-present)
	Conference Proceedings Citation Index- Science (2011-present)
	Conference Proceedings Citation Index- Social Science & Humanities (2011-present)
	Book Citation Index– Science (2011-present)
	Book Citation Index– Social Sciences & Humanities (2011-present)
	Emerging Sources Citation Index (2015-present)

*Source: Own work based on Granados and colleagues (2011).*

To perform a bibliographic coupling analysis, we follow the same steps as in the co-occurrence analysis (see subchapter 2.3 Co-occurrence analysis and clustering) and co-citation analysis (see subchapter 2.4 Bibliometric co-citation analysis and clustering). We export data from the Web of Science database for further treatment on a local level. We use VOSviewer software (van Eck & Waltman, 2014), which is specialized for both the analysis and visualization of the bibliometric network. In VOSviewer, we import the data obtained in the second step of the science mapping procedure and choose the criteria for bibliographic coupling analysis. In our bibliographic coupling, we select “documents” as units of analysis. We decide to use the full counting method, meaning that the bibliographic coupling link has the same weight throughout the network of documents. In this step, we send data further for analysis. In the data analysis, we clean out insignificant contributions. We include only core documents that have at least  $n > 0$  links (Meyer et al., 2011). This provides us with the final data sample of 187 documents. For each of the 187 documents, we calculate the total strength of the bibliographic coupling links with other documents. Some of the 187 items in our network are not connected to each other, and the most extensive set for our analysis consists of 174 items. In VOSviewer, we group 174 references according to the most robust link. After the construction of the normalized network, we visualize it in a two-dimensional space through VOS mapping (Montiel-Campos et al., 2012; Van Eck et al., 2010).

In the fourth step of the science mapping procedure, we map the documents in proximity according to their coupling links. Also, we calculate the link strength for each of the references with the highest coupling link strength. Link strength is a measure of the proximity of the references to each other, so a higher link strength indicates the references

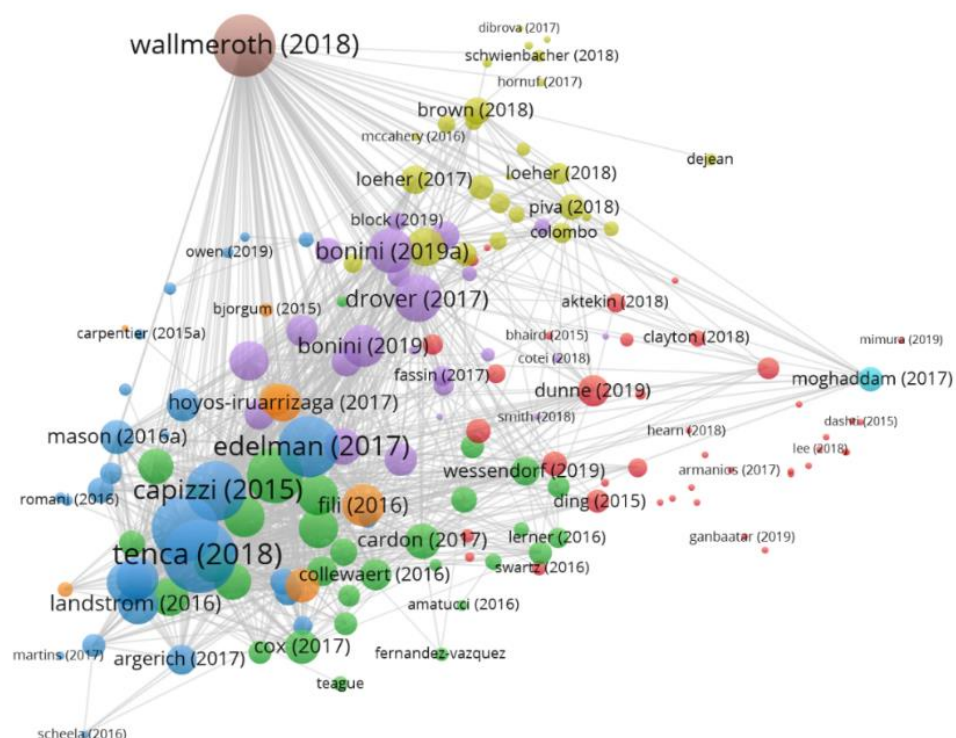
that are near each other. Again, we use a specialized tool, VOSviewer, to provide a distance-based visualization of given bibliometric networks. We use the degree of link strength between references to determine the research frontier in this field by unleashing the intellectual structure of recent literature (Borgman & Furner, 2005; Pritchard, 1969).

In the last step, we analyze the results and interpret and describe the findings. We perform a cluster analysis by following the core document approach described by Meyer and colleagues (2011) and label clusters based on the keywords included and the titles of core documents in the clusters. In the interpretation of the result, we use the clustering method proposed by Schildt and colleagues (2006).

### 2.5.2 Bibliographic coupling analysis results

Bibliometric network visualization in VOSviewer assigns nodes in the network and reveals seven clusters as groups of closely related nodes. Each node is designated to one cluster. Figure 8 shows an intensively cross-linked bibliographical network of business angel decision-making field where seven different colors indicate clusters.

*Figure 8: A bibliographic coupling network of the field*



*Source: Own work upon WOS data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).*

We see from Figure 8 that our bibliographic coupling network is dense, and new research outliers emerge. The body of knowledge in the field has been steadily growing from 2015

onwards, with an average annual growth rate in new publications of 53%. The more adequate measure of the field growth and its importance lies in the link strength as a measure of research connectivity. The total link strength in the observed sample is 47,524 and counts for an average strength per document of 254 link strength (n=174).

Among publication outlets with the highest link strength, we encounter *Venture Capital* with 22% of total link strength within the field, followed by *Handbook of Research on Business Angels* (10%), *Foundations and Trends in Entrepreneurship* (6%) and *International Small Business Journal – Researching Entrepreneurship* (6%). In general, the majority of contributions in the business angel decision-making field come from *Venture Capital* (22 documents) and the *Handbook of Research on Business Angels* (14 documents), as we see in Table 6.

*Table 6: Top fifteen journals by total link strength*

Source	Documents	Citations	Total link strength
Venture Capital	22	104	10,223
Handbook of Research on Business Angels	14	29	4,935
Foundations and Trends in Entrepreneurship	3	22	2,831
International Small Business Journal-Researching Entrepreneurship	5	51	2,615
Journal of Business Venturing	6	133	2,291
Small Business Economics	9	50	2,009
Journal of Economic Surveys	1	5	1,555
Entrepreneurship Theory and Practice	4	36	1,442
Journal of Small Business Management	4	30	1,317
Journal of Corporate Finance	3	13	1,214
Journal of Banking & Finance	3	8	1,190
Journal of Management	1	47	860
Asia Pacific Journal of Management	2	11	760
International Review of Entrepreneurship	2	8	750
Journal of Management & Governance	1	4	709

*Source: Own work upon Web of Science data (Clarivate, 2019).*

Provided outlets represent not only venues for publishing business angel decision-making research but also the most significant frontiers of field research. The more citations they have, or the highest total link strength is between the documents in the journal, the more essential scholars consider it. Namely, citing scientific articles is perceived as the use of “certified knowledge” (Fernandez-Alles & Ramos-Rodriguez, 2009), and the importance of the reference is reflected in the weight of citations (Zupic & Čater, 2015). Documents in our bibliographic coupling network with the highest link strength show the heterogeneity of

research. Table 7 shows the bibliometric network documents with the highest link strength. Major link strengths represent the peripheral works in the field where extensive literature reviews guide the current research trends.

*Table 7: Top five bibliometric network documents with the highest link strength*

<b>Total link strength</b>	<b>Document</b>
1,555	Tenca, F., Croce, A., & Ughetto, E. (2018). Business angels research in entrepreneurial finance: A literature review and a research agenda. <i>Journal of Economic Surveys</i> , 32(5), 1384-1413.
1,375	White, B. A., & Dumay, J. (2017). Business angels: a research review and new agenda. <i>Venture Capital</i> , 19(3), 183-216.
1,255	Wallmeroth, J., Wirtz, P., & Groh, A. P. (2018). Venture capital, angel financing, and crowdfunding of entrepreneurial ventures: A literature review. <i>Foundations and Trends® in Entrepreneurship</i> , 14(1), 1-129.
1,227	Edelman, L. F., Manolova, T. S., & Brush, C. G. (2017). Angel investing: A literature review. <i>Foundations and Trends in Entrepreneurship</i> , 13(4-5), 265-439.
1,168	Capizzi, V. (2015). The returns of business angel investments and their major determinants. <i>Venture Capital</i> , 17(4), 271-298.

*Source: Own work upon Web of Science data (Clarivate, 2019).*

#### 2.5.2.1 Cluster analysis results

The emerging strength of this research field lies in scholarly communication, and we must emphasize the “growing recognition of scholars to borrow from others” (Schildt et al., 2006). Through bibliographic coupling analysis, we determine seven clusters of current knowledge, and we can provide insights about the unexplored area in the business angel decision-making research. Clusters are presented separately, regardless of whether there is an evident relation with different cluster authors. Because of the space restrictions, we graphically and in full analysis represent only the two most abundant clusters. We summarize the other five clusters in Table 8.

*Table 8: Five of the seven clusters of research frontiers in the bibliographic coupling network of the business angel decision-making (2015 – 2019)*

<b>Cluster name</b>	<b>No. of doc.</b>	<b>Cumulative link strength</b>	<b>Highlights</b>	<b>Representative works</b>
C The nature of business angel decision-making	23	7,259	<ul style="list-style-type: none"> <li>▪ business angels make investments upon their <b>motivational cues</b> during pitches (enthusiasm, preparedness, and commitment).</li> <li>▪ business angel group and independent business angel decision-making differ.</li> </ul>	(Carpentier & Suret, 2015; Croce et al., 2017; Mason & Botelho, 2016)

To be continued.

*Table 8: Five of the seven clusters of research frontiers in the bibliographic coupling network of the business angel decision-making (2015 – 2019) (cont.)*

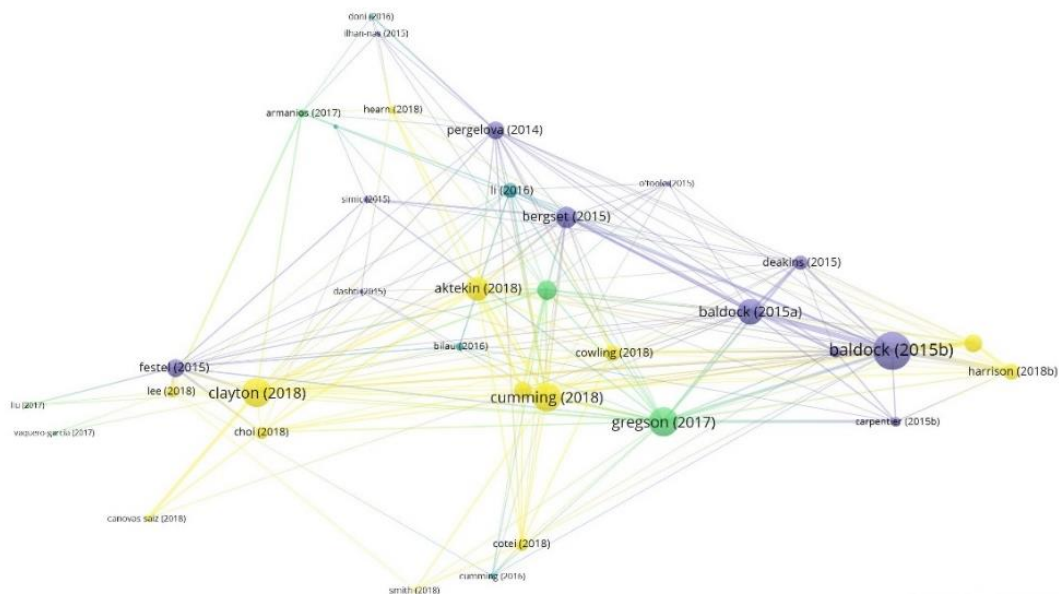
Cluster name	No. of doc.	Cumulative link strength	Highlights	Representative works
C The nature of business angel decision-making	23	7,259	<ul style="list-style-type: none"> <li>▪ Heuristics and the nature of learning from experience lead business angel decision-making.</li> <li>▪ business angels use a shortcut decision-making heuristic known as <b>elimination by aspects</b>.</li> </ul>	(Carpentier & Suret, 2015; Croce et al., 2017; Mason & Botelho, 2016)
D Crowdfunding as the first alternative to business angel financing	20	2,909	<ul style="list-style-type: none"> <li>▪ Entrepreneurs prefer to obtain finance quickly with relatively little diminution of their equity or <b>autonomy</b>.</li> <li>▪ <b>The human capital</b> of an entrepreneur, who launches an equity crowdfunding campaign to finance start-up, comprises a set of signals of the start-up quality.</li> <li>▪ Entrepreneurs' <b>business education and entrepreneurial experience</b> have a good fit with start-up quality and a <b>low degree of ambiguity</b> and positively contribute to success in equity crowdfunding.</li> <li>▪ Entrepreneurs with more <b>ex-ante financial commitment</b> in their venture achieve significantly higher funding success.</li> </ul>	(Drover et al., 2017; Piva & Rossi-Lamastra, 2018)
E Financing ethnic and immigrant entrepreneurship	12	511	<ul style="list-style-type: none"> <li>▪ Immigrant entrepreneurs (IE) rely on a single source of funding, usually bootstrapping or small bank loans.</li> <li>▪ IE <b>avoid business angel</b> equity funding.</li> <li>▪ Feelings of <b>shame</b> or <b>embarrassment</b> are often disclosed from research in venture funding.</li> </ul>	(Dheer, 2018; Moghaddam et al., 2017)
F Gender issues in business angel funding	8	1,166	<ul style="list-style-type: none"> <li>▪ Female entrepreneurs obtain <b>less capital and provide more equity</b> in business angel funding than male entrepreneurs.</li> <li>▪ Gender has a significant role in the funding deal (pre-investment stage).</li> <li>▪ Gender stereotypes bias business angel interpretations of the signals sent by entrepreneurs (even if biases are unconscious).</li> </ul>	(Becker-Blease & Sohl, 2015; Pocztar & Shapsis, 2018)
G Venture financing rationale	2	843	<ul style="list-style-type: none"> <li>▪ business angels provide more flexible decision-making in equity financing than venture capitalists.</li> <li>▪ Synergy effects derive from combining special knowledge, business contacts, and managerial experience.</li> </ul>	(Wallmeroth et al., 2018)

*Source: Own work upon Web of Science data (Clarivate, 2019).*

### 2.5.2.2 Cluster A: Business angel group decision-making

Advances in the first cluster of studies frame around alternatives to individual business angel financing. We observe a total of 30 articles with a total link strength of 4,314). Studies examine the supplemental closure of financing gap alternatives in business angel surrounding: enterprise capital funds and angel co-investment funds (Baldock & Mason, 2015). Enterprise capital funds represent specialized formal financing funds, which have no sector preferences and focus only on the monetary supply side of venture financing. Angel co-investment fund importance is denoted as a form of business angel strategic syndication with at least three business angels. Increasing the total value of the business angel investment market, angel co-investment fund closes the financing gap in the United Kingdom market, no matter the sectors the ventures are operating in. Also, the role of angel co-investment funds in the local markets (United Kingdom) increases the “level and quality of business angel syndication” (Baldock & Mason, 2015). We show our findings in Figure 9.

*Figure 9: Cluster A network map in total link strength by publication years*



*Source: Own work upon Web of Science data (Clarivate, 2019) and VOSviewer visualization (Van Eck & Waltman, 2009).*

Other studies in this cluster provide a technical outlook on angel co-investment funds and deal valuations. Syndication, or angel co-investment fund, takes the valuation of venture deals to a new level. In valuation, business angels sometimes use a technical approach to measure return (i.e., internal rate of return), even if they are not consistent in measuring all ventures' returns, or sometimes they do not measure the return at all.

Gregson and colleagues (2017) push the practicality of business angel research where they point out the use of a modified internal rate of return and consider the business angels' risk capacity. Studies highlight that risk capacity is closely related to the reinvestment

opportunities where business angels must plan their growth strategy and adopt another financial measure, the reinvestment rate of return. Practical insight on the reinvestment rate of return eliminates soft investment factors, and the emphasis is on clearing out investment strategies, such as redefining the deal size and total investment planning.

Studies cited in this cluster also discuss the reinvestment scenario, where business angels often employ “different criteria as compared to the initial investment decision and may protect their ownership but increase total exposure” (Gregson et al., 2017). Thus, the clear strategy in making an investment decision and the level of reinvestment rates of return impact the business angel decision-making. Using purely financial measures of investment success studies largely outdrives the critical role of business angels. Financing through syndicates still does not answer the question of how the decisions are actually made in the whole process.

The following selected core documents are typical for this cluster:

- Specialist versus generalist investors: trading off support quality, investment horizon, and control rights,
- The roles of the enterprise capital funds and angel co-investment funds,
- Financing innovative start-ups - the role of business angel networks.

*Venture Capital* is the journal publishing much of the research in this cluster. With most studies in the first cluster that reconcile the research around group investing in the entrepreneurial surrounding, we are careful when reviewing the studies that deal with business angel decision-making. Not many studies push their research in this space, but those who did give us valuable new insight into business angel decision-making. In Table 9, we show documents that share the highest link strength.

*Table 9: Cluster A highest link strength between references*

<b>Link strength</b>	<b>Reference 1 (First author, year, and publication)</b>	<b>Reference 2 (First author, year, and publication)</b>
11	Baldock, R., 2015, New Millennium (pp. 201-226)	Baldock, R., 2015, Venture Capital, 17(1-2), 59-86
9	Baldock, R., 2015, Venture Capital, 17(1-2), 59-86	Karsai, J., 2018, Venture Capital, 20(1), 73-102
8	Baldock, R., 2015, Venture Capital, 17(1-2), 59-86	Harrison, R., 2018, Small Enterprise Research, 25(1), 3-22
6	Harrison, R., 2018, Small Enterprise Research, 25(1), 3-22	Karsai, J., 2018, Venture Capital, 20(1), 73-102
6	Baldock, R., 2015, Venture Capital, 17(1-2), 59-86	Gregson, G., 2017, Venture Capital, 19(4), 285-311

*Source: Own work upon Web of Science data (Clarivate, 2019).*



builds on Mason's (1999) research agenda in *Venture Capital*, where a new generation of research will form knowledge in the business angel field (issues in methodology, analytics, theoretical and political issues). Still, White and Dumay (2018) call for a fourth generation of research in the business angel field with a particular emphasis on “the efficacy of government policy and programs; crowd investing; the changing nature of the angel market; gender issues; entrepreneurs; and emerging markets, localism and internationalization” (White & Dumay, 2018).

The two other most important pieces of business angel research in Cluster B are extensive literature reviews by Edelman and colleagues (2017) and a more focused review on business angel investment determinants by Capizzi (2015). Edelman and colleagues (2017) urge for more practically oriented studies. After reviewing 152 papers on business angel investments, they push the current research into the ecosystem and geography significance of research, the impact of angel investment groups, and public policy opportunities. Still, within a business angel decision-making domain, they seek studies where the level of experience, a certain background, knowledge propensity, involvement level, and gender issues remain unanswered (Edelman et al., 2017).

Capizzi (2015) investigates the relationship between soft and hard investment criteria while offering a comprehensive review of previous studies. Also, he shares one of the strongest links to the work of Tenca and colleagues (2018) and White and Dumay (2017), meaning that those studies are regularly referenced together in the research field. Capizzi (2015) hypothesizes that having enough qualitative, honest, and private information on the potential investment drives the investment success and points out the specific industry experience as a driver of the business angel decision-making whereas it “influences the rejection rate” in the investment process (Capizzi, 2015). All studies in this cluster seek a more diversified outlook on the investment process, where business angel decision-making is a fusion of psychology and finance research within the entrepreneurship field, so we name it “business angel research agenda”. Table 10 provides an overview of the cluster documents with the highest dyadic total link strength and, therefore, shows the conceptual basis of business angel decision-making.

The list of selected core documents reflects the density of the cluster area by providing a current research overview of the business angel field:

- Business angel research in entrepreneurial finance: a literature review and a research agenda,
- Business angels: a research review and a new agenda,
- Angel investing: a literature review,
- Business angel post-investment activities: a multi-level review,
- Angel network affiliation and business angels' investment practices,
- Angel investors' selection criteria: a comparative institutional perspective,
- High value-added business angels at post-investment stages: key predictors.

In this cluster, the *Venture Capital*, *Asia-Pacific Journal of Management*, and *Journal of Small Business Management* are the key journals by the number of contributions. Still, the *Journal of Economic Surveys* accounts for almost 13% of the total link strength in the cluster, meaning that authors *Tenca*, *Croce*, and *Ughetto* are dominant. Other prominent authors in the cluster are *White* and *Dumay*, with their work in *Venture Capital* weighting about 11% of the total link strength in the cluster. *Edelman*, *Manolova*, and *Brush's importance in this cluster is also significant, as authors have a total of 10% total link strength for their work in Foundations and Trends in Entrepreneurship*. Table 10 provides the top five dyads between documents from cluster B according to the highest total link strength.

Table 10: Cluster B strongest five links between documents

Link strength	Reference 1 (First author, year, and publication)	Reference 2 (First author, year, and publication)
83	Tenca, F., 2018, <i>Journal of Economic Surveys</i> , 32(5), 1384-1413.	White, B. A., 2017, <i>Venture Capital</i> , 19(3), 183-216
66	Edelman, L. F., 2017, <i>Foundations and Trends in Entrepreneurship</i> , 13(4-5), 265-439.	Tenca, F., 2018, <i>Journal of Economic Surveys</i> , 32(5), 1384-1413.
63	Edelman, L. F., 2017, <i>Foundations and Trends in Entrepreneurship</i> , 13(4-5), 265-439.	White, B. A., 2017, <i>Venture Capital</i> , 19(3), 183-216
58	Capizzi, V., 2015, <i>Venture Capital</i> , 17(4), 271-298	Tenca, F., 2018, <i>Journal of Economic Surveys</i> , 32(5), 1384-1413.
54	Capizzi, V., 2015, <i>Venture Capital</i> , 17(4), 271-298	White, B. A., 2017, <i>Venture Capital</i> , 19(3), 183-216

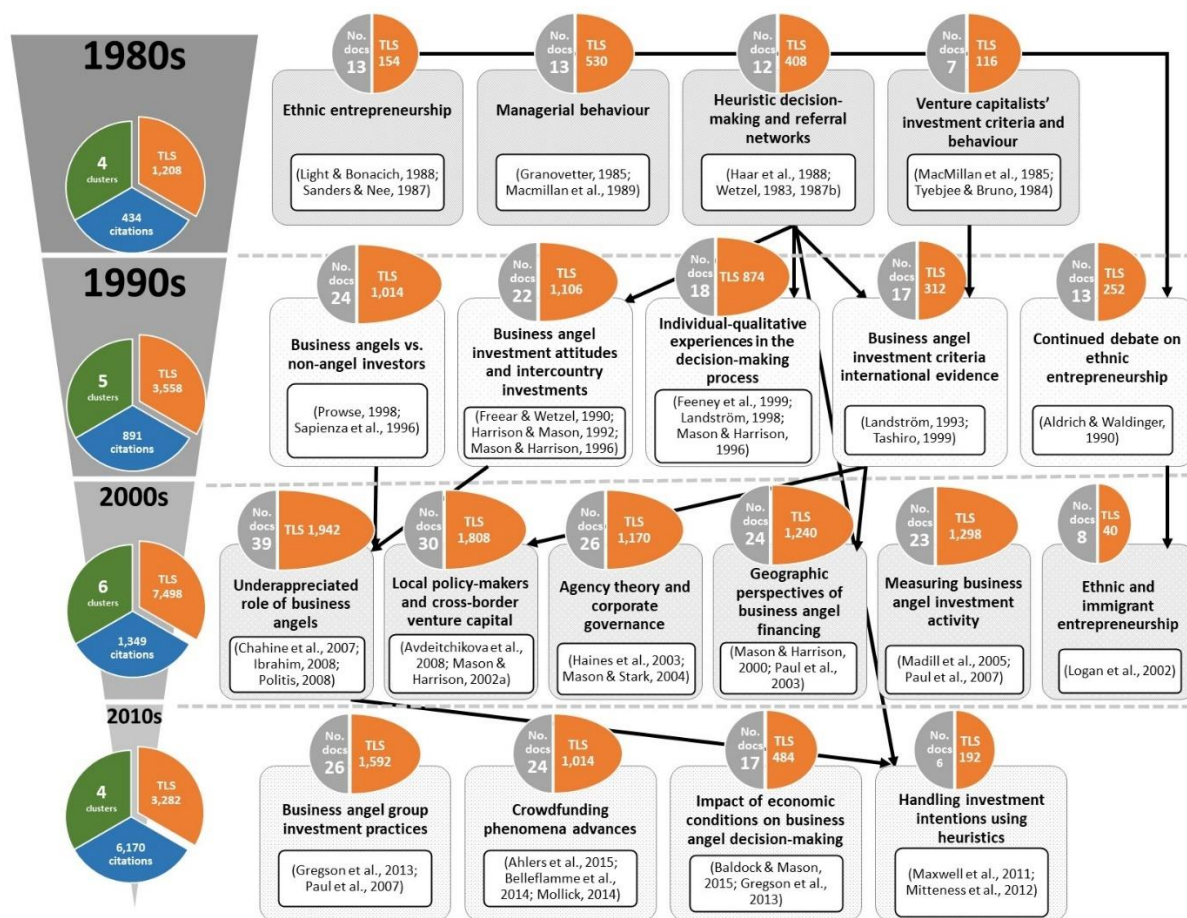
Source: Own work upon Web of Science data (Clarivate, 2019).

## 2.6 Discussion and implications

Within the multi-technique bibliometric analysis, we perform three different sub-analyses. The first one is the co-occurrence analysis where we present conceptual building blocks of the knowledge in the business angel decision-making field. Our co-occurrence analysis reveals three major keyword clusters in the field's network map. The first cluster is the major conceptual cluster of business angel research, which uncovers the concepts mainly derived from the economics and business research field. It deals with business angel decision-making performance in investment networks where the emphasis is on behavior. Later on, in the second cluster, the relationship between business angels and venture capital gets stronger with the newer concepts in the field, such as ownership structures and key terms in entrepreneurial finance (i.e., volatility, returns, equity crowdfunding, decision-making, venture capital market and growth). The third cluster of keywords tries to distinguish between business angels and venture capitalists. This is also where the business angel conceptual framework is strongly interrelated with the concept of growth and performance in innovation and private equity entrepreneurship.

The second analysis we provide is the co-citation analysis that deals with the structure of the scientific community and the research structure development of business angel decision-making over time. Within the four intervals that we study, nineteen clusters of knowledge appear, as we show in Figure 11. This gives us an idea of the diversified and rather heterogeneous knowledge frameworks in the business angel decision-making field. Prior literature reviews were conceptually different, but from the accumulated findings in Edelman and colleagues (2017), Drover and colleagues (2017), Harrison (2017) and Wallmeroth and colleagues (2018), we can draw specific comparisons in terms of un- or under-explored areas.

Figure 11: Business angel decision-making research development through intervals.



Note: TLS stands for total link strength.

Source: Own work upon Web of Science data (Clarivate, 2019).

In our study, we find that business angel decision-making research started conceptual evolution back in the 1980s. One unanticipated finding was that even if Wetzel published the first paper on business angel decision-making (Wetzel, 1983), the ground for studies had mainly been driven by finance and psychology research on investment behavior even before the 1980s. The first observed interval discovered four clusters of knowledge. These clusters were grounded in finance and psychology intersection research, with more specific

explanations given to the business angel surrounding. At the very beginning, business angel decision-making relied on heuristic decision-making and referral network ties. These findings further supported the idea established in previous literature reviews that business angel decision-making is highly dependent on the quality of the business network, whereas investment decisions were usually delivered upon shortcut decision-making (Drover et al., 2017; Edelman et al., 2017; Harrison, 2017; Wallmeroth et al., 2018).

The 1990s research gave us a diversified view of business angel investments. The leading lesson we take from this literature interval is that business angels do not only focus on the ideas but also on their proper execution. Thus, the quality of the venture manager (executive or owner) is one of the most important criteria when business angels make an investment decision. A good expectation fit between the business angel and venture management is crucial for successful funding. So, it is not the jockey *OR* the horse. Rather, it is the jockey *AND* the horse to have a perfect fit. In the 1990s, we also witness some further developments in the business angel decision-making criteria and processes. The differences between business angels and non-angels are not that significant regarding utilizing a formal investment. More importantly, they differ in the psychological factors that influence the decision-making process along with the success of the venture. Further use of psychological theories explained the business angel decision-making where we perceived the investment intention as a trust-related activity. From a psychological perspective, in a business angel decision-making environment, new concepts like trust play a critical role. The heuristics in decision-making form the dynamics in this research field.

Our co-citation analysis also finds that one of the major research streams in business angel decision-making always hypothesizes the importance of geographic proximity to business angel decision-making. This is also outlined previously by Drover and colleagues (2017) and Edelman and colleagues (2017), where proximity in geographical terms was the key investment criteria by business angels, both on the individual and group level. Our analysis shows that the concept of “investing closer to home” is bounded in the 1990s and 2000s studies where the geographic perspectives on business angel financing also took a note from cross-border venture capital practices and aligned with local investment policies. In the 2010s, the importance of investment proximity for business angel decision-making emerges and currently seeks new evidence.

The evolution of methodological and conceptual approaches in the business angel decision-making domain is evident in the 2000s. Most studies were published in specialized research publications and were used as “toolboxes” for dealing with business angel investments. Studies in this interval mirror those from the previous ones but are more specific in the business angel research output. The possible explanation for this might lie in the increasing size of the business angel market, where more sample-specific empirical evidence is needed.

In the 2010s, the first empirical studies on business angel syndicates appeared, and the investment process changed to more socio-psychologically oriented deal-making.

Syndicated and group financing decisions were previously also outlined by Edelman and colleagues (2017) as one of the emerging typologies for business angel investments. The 2010s emerged with only four significant clusters of studies, of which one new sphere of venture financing appeared. Even if business angels remain the single most reliable source of well-administered and mentored informal capital investment for early-stage ventures, crowdfunding research is the newest sub-field of potential research. This finding confirms the “change of entrepreneurial culture” as outlined by Harrison and colleagues (2017), where crowdfunding is linked to early-stage financing. Yet, this is still not densely connected to business angel decision-making nor business angel investments. Edelman and colleagues (2017) also emphasized this as a potential underexplored path in research where the crowdfunding impact on business angels should be further investigated.

Despite the evolution of business angel decision-making and venture financing in general, the literature on the question of ethnic, minority, and immigrant venture financing is scarce. This is in alignment with our earlier observations, which showed that ethnic entrepreneurship was the first emerging theme in our interval research back in the 1980s and continued appearing through the majority of our study intervals. Even if it occurs continuously, the research contributions are somewhat scarce and heterogeneous. A possible explanation for this might be that ethnic, minority and immigrant entrepreneurship scrutinizes access to business angel investments, and “results in less desirable financial outcomes” (Drover et al., 2017).

The bibliographic coupling analysis in this chapter also provides the first of that kind in the area of business angel decision-making. Since bibliometric studies in entrepreneurship are limited, this is a valuable contribution to the field’s research methodology and the field’s literature reviews. To see how the intellectual structure of the field changed, we conducted a bibliometric review of the body of knowledge. From our study, we draw substantial preliminary conclusions. First, the field is rather homogeneous, and multiple clusters are strongly related. This means the field is growing organically. Authors share similar ideas in the current research and are still pushing the research frontiers. Research frontiers in business angel decision-making go towards the new trends that are seen in practice – business angel group investments and the interplay between social-psychology factors and financial criteria in final decision-making is very important. Funding alternatives emerge and strongly influence the field *per se*. Investment assessment trends occur in crowdfunding research, and modified financial measures are also put forward. Moreover, deficiencies in the current research occur within crowdfunding, immigrant entrepreneurship, and gender issues. Additionally, there is evident domination of dynamic emotion-cognition research and impression management, where concepts like trustworthiness, intuition, and passion lead the research frontiers.

All in all, this multi-technique bibliometric analysis of business angel decision-making research provides a significant theoretical contribution by systematically mapping, evaluating, and interpreting the existing body of research in the field. It identifies not only

the volume and main research venues but also research frontier developments, trends, gaps and networks among authors, as we see in previous subchapters (see subchapters 2.3. Co-occurrence analysis and clustering, 2.4. Bibliometric co-citation analysis and clustering, and 2.5. Bibliographic coupling analysis and clustering). This multi-technique bibliometric study uncovers hidden patterns in scholarly communication, trends and relationships within the body of literature. Therefore, it enriches our understanding of business angel decision-making research, which is apparently largely informed by economics and business, as well as social-psychology research.

Since our interest in this dissertation is to analyze the investment behavior and criteria of business angels, we uncover interesting trends in research practice in the previous chapters. An in-depth study of our bibliometric networks shows the importance of the interplay between socio-psychological factors and financial criteria in the final business angel decision-making. From our co-citation analysis, we find that the concept of trust first appeared in business angel research in the 1900s. Since then, it plays a critical role in business angel decision-making as it transforms it into a trust-related process. From our previous analyses, it is evident that the individual-level factors of business angels that are important for their decision making still need to be explored. In particular, concepts such as trustworthiness, intuition, and passion shed light on the limitations of the research but have not yet been sufficiently explored. We also find that the personality factors of business angels influence their decisions. However, it remains an open question about which personality traits and personality levels (i.e., characteristics, emotions, feelings and attitudes) play a role in business angel decision-making and how they may affect their investment decisions. This strongly informs our following phenomenological study, in which we investigate which individual-level factors are evident in business angel decision-making and how they may affect business angel investment decision-making.

#### 2.6.1 Future research

As we claim in the introduction, this study aims to develop a benchmark for future research in the field of business angel investment decision-making, as well as gather a better understanding of the knowledge clusters in the given area. Our results suggest that scholars gather within specific clusters of research. Accordingly, that serves as an attractive ground for future research when all three analyses are combined (i.e., co-occurrence, co-citation, and bibliographic coupling). With that in mind, we challenge the replication of this study soon, so recent contributions to the field could also be part of the quantitative literature review of the research field. Due to the practical use of the contributions, the field will evolve in the upcoming years, and changes might appear in the invisible colleges within the field.

The first emerging research inefficiency represents crowdfunding as the first-best alternative to business angel financing. Still, there is a conceptual disconnect present in this comparison. In the crowdfunding process, multiple individual investors attempt to make the investment;

therefore, the risk is dispersed to multiple investors. Closing business deals is all about making decisions. Sometimes, we could say that regardless of the deal structure, decision-making is the same. If we do not regard the investment as an equity stake deal, we cannot align crowdfunding to business angel investing. What, on the other hand, could be interesting is to see how crowdfunding investors make their decisions and are there some unique set of personality characteristics that drive their decision-making. Do all investors in the crowdfunding sphere share the same motives, attitudes toward investment, risk propensity, and other personal characteristics? Additionally, there is no evidence of business angels taking part in crowdfunding deals, so it would be interesting to investigate how their decision-making may differ from business angel decision-making. This could lead to a more profound definition of risk assessment in the business angel deal-making structures.

Also, our bibliographic coupling analysis revealed a rising movement of equity financing of ethnicity or immigrant entrepreneurship. In the whole world, and lately, particularly in Europe, we experience mass migrations, and the potential entrepreneurial spirit of immigrants might add economic value to their migration. We have scholarly evidence on immigrant entrepreneurship in Poland (Europe) and Latin-owned ventures in the United States, as well as their funding perspectives. The rest of the world experiences the same mass migration pressure, but still, there is no evidence of immigrant entrepreneurship empowered by business angels. The question that comes in handy is whether BA should be more exposed to the market or are there some biases in the business angel and immigrant entrepreneur relationship. We see that immigrants and ethnic entrepreneurs avoid business angel investments, but the question that remains unanswered is why.

Additionally, we note the apparent literature deficiency on business angel gender issues. The question that remains open is how business angels still have a gender bias in their decision-making while they operate in the world of human and technological evolution. We would also require the answer to the question of which biases are those exactly. Studies show that male business angels have a gender bias in their decision-making, but what about female business angels? We are aware of the existence of “female-only” business angel societies. Could we observe through feminist theory (Elliott & Orser, 2018; Greer & Greene, 2003; Hurley, 1999; Orser et al., 2011) the decision-making in those female business angel exclusive clubs and how their decision-making would differ from male business angel? From the theoretical framework lenses, there is enough evidence to dig even deeper in this urging topic.

The remaining topics that have not yet been explored in the literature, as evidenced by our analysis, focus on heuristic decision-making. We witness the more profound financially oriented criteria in business angel decision-making, but we note the emerging themes in personality factors-driven decision-making. In the future, we need to see which individual-level factors or even personality levels (such as traits, emotions, feelings, and attitudes) are common in business angel decision-making and potentially how they affect investment decision-making.

### 2.6.2 Limitations

Even though this study uses a robust scientometric methodology, some limitations of this research could be addressed in future research. First, all our data came from the same source (e.g., we use the Web of Science database), and there is a possibility of common method bias (Podsakoff et al., 2003). Secondly, in our study, we apply the threshold point to the analysis of the bibliometric database. This means that we exclude studies with less than five citations in the co-citation analysis. So, even if some publications in 2019 are increasingly co-cited, we did not include them in the current study. We believe that those articles will prove their relevancy in the following research periods. Concerning that, our co-citation analysis eliminates the potential use of new publications that do not have citations yet, emerging fields, and smaller subfields, as it requires citations to accumulate. This could be resolved through the use of bibliographic coupling analysis instead of co-citation. It would be interesting to see what the comparative analysis of co-citation and bibliographic coupling analysis would look like.

There are two general limitations to our study. First, we use data from the Web of Science, which covers only high-quality journals with an impact factor. New journals that might include data of our interest could take time to be indexed. Still, previous research in entrepreneurship mostly relies on the Web of Science (Borgman & Furner, 2005; Meyer et al., 2011; Zupic & Čater, 2015) and is immediately available due to University subscription. Secondly, for our analysis, we use specific search terms. The more specific key terms are, the higher the probability of excluding some useful sources from our analysis.

Some issues remain open for future research. Exploring a sub-structure of observed clusters would be beneficial. Scholarly communication is more profound than our analysis shows; thus, the sub-structure communication, referred to as the analysis of communication patterns within specific subsets or components of scholarly literature, such as journals, research groups, or academic departments, to understand the flow of information and collaboration dynamics within those smaller units (Jeong et al., 2014), could reveal more deficiencies in the current literature.

It would also be of a significant contribution if we could expand studies on a longitudinal basis. In that sense, we could get a more precise picture of not only what the frontiers of the research are at the specific point of time but also how the diffusion of the business angel decision-making through research literature has taken place. The comparing results can be regarded as useful in analyzing current research trends and identifying active scholars.

## 2.7 Conclusion

The importance of bibliometric analysis lies in the fact that in combination with the narrative review it delivers a more powerful methodology for reviewing the given research fields (Van Raan, 1996). With this quantitative, bibliometric analysis of the business angel decision-

making research, we highlighted the dominating studies in the field and defined several clusters of knowledge within three presented analyses.

The density of intellectual collaboration resulted in several important conclusions. First, the field of business angel decision-making research in the early phases of research built upon the first possible comparator, the venture capital investors. Even if the decision-making processes have the same goal, there are significant differences between those two types of investors. Mainly, the differences rely on more heuristic-driven decision-making in the business angel market and more formalized investments in the venture capital market. Early research in the business angel decision-making field made a clear distinction between those two types of investors and enhanced the research in more personally oriented decision-making processes. Secondly, the early domination of research in business angel specifics (characteristics, background, investment patterns) enhanced the organic growth of knowledge in the field. Thirdly, in the business angel decision-making process, the psychological characteristics of business angels' presented dyads between entrepreneurship and social psychology, where we increased the pool of available theoretical background for future research.

Our analysis shows research grounds in three epistemological areas: entrepreneurship, finance, and psychology. Scholars compare business angels with venture capitalists in decision-making, or they indirectly conclude they are similar to entrepreneurs when observing entrepreneurs, or they focus on financial aspects of deal-making structure; or, lastly, they push the research heavily in business angel decision-making to the psychology field by looking at the soft personality-based criteria when making decisions about investments. This research interdisciplinarity creates research sustainability in the BA decision-making research.

Somewhat surprisingly, our analysis shows that several influential studies tighten the domain knowledge belt. However, this is not problematic, as the field is developing exponentially. However, what is problematic is that the evolution of field knowledge went and continues to be driven by the same pool of researchers. This raises an important question that could also serve as a basis for future studies: Is it complicated to participate in business angel research, or – what makes the research favorable for other researchers? In our study, we exclude most of the data in the bibliometric network from the knowledge base due to a low number of interactions with other data (i.e., interaction between key terms and authors). Upon analysis, we find that several authors in the field continuously form research clusters in our study. This is a little worrying because it seems that the research field of business angel decision-making is quite homogeneous and quite biased – framed around the same researchers with the same base of documents constantly circling in intervals and tighten the current knowledge belt.

### **3 AN IN-DEPTH PHENOMENOLOGICAL STUDY OF THE INDIVIDUAL-LEVEL FACTORS IN THE BUSINESS ANGEL DECISION-MAKING**

Behind every story we know, there is a story we do not know. Behind the entrepreneurial success, there are often business angels whose true story we do not know. So, to learn the story of selected entrepreneurial successes, let us go back to the beginning, to the individual investors who are on a roller coaster of decisions - whether to invest or not. In this chapter, we take a phenomenological stance and view decision-making as a phenomenon to which business angels can relate through their lived experiences of investment decision-making and explore which individual-level factors play a role in business angel decision-making. Through such a phenomenological lens, we deepen the understanding of business angel decision-making by compiling three sets of individual-level factors that impact how business angels make their decisions: character-based, experience-based, and relational-based factors. Within these three sets of individual-level factors, we uncover three specific novel factors, namely intuition, emotional intelligence, and respect, which are important antecedents of business angel decision-making but are neglected in previous research. In line with previous research, our findings also highlight the importance of trust, culture, vision, and experience in their decision-making.

#### **3.1 Introduction**

In conjunction with other definitions already found in the literature, we define business angels as informal investors in an entrepreneurial process's seed or early-stage phase. The academic community has studied business angels extensively (Falcão et al., 2023; Freear et al., 1994; Harrison, 2022), so we know that they prefer to invest in ventures in their geographic proximity and especially in entrepreneurs they know (Politis, 2016; Sørheim, 2003). It is also true that the added value of their investments is to provide active mentoring and networking opportunities to the ventures they invest in (Falcão et al., 2023; Macht & Robinson, 2009; Riding, 2008). Such mentoring services can be partly attributed to their previous experience as entrepreneurs or managers (Macht & Robinson, 2009; Mitteness et al., 2012). Evidence shows that the nature of their personal engagement provides significantly higher returns on investments made by business angels compared to non-angels (Haar et al., 1988; Mason & Harrison, 2002; Riding, 2008). When business angels reuse their experience, knowledge, social ties and money from previous ventures, they entrepreneurially recycle (Mason & Harrison, 2006).

Scholars propose that business angels make investment decisions based on experience and heuristics (Maxwell et al., 2011; Van Osnabrugge & Robinson, 2000) along with their investment decision being triggered by cognitive factors rather than relying solely on compensatory decision models (Franić, 2014; Franić & Drnovšek, 2019; Maxwell et al., 2011). Particularly important in business angel decision-making are various signals sent by

entrepreneurs seeking funding to convey their competence, commitment, and potential for success to business angels (Colombo, 2021; Edelman et al., 2021; Elitzur & Gavios, 2003). The role of signals sent by entrepreneurs in the overall experience of the dyad with business angels is to provide valuable information that helps business angels assess the potential of the entrepreneur and their venture, build trust and credibility, and make informed investment decisions.

In line with signals sent by entrepreneurs, business angels' experience-based decision-making is often guided by their own overconfidence (Capizzi, 2015; Forrester et al., 2019), passion (Cardon et al., 2009; Mitteness et al., 2012; Taylor, 2019), and perceived self-efficacy (Botelho et al., 2021; Maula et al., 2005). To date, research has focused on two sets of individual-level factors in business angel decision-making: the ones business angels perceive from entrepreneurs seeking investment (C. Clark, 2008; Collewaert, 2016; Svetek, 2022a, 2022b; Svetek & Drnovšek, 2022) and the ones that business angels expose, when deciding about an investment, the later still being fragmented and inconclusive.

So far, the literature on business angel individual-level factors in decision-making finds trust as being vastly important (Ding et al., 2015; Harrison et al., 1997; Sørheim, 2003) along with business angel's demographics such as age, education, income and gender (Becker-Blease & Sohl, 2011; Harrison & Mason, 2007; Li et al., 2014; Maxwell et al., 2011; Sohl, 2003; Wong & Ho, 2007), experience (Harrison et al., 2015; Maxwell, 2016) and culture (Block et al., 2019; Mason et al., 2019). However, apart from these individual-level factors, little is known about how "who business angels are" impacts their investment decision-making, and scholars urge for some broader explanation of this topic, like Paul and colleagues (2007) and Edelman and colleagues (2017). With an inductive phenomenological study with 16 business angels from several European countries, we respond to their call by investigating whether any other individual-level factors need consideration when business angels make investment decisions and how these individual-level factors can be organized into meaningful sets of factors.

With this study, we make two theoretical contributions to the literature on business angel individual-level factors in decision-making (C. Clark, 2008; Collewaert, 2016; Svetek, 2022a, 2022b; Svetek & Drnovšek, 2022). First, we complement existing research by discovering novel individual-level factors on which business angels rely when deciding about an investment. Thus far, the literature only sporadically accounted for the role of intuition, emotional intelligence, and respect in business angels' decision-making (Botelho et al., 2023; Harrison et al., 2015; Huang & Pearce, 2015). However, with this study, we are the first to provide evidence of their importance through the lived experiences of business angels who portrayed substantial roles in the aforementioned factors. Our second contribution is in progressing this stream of literature by mapping the fragmented factors identified in previous literature and newly identified factors in our qualitative study into three sets of individual-level factors that business angels use or account for when deciding to invest in an entrepreneurial venture: a) the character-based factors, which pertain to

business angel's intuition, emotional intelligence, and vision; b) the experience-based factors, which take into account business angel's experiences, skills, and competences, and c) the relational-based factors, which account for business angel's views of shared culture and values, respect and trust with the entrepreneurs seeking investment. With this framework, we aim to boost future research to dig deeper and provide empirical evidence of the individual-level factors in business angels' decision-making.

### **3.2 Background and phenomenological framework**

In this subchapter, we explore the nature of business angel investment decisions by reconciling previous empirical evidence on decision criteria with rationality, heuristics, and individual factors in decision-making. We do this to arrive at a basic understanding of what is missing in the literature but seems important when discussing business angel investment decisions. We match the current business angel literature with literature from the fields of entrepreneurship and psychology. Noting that business angel decision-making is an objective phenomenon, we further engage with the philosophy of phenomenology to show how the phenomenological framework fits our research study. We also show how the importance of phenomenological research in entrepreneurship is increasing.

#### **3.2.1 The nature of business angel investment decision-making**

In entrepreneurship, making sound investment decisions is crucial to the development, growth and venture success. All stakeholders in the process, being entrepreneurs or investors, must carefully evaluate opportunities in the market to determine which ones align with their strategy and business goals. This usually involves an in-depth understanding of potential risks and rewards associated with each step they make, being it a business development decision or an investment decision. Still, decision making in entrepreneurship goes even beyond just financial investments (Maxwell et al., 2011; Shepherd et al., 2015), and any decision is not made in isolation but rather in the context of overall business strategy, mission, vision, and general entrepreneurial surrounding.

But when we go back to the core of entrepreneurial decision-making, we must tackle the individuals who are responsible for the decisions made. Decision-making is a complex process deeply rooted in personality and individual-level factors (Bandura, 1999; Baron, 2008), and when studying personal factors, many studies in the entrepreneurship field lean on Bandura's work (Bandura, 1999). Previous studies in entrepreneurship find some individual-level factors that affect decision-making: cognitive factors, personal optimism, risk-taking propensity, experience and environment (Martins & Perez, 2020; Omerzel Gomezelj & Kušce, 2013; Płaziak & Szymański, 2014; Talebi et al., 2014). Also, very early studies in entrepreneurship identify education, fear of dismissal, perceived promotional opportunities, years of residence, and a number of previous places of employment as factors that distinguish entrepreneurs from managers, especially when it comes to the differences in

decision-making (Brockhaus & Nord, 1979). Some more current studies in entrepreneurship explore the role of various individual-level factors along with broad personality traits (openness, extraversion, emotional stability and conscientiousness), narrow traits (risk-taking propensity, innovativeness and proactiveness), and emotional intelligence as having an impact on entrepreneurial intention and status (Schlaegel et al., 2021). The cognitive processes involved in identifying, utilizing, comprehending, and controlling one's own and others' emotional states in order to resolve issues and control behavior are collectively referred to as emotional intelligence (Mayer & Salovey, 1997).

As we previously outline in this dissertation, business angels as our point of interest are part of this entrepreneurial landscape, and there is also extensive literature on business angels' criteria for investment decisions. We know that business angels invest their money in promising business opportunities, which shapes their unique attitude to risk and investment criteria. Moreover, their *modus operandi* is unique (Iruarrizaga & Santos, 2013; Riding, 2008). They are personally involved in the ventures they invest in, and their role in the ventures they invest in is less formalized (Paul et al., 2007). Therefore, their investment decision making differs from that of formal or institutional investors. Płaziak and Szymański (2014) highlight the importance of personal motives and characteristics in decision making when business angels search for potential investment ventures. This is the reason why we focus on decision-making through the lens of the individual business angel.

We know when business angels invest in new ventures, they have their own “unique motivations, intentions, experiences and personalities” (Collewaert, 2012), as well as money, time, knowledge, and social networks (Freear et al., 1994; Mason, 2008; K. Wilson & Reimsbach-Kounatze, 2011). Here, we also note that they entrepreneurially recycle, as business angels are often entrepreneurs who use their acquired wealth, accumulated experience (Harrison et al., 2015; Jeffrey et al., 2016; Maxwell, 2016), and contacts to promote selected early-stage entrepreneurial ventures and make it their mission to engage in this society (Mason & Harrison, 2006).

It is about their own money and expertise, so their personal commitment is apparent. However, this commitment leads to mixed rationality in their decision-making (Franić & Drnovšek, 2019; Van Osnabrugge, 2000). We know that they often use typical financial investment criteria (Croce et al., 2017; Granz et al., 2020; Sudek, 2006), but there is also evidence that some non-financial criteria guide their decision-making. Consistent with the notion that their decision-making is often based on their experiences, we also see in the literature that they reveal their self-confidence and perceived self-efficacy (Botelho et al., 2021; Capizzi, 2015; Daniel et al., 1998b; Forrester et al., 2019; Maula et al., 2005; H. Zhao et al., 2005). Accordingly, cognitive factors and heuristics often determine this experience-based decision-making rather than relying solely on compensatory decision models (Franić, 2014; Maxwell et al., 2011; Osnabrugge & Robinson, 2000).

How business angels rely on simple heuristics rather than fully compensatory models for decision-making is common in economic decision-making (Hauser, 2011) and specifically in entrepreneurial surroundings (Bryant, 2007; Busenitz, 1999; Busenitz & Barney, 1997; Shepherd et al., 2015). In line with previous studies in psychology, the use of heuristics is common in investment decision-making (del Campo et al., 2016; Gigerenzer & Brighton, 2009; Hilbig et al., 2012; Pachur & Hertwig, 2011) where Shiloh and colleagues (2001) point out in particular that “individuals appear to have personal tendencies that favor the use of compensatory or non-compensatory decision-making strategies based on personality traits.” Here it becomes clear that the current literature positions business angel decision-making at the intersection of entrepreneurship and psychology (Falcão et al., 2023; Franić, 2014; Mason et al., 2017; Mitteness et al., 2012; Vasić & Slavec Gomez, 2019).

In line with the non-compensatory perspective of business angel decision-making, as important appear various signals sent by entrepreneurs seeking funding to convey their competence, commitment, and potential for success to business angels (Ahlers et al., 2015; Alsos & Ljunggren, 2017; Kleinert et al., 2020). These signals serve as valuable information that helps business angels assess the potential of the entrepreneur and their venture. Some signals, like entrepreneurs’ presentation skills, have a strong impact on securing funding, along with impression management strategies (i.e., positive language and conformity) and entrepreneurial marketing that serves as a valuable tool for convincing business angels to invest (Plummer et al., 2016; Svetek, 2022a). Most importantly, these signals also assist business angels in making informed investment decisions, mitigating risks, and building trust and credibility with entrepreneurs.

However, entrepreneurs and business angels may have different expectations and mindsets, influenced by their previous experiences and networks (Svendsen, 2002), which might be crucial to securing investment. We know that investment decisions are usually based on the business angel’s intuition and that perceived entrepreneurial passion plays an important role in the business angel’s investment decisions (Cardon et al., 2009; Zacharakis & Shepherd, 2001). The relationship between perceived passion and assessment of funding potential is stronger for business angels who are older, have more intuition, have an outgoing personality, or are motivated to mentor (Mitteness et al., 2012). Balachandra and colleagues (2014) find that investors’ preferences are higher when they have more investment experience. Another recent study found that emotions can complement business angels’ rational thinking, as they can influence creativity, information processing, and risk (Snellman, 2018).

Most studies in the field emphasize the importance of individual-level factors in business angel decision-making and suggest that they play an important role in decision-making. Nevertheless, there is some but not enough evidence in the business angel literature of business angel-specific individual-level factors influencing or even driving decision-making. Therefore, in this study, we take the individual-level factors perspective to understand how business angels make investment decisions. Understanding how business

angels' individual-level factors influence decision-making can be valuable in making more informed and confident decisions and can shed light on why they make certain decisions. In addition, recognizing these factors can be helpful for business angels when working with others in collaborative decision-making processes.

### 3.2.2 Phenomenology, hermeneutics, and idiographic inquiry

Every human being finds himself in the circumstances of his existence, in the experiences and circumstances that constitute his identity. In order to explore these experiences in depth and to understand the philosophy of personal identity as such, we must enter into the phenomenology of the second person in order to understand its normative (Crowell, 2021). Personal identity is a subject of investigation in phenomenology, whereby considerations of embodiment, temporal becoming, and social constitution play an essential role in understanding personal identity (Bello et al., 2002; Gallagher & Zahavi, 2020; Sokolowski, 2000).

Previous studies advocate that personal identity plays a significant role in decision-making, influencing choices and cognitive processes (Berzonsky & Ferrari, 1996; Bryant, 2007; Ellemers et al., 2002). Additionally, they suggest that individual-level factors significantly shape personal identity, leading to decision-making (Ashforth et al., 2016; Ellemers et al., 2002; Hitlin, 2003). Harrison and colleagues (2015) emphasize that business angel decision-making is a social and individual phenomenon. Thus, in order to explore in depth the personal factors that shape personal decision-making, we need to examine the experiences that phenomenology best describes as the philosophy of experience (Carr, 2021; Gallagher & Zahavi, 2020; Jacobs, 2010).

Phenomenology does not begin with a theory but concentrates on the experience of the world (Heidegger, 1970; Husserl, 1983, 2012). It seeks to explore the universal nature of experience, identify the shared experiences of different individuals experiencing the same phenomena, locate the essence of experience, and analyze the meaning of individual lived experience (Drummond, 2002; Jones, 2001; Koopman, 2015; McPhail, 1995). The idea behind individual lived experience is to see “how they perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others” (Patton, 1990, 2002).

Aside from Husserl's foundational approach to Phenomenology as a philosophy, explaining it as transcendental phenomenology (Giorgi, 1997), Heidegger's hermeneutic approach emphasized interpretation and the question of being. Hermeneutic phenomenology is a qualitative research methodology that explores and conveys the meaning of a phenomenon in everyday life. It combines vivid descriptions of lived experiences with reflective interpretations of their meanings, emphasizing the uniqueness of individual experiences. It is a rigorous, valid, and valuable approach to understanding and interpreting phenomena (Bynum & Varpio, 2018; Miles & Huberman, 1994; J. Smith, 2007; Suddick et al., 2020).

Hermeneutic ideography uncovers much detailed information about a narrower subject of study. Heidegger (1970) believes that interpretation is a constant revision. He claims that when we interpret something, we must be aware that we have a pre-understanding of that particular phenomenon. When we read data, our judgments, preconceptions, and insights are revised as we gain new information. So, the idiographic approach to studies focuses on understanding people in their unique context (Heidegger, 1970, 1988) and psychological processes on an individual level and emphasizes the logic of abductive generalization. It questions rigid oppositions, addresses the inconsistency of the use of sampling, and explores the relationship between uniqueness and generalization by focusing on understanding individuals in their unique context (Gill, 2020; Love et al., 2020; Peck & Mummery, 2019; Piccirillo & Rodebaugh, 2019).

### 3.2.3 Interpretative phenomenological analysis and Hermeneutic circle

Interpretative phenomenological analysis is a qualitative research method aiming to understand and explore people's personal experiences. It is based on the philosophy of phenomenology, which focuses on examining these experiences from the individual's perspective. Interpretative phenomenological analysis emphasizes the unique and subjective aspects of each person's lived experiences.

There are several essential steps in Interpretative phenomenological analysis, as Alase (2017) and Pietkiewicz and Smith (2014) suggested. First, researchers need to formulate an appropriate research question that addresses the "how" rather than the "what". Secondly, the focus is on selecting participants for whom the research question is relevant (i.e., who have had the experience) so that researchers are able to gather comprehensive and context-rich data. This allows researchers to recognize that participants share information and interpret and give meaning to their own experiences. Therefore, participants must already have experience with the topic under study and have already "lived" it (Alase, 2017; J. Smith, 2003, 2004; J. Smith et al., 1999).

No general agreement is available in the literature when discussing the adequate sample size. Sandelowski (1995) claims that determining sample size adequacy in qualitative research is in the hands of the researcher's judgment and ability to evaluate the information appropriately collected. Despite the generalization of qualitative study sample sizes (J. Green & Thorogood, 2009; Ruhl, 2004; J. Smith & Osborn, 2008), we have a particular phenomenological framework where guidelines for sample sizes are not so generous. Creswell (1998) suggests keeping a sample size of 5 to 25 participants, and Morse (1994) to have at least six participants. J. Smith and Osborn (2008) claim that studies using Interpretative phenomenological analysis are published with small samples, ranging from one to fifteen or more, and recent trends enforce small sample sizes. All field authors agree that the sample should be relevant, as we discussed earlier in this chapter.

Regarding Interpretative phenomenological analysis, we emphasize the “double hermeneutic” method, which attempts to unravel complex problems through the lens of individual experience. Hermeneutics refers to interpreting data (or materials) collected in an Interpretative phenomenological analysis study (Friesen et al., 2012; Seymour, 2006). Essentially, this means that Interpretative phenomenological analysis involves two levels of interpretation. At the first level of analysis, participants interpret their own experiences. During the interview, they do not simply state facts but actively interpret and give meaning to their lived experiences. The phenomenon can be explained by the fact that people construct their reality through their own perceptions, beliefs, and cultural context. The second level of analysis is in the hands of the researcher and deals with interpreting the participants’ stories. The researcher must not only be able to understand but also to interpret the participants’ stories. This is the process in which much effort must be invested to uncover underlying behaviors, nuances, and contextual factors. In this part, researchers bring their own perspectives, experiences, and biases to the interpretation process, adding another layer of complexity to the study (Bynum & Varpio, 2018; J. Smith, 2007; Suddick et al., 2020).

In essence, the hermeneutic circle as a description of understanding emphasizes the dynamic and iterative nature of Interpretative phenomenological analysis, in which understanding deepens through continuous engagement with the individual and collective levels of the data (Armstrong, 2014; Seymour, 2006; Suddick et al., 2020). So, when we interpret something, our preconceived ideas are revised when we receive new information. In the hermeneutic circle, we start with the analysis, break it down into parts, summarize it, and then look at it as a whole to draw conclusions about the nature of the meaning (Seymour, 2006).

We begin by considering the essence of the “whole” and then analyze this whole and break it down into parts. So, when we analyze data and classify things into themes, they break down into parts, which we then synthesize. Then we look at the whole again (each transcript again as a whole), which gives us a new understanding, and through this analysis, the parts again make sense of the whole, and the whole makes sense of the parts, and so the cycle goes on and on. This brings us to interpretation. When we interpret data, our preconceived notions are revised as we receive new information. In this way, the phenomenon eventually makes sense (J. Smith, 2007; Suddick et al., 2020).

Interpretative phenomenological analysis is a systematic and thorough data analysis process focusing primarily on individual experiences. The flexibility of Interpretative phenomenological analysis allows for an iterative approach that enables researchers to move back and forth between steps to refine their understanding of the data continually. In essence, Interpretative phenomenological analysis goes beyond superficial descriptions and aims to uncover the richness and depth of human experience by examining how individuals interpret and give meaning to their own lived reality.

### 3.2.4 Increasing importance of phenomenological inquiry in entrepreneurship

Today's venture environment is much more demanding, and we consider business angels' investment decisions to be a phenomenon in the current business environment. Since decision-making based on heuristics is generally under-researched in the business angel literature, the problem of using personal factors in decision-making is best explored through qualitative research. When we speak of qualitative analysis in entrepreneurship, we expose the dyad of psychology, where there are various methodological approaches - from grounded theory, discourse analysis, narrative psychology, and participatory action research to phenomenology (Camic et al., 2003; J. Smith & Osborn, 2008; Willig, 2013).

With this in mind, we know that phenomenological approaches strive to explore the universal nature of experience, to identify common experiences of different individuals experiencing the same phenomena, to locate the essence of experience, and to analyze the meaning of individual lived experience (Flick, 2012; Pietkiewicz & Smith, 2014; J. Smith, 2003). The idea behind individual lived experience is to see "how they perceive it, describe it, feel it, judge it, remember it, make sense of it, and talk about it with others" (Patton, 2002).

In the field of entrepreneurship, we observe an increasing use of phenomenology in qualitative research. Many authors agree that entrepreneurship is a phenomenon that involves the creation of organizations and the pursuit of value creation (Anderson & Gaddefors, 2016; Audretsch & Mosen, 2008; Bruyat & Julien, 2001; M. Cook & Plunkett, 2006; Rocha & Birkinshaw, 2007). Recent studies on entrepreneurship also use phenomenology to explain the "insider perspective" of entrepreneurship. Cardon and colleagues (2017) provide an understanding of the phenomenon of entrepreneurial passion using a phenomenological approach and attempt to find out "how entrepreneurs themselves experience and make sense of their passion and its sources". Rich descriptions of entrepreneurial behavior, ranging from explanations of minor sample phenomenon explanations (Cope, 2011; Cope & Watts, 2000; Slavec Gomez & Stritar, 2022) to even more generalized approaches while combining results from multiple phenomenological studies of the same interest (Berglund, 2007) enrich the methodology in entrepreneurship research.

Rajasinghe and colleagues (2018) point out that Interpretative phenomenological analysis is an appropriate method for entrepreneurship research as it "discusses the authors' position on entrepreneurship" and "justifies the relevance of Interpretative phenomenological analysis for developing a deeper understanding within the field." Raco and Tanod (2014) emphasize the importance of examining entrepreneurs' internal factors and lived experiences, which aligns with the phenomenological approach that aims to uncover meaning through individual perception. Moreover, they provide an important perspective for the application of phenomenology in entrepreneurship. The central idea is that the real experiences of entrepreneurs are overlooked in the midst of statistical numbers. The results of a quantitative

entrepreneurial technique confirm conventional wisdom. Often, these results do not correspond to the contextual environment of people and society (Raco & Tanod, 2014).

Despite the solid theoretical and contextual assumptions that phenomenology should at least be used more often in entrepreneurship research, this theoretical framework is unfortunately still developing in entrepreneurship research. Cope (2011) explores the impact of failure on learning outcomes through interpretative phenomenological analysis. Huang and Pearce (2015) apply Interpretative phenomenological analysis to explore the “dynamics of commitment and affective commitment” of entrepreneurs. Slavec Gomezel and Stritar (2022) use Interpretative phenomenological analysis to study entrepreneurs’ perspectives on entrepreneurial recycling. Van Rensburg and Kanayo (2022) study sports effects on the ethical judgment skills of successful entrepreneurs, while Faghieh and colleagues (2022) use Interpretative phenomenological analysis to explore entrepreneurial frugality in crisis. Most recently, Bedarkar and colleagues (2023) explain women’s entrepreneurship in Bhutan using Interpretative phenomenological analysis; Teng-Calleja and colleagues (2023) showed community engagement experiences of social entrepreneurs in rural communities, again using Interpretative phenomenological analysis; and Batista Freitag and colleagues (2023) used Interpretative phenomenological analysis to explore the phenomenon of becoming an entrepreneur in the cooperation and poverty contexts while.

As we can see, the phenomenology of entrepreneurship continues to evolve. Nevertheless, there is still no research in the business angel field using this methodological approach. Maybe it is because the business angel field still does not recognize business angels as an objective phenomenon, or possibly it is because they are hard to reach. Alternatively, at the mundane level, the reason lies in the complexity of the field, with so many players. Still, as we seek to understand what it is like to make an investment decision from the perspective of business angels as we focus on their individual-level factors, the phenomenological inquiry seems to be suitable. In uncovering these individual-level factors, we must examine their lived experience where interpretative phenomenological analysis is the favorable research method.

### **3.3 Research study**

The literature review in the area of business angels’ decision-making shows that it still did not capture the whole essence of decision-making for business angels, more so through the perspective of business angels’ lived experience. To account for this shortcoming, we need to understand the factors at the individual level of business angels that constitute this decision-making phenomenon. In this subchapter, we present our inductive qualitative study grounded in phenomenology (Heidegger, 1962) by eliciting the stories of business angels and trying to understand what is behind their decision-making at an individual level and how they view their investment decisions. More specifically, our main research question is: What

individual-level factors are responsible for the decision-making phenomenon for business angels?

### 3.3.1 Data collection and ethics

The primary data collection method is the phenomenological interview, a semi-structured, in-depth interview with individual business angels who have experienced the investment process and can give us a deeper understanding of how they understand it. Following the proposed techniques for identifying business angels, the starting point of this study is to build a database of business angels in selected European countries by observing the investments supported by business angels. We then approach local business angel networks to establish contacts. To this end, we use the snowball system as a recruitment strategy in this qualitative study, i.e., we ask business angels to recommend business angels they know who are eligible to participate. This system leads to the development of referral chains and can help to close the communication gap with the business angel community. Although this method aims for a high response rate, it is not very objective and depends heavily on how the first business angels are recruited (Avdeitchikova et al., 2008; Farrell et al., 2008; Mason & Harrison, 2008; Riding, 2008).

The sample is relatively small and homogeneous so that we can actively engage in a dialog with our participants. We took ethical considerations into account, as participation in the survey was voluntary and confidential. We set the survey's date, time, and location according to the participants' wishes. Our final sample includes 16 business angels from Croatia, Slovenia, Italy, Spain, and Portugal, which we consider to be a relevant sample that provides a cross-country understanding of their investment decisions.

Each session we organize according to the semi-structured interview schedule. We prepare additional questions in advance to stimulate and guide our conversation (Pietkiewicz & Smith, 2014; J. Smith, 2003). We familiarize business angels with the initial interview questions when they agree to participate. This way we avoid ethical concerns if we ask questions they do not agree with or cannot answer for ethical reasons. It is also an excellent way to maintain a good interview structure and give business angels the flexibility to think in advance about some questions they would like to address that are not included in the interview guide. Nevertheless, we kept the complete list of questions for ourselves to focus our potential questions more precisely in case the interview went wrong.

At the beginning of each interview, we familiarize the business angels with the study's main objectives and the underlying research question and open the conversation with them as business angels. We guide the Interpretative phenomenological analysis interview through several categories. First, we try to find an explanation for the business angels' primary identity, what makes them business angels, and why they invest as business angels. This opens up the discussion about their views on the investment decision, where we ask several fundamental questions about their recent investment experiences: (1) How did you feel about

your last investment experience? (2) How did you feel the last time you saw venture pitches or talked to potential investors? (3) How did you feel the last time you decided to invest? (4) Remember your last bad investment decision. Now that you know you were wrong, what could help you make a better decision? (5) Could you describe your favorite start-up investment? These five questions open the discussion on business angel investment decisions. We use various prompts to clarify or elaborate on specific themes that emerged from the interviews as the interviews progress. During interviews, we wanted to immerse ourselves as much as possible in the psychological and social world of business angels, so we were flexible in the interview process design. This allows us to change the original interview questions after discussion with the participants and explore exciting and important areas that emerge in more depth. As our participants are experts in the field, we give them maximum flexibility to tell their own stories, making our interpretative phenomenological analysis interviews fully exploratory. Our full set of interview questions we show in Appendix 2.

The interpretative phenomenological analysis interviews last one hour or longer, depending on the intensity and commitment of the business angels and their free time allocation. All interviews took place from January 2019 to March 2020. We interviewed four participants in their offices, four at neutral meeting points, and the others via video link. We record the interviews so as not to interrupt the flow of conversation. We later transcribe the recordings for our analysis. Since qualitative analysis is a personal process that focuses more on the interpretative work of the researcher, in this study, we are interested in learning about the psychological world of the business angels. In this way, we capture a piece of the participants' identity (J. Smith, 2003). Therefore, we take notes on the actual non-verbal behaviors of the participants that we observe during the interview and compare them with the data from the interview for further analysis. Examples of behaviors we observed were feelings of discomfort, shame, emotion, and nervousness.

We reach saturation at the 16th interview as we capture subjects through a homogeneous population and iterative sampling. All participants must remain anonymous so that their names are known to the researchers, and we give each of them a fictitious name (alias) in this study outline. We use the ISO country codes to obtain information about the country of origin. The outline of participants we show in Table 11.

*Table 11: Outline of participants*

<b>Respondent alias (ISO country code), age, gender</b>	<b>Resume</b>	<b># Ventures funded as business angel</b>
Tin (HR), 54, M	A business owner with international education in finance and extensive working experience. Used to be involved in local BAN activities but decided to leave and to go with individual investments outside local BAN. Operates as business angel since 2018. Had multiple business angel investments and just a few exits.	17

To be continued.

*Table 11: Outline of participants (cont.)*

<b>Respondent alias (ISO country code), age, gender</b>	<b>Resume</b>	<b># Ventures funded as business angel</b>
Tin (HR), 54, M	A business owner with international education in finance and extensive working experience. Used to be involved in local BAN activities but decided to leave and to go with individual investments outside local BAN. Operates as business angel since 2018. Had multiple business angel investments and just a few exits.	17
Tom (SI), 63, M	Currently acts as advisor and partner at one consulting company outside Slovenia. Besides extensive work experience, he was appointed CEO of the biggest local e-commerce company. He also held top management positions in ventures within diverse industries on a cross-country basis. He operates as a single business angel and is not affiliated with local BAN. He has a degree in economics.	20
Ana (HR), 54, F	One of the most successful Croatian entrepreneurs with multiple previous executive positions. She is helping start-ups through funding and co-funding schemes. She focused on the skills of managing small and big teams, and through the years, she has developed a sense of what makes a quality team and how successful start-ups work.	29
Mia (HR), 48, F	Social entrepreneur with a degree in Economics. Extensive experience in the public sector and private sectors. She was one of the prominent people in charge of the business development of one of the most significant Croatian ventures. Her main areas of expertise are supply chain management, licensing, and marketing management. For the last ten years, she is a successful woman entrepreneur and owner of a company active in licensing, consulting, and organization of the worldwide supply chain operations for promotional products. Intensely devoted to fostering social impact orientation in business.	16
Dag (HR), 59, M	With more than twenty years of experience in international organizations, he was responsible for project management of projects related to economic development, support of SMEs, microfinancing, and supervision of project implementation activities in accordance with project objectives and documents. He owns his own company for the past 10 years.	15
Mark (HR), 48, M	A member of local BAN to catalyze early-stage investing in Croatia (CRANE). He is also the managing director of a private company for more than 15 years and a founder of a non-profit organization supporting entrepreneurs' regional development. Prior to starting his own business, he worked in the public sector. He holds degrees in economics and business.	30
Mario (ES), 60, M	He is an advisor-entrepreneur and business angel for growth and impact entrepreneurs. He has led several local digital businesses until 2015. He held several executive positions in the private sector throughout his career and was in charge of several IPOs and mergers in the corporate sector. He has a PhD in Economics and an MSc in information technologies.	45
Eva (ES), 47, F	She is an entrepreneur and a member of SBAN. Besides her business in the field of organizational compliance, she has a particular interest in impact investing. Her daily operations are focused on sourcing and advising social businesses. She invests locally and is an advisor in multiple international entrepreneurship initiatives.	20
Fio (PT), 42, M	Advisory Partner at local BAN. He sits on the Board of Directors of an international financial advisory company. Previously, he was a serial entrepreneur in the field of financial advisory and education. Holds an MBA from a university where he was familiarized with the start-up community. He mainly invests in financial and tech-oriented ventures.	15
Kaia (IT), 62, F	Former professor and experienced researcher in the field of funding technological and innovation ventures. With more than 20 years of general working experience and currently 10 years of experience in owning a business, she mainly invests in biotechnology and clean energy start-ups. She also had a short experience working for a Silicon Valley-based company in the United States.	30

To be continued.

Table 11: Outline of participants (cont.)

Respondent alias (ISO country code), age, gender	Resume	# Ventures funded as business angel
Loren (PT), 47, F	She started her entrepreneurial journey 30 years ago as a university student in Porto. Having occupied several executive positions in her own start-ups across Europe, she settled in Portugal a couple of years ago. She raised in one of her ventures 1,6 million EUR in Germany. For the past 15 years, she helps young entrepreneurs in the healthcare industry. She also advises entrepreneurs from the United States and has two investments there.	25
Kira (SI), 43, F	An experienced strategic planning and performance manager in the hospitality industry. Founder and CEO of a privately held company that deals with hospitality outsourced management. She advises young entrepreneurs and invests in start-ups on an individual basis. She was once a BAN member while living and working in Germany but prefers solo riding. In the past 20 years, she has had more than 30 investments and 20 exits.	54
Ber (IT), 46, M	Business owner of a strategy and marketing consulting company in Italy with international experience. Participated in several important international competitions and is rewarded as a businessman due to his inclusivity orientation in business leading. He invests primarily in technology and social entrepreneurship. Holds a master's degree from a prestigious European university, where he started building his business angel career.	15
Sani (PT), 44, F	Holds a master's in Corporate Finance from a Spanish university. She boasts a long working experience in the financial services division of an international conglomerate in Spain and abroad. She has vast experience in financial structures, M&A deals, and venture financing.	5
Kevin (SI), 46, M	Founder and director of the brokerage house, member of a board of directors of a privately held company. As a consultant, he advises several ventures and is actively involved in the advisory boards of various ventures. As a business angel, he advises young entrepreneurs and invests in start-ups individually or in collaboration with other business angels. Has rich experience in start-up financing.	23
Rico (ES), 58, M	Founder and a lead business angel in a local BAN. Holds a PhD in agriculture, MBA in business management from LBS, United Kingdom. He worked for 20 years at executive positions around Europe in agribusiness and environmental services. When he had an idea for business while being a university student, he could not fund it. Business angel societies were relatively invisible, as he said. His life mission is to strive towards a clean earth and sustainable life. He believes that his investments in agriculture, environmental, and waste services are the next stage of "giving back to society".	50

Source: Own work.

### 3.3.2 Data analysis procedure

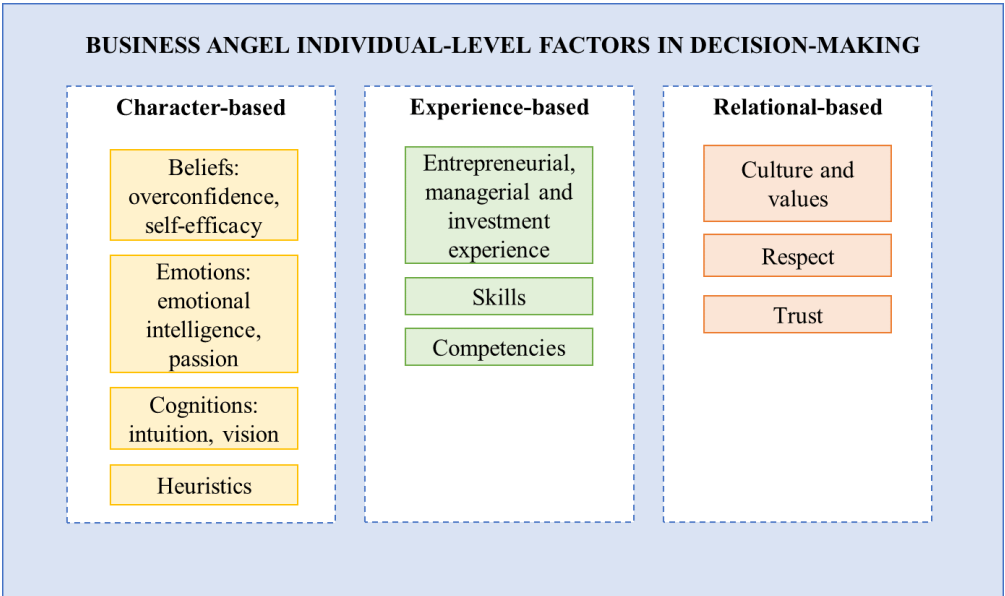
After collecting and transcribing the data by hand, we analyze the material, as pointed out by Smith and Pietkiewicz (2014). We actively enter into an interpretative relationship with each transcript in this phase. First, we read the transcripts several times and note down exciting and important facts from the interview. We combine these notes with the notes we make during the interviews about the actual observed behavior of the participants. In the next phase, we annotate theme titles, now transforming our initial notes into concise sentences to capture the essence of the meaning of the text. In this phase, we treat the entire transcript as data and do not give any particular importance to any topic. In the fourth phase,

we annotate the initial list of themes that emerge from the transcripts and group them according to the parts in which the themes appear during the interview (i.e., in which phase of the interview the theme appears, and to which concept it belongs when the dyad is mentioned). In this phase, we cross-analyze the themes. We take out all the themes and try to find out what differences and similarities exist between the personal experience themes (i.e., whether themes span the whole group, whether we repeat cases after observing new ones, etc.). We do this mainly by hand on a large piece of paper.

### 3.4 Interpretative phenomenological analysis in action: exploring the business angel lived experience when making investment decisions

Our interpretative phenomenological analysis study uncovers several themes in business angel individual-level decision-making. Some of the findings are consistent with the current literature, but we also uncover new individual-level decision-making factors that have not yet been addressed in the business angel literature (emotional intelligence) or have been neglected (intuition and respect). We summarize our findings into three main categories: character-based, experience-based, and relationship-based individual-level factors, as we show in Figure 12.

Figure 12: Business angel individual-level factors in decision-making



Source: Own work.

In the following sections, we explain these categories, uncover emerging factors at the individual level of business angels when making an investment decision, and corroborate our findings with representative excerpts from our interpretative phenomenological analysis interviews. Where possible, we align our findings with the existing literature.

### 3.4.1 Character as a core for business angel decision-making

*“When one has no character, one HAS to apply a method.”*

- Albert Camus (1956, p. 15)

The first thematic category that emerged in our interviews explains the factors at the individual level of business angels based on their character. We know that even business angels as individuals cannot make purely rational decisions (Jeffrey et al., 2016; Maxwell et al., 2011), which we cannot say is impossible. Nevertheless, in our study, we see that in situations where they can intuitively recognize that something will work for them or someone can work with them, where they may see further than what is being offered, where they have a vision, and where they can generally recognize that someone is not for them, their emotional intelligence skills come out.

For most of our participants, we find that they were guided to some degree by their intuition when making an investment decision - whether during the initial contact with the entrepreneur or during the pitch meeting. There is a strong sense from participants that, as Ana expresses, *“you have a gut feeling”* that investment in the venture is *“your fit.”* Our participants use the words *“listening to heart,” “gut feeling,” “inner voice,”* or even being explicit when saying *“intuition”* to describe their subtle trigger within themselves, which we interpret as intuition. All participants emphasize intuition in decision-making, where we find that, to a certain extent, decision-making takes place without explicit deliberation or conscious thought. Sometimes, this intuitive decision-making is not in line with the rational decision like Kaia points out: *“Even though it is completely insane and irresponsible, you know, but it somehow works. I just feel if this could work or not. I am unsure if this is my inner voice speaking to me or it is the experience”*. This intuition is often triggered by their previous experiences and how they handle it. In his interview, Kevin says that regardless of how pitch sessions with entrepreneurs are organized, he often says that *“there is the same energy [...] it is often the same phrases that the entrepreneurs repeat, everything looks and feels the same”*. He explains that he *“intuitively recognizes similarities to previous pitches,”* which allows him to make a quick decision based on his intuition. He tries to explain in his interview that there is a dyad between intuition and previous experiences and that, to some extent, intuition evokes those experiences. Several participants disclose that their intuition in investments never let them down (Fio and Kaia), but Rico explains that very directly:

*“There were times when I did so much really in-depth analysis, thinking about the environment [...], but in the end, you just have the feeling that it’s good or not. Especially when it comes to a particular click that I feel. Somehow I just know it’s right [...] My gut feeling will not let me go.”*

Ana is very specific in talking about intuition and relates intuition with meta-practice in decision-making, which goes even beyond regular data-driven decision-making:

“In every business, I listened to my heart. Even in severe businesses, I decided according to my instinct and not on paper. When I started deciding on paper, I was stupid to myself because anyone can do that, especially with start-ups. If you will work with someone to guide someone, you just need to feel that you two connect on a different level. The feeling matters.”

In our study, participants very often relate intuition to their feelings by focusing on how they “*feel*” when deciding whether or not to invest. In our interviews, we emphasize that this concept of feelings is often associated with business angels’ emotions and that managing feelings can be attributed to emotional intelligence. Regardless of whether they are introverts or extroverts, emotionally intelligent business angels are genuinely interested in entrepreneurs. Their curiosity stems from empathy, one of emotional intelligence’s most important elements. As Kira says: “*If you truly care about those entrepreneurs and their feelings, you will also show genuine interest.*” Our findings illustrate that intuition is inextricably linked to emotional intelligence and suggest that business angels consider emotional intelligence when making investment decisions. Intuition is not only related to past experiences but also comes from within, whether business angels are aware of their emotions and how they deal with them. Sani finds that dealing with emotions is crucial in her decision-making because she “*felt sorry for the entrepreneur, knowing intuitively that decision was not right.*” Kaia adds that she “*not only looks at numbers but also considers the people behind the numbers*” to show her empathy. “*When you understand how someone is feeling, you can interact more compassionately and supportive way.*” From our interviews, business angels have high emotional intelligence and can empathize well in most situations. Here, we must point out that there are gender-specific differences. Female business angels often associate empathy and their “*mother figure*” with very young entrepreneurs. Kira emphasizes this position by pointing out that:

“[...] the moral support is crucial to them [entrepreneurs], not in the sense of morals, but in the sense that they felt that someone really believed in them. And when I felt I was there for this support, with these ups and downs, sometimes being like another parent, I felt good. I just feel that you need to be there for them not only for business but also on a personal level”.

Apart from empathy, various social skills are important when business angels make effective decisions, especially in dealing with disagreements, as Tin points out. He believes that “*disagreements are a natural part of the investment process,*” but the key is to “*handle these situations diplomatically and with an open mind.*” Mia finds that emotional intelligence is important because she “*understands how entrepreneurs will be successful just by looking at them, their behavior, and facial expressions.*” However, even more than that, as Ana points out, “*nonverbal behavior reveals a lot if you can recognize those little behaviors.*” The business angel’s ability to recognize and understand the non-verbal behavior of entrepreneurs and their emotions impacts the business angel’s decision-making. Our participants highlighted several aspects of this nonverbal behavior that influenced their decision-making. The ability to interpret facial expressions or recognize subtle changes in facial expressions that express emotions such as happiness, sadness, anger, or surprise or to

pick up on cues such as posture, gestures, and movements to understand the emotions of entrepreneurs is a big part of business angels' emotional intelligence. Fio points this out directly in his interview:

“When I saw them mumbling around, hands in their pockets, looking away from me, I am really unsure how they would behave when in the future we have some important meeting with suppliers, for instance. That makes me unsure if they believe in themselves, which is usually a big no for me. Their confidence and my confidence just do not align.”

Aside from their emotional intelligence, our results also point to the visionary quality of business angels. Essentially, we see that business angels with high emotional intelligence incorporate intuition into decision-making and link it to their visions. Visions give business angels a sense of purpose and direction and are embedded mainly in their character. Kira speaks very directly about intuition and mentions the concept of vision for the first time in her interview:

“[...] And, yes, the presentation says much [dominance smile], but you never know what might happen, so sometimes you just have to have a bigger vision for the venture. You know? Something like seeing that in the future, like having a crystal ball [wink and proud smile]. Sometimes, you just know there is something good coming. You just have this good feeling.”

In line with Kira, Mark explains that he *“invests in opportunities that align with his vision, even if they require stepping out of his comfort zone,”* but he points out that he *“does not believe in visionary people, but rather those who are adaptable and transformative in the given circumstances.”* Furthermore, our findings suggest that business angels' visions can complicate the decision to invest. That is, if business angels' visions are not aligned with those of entrepreneurs, deals do not get done. Loren has trouble with their vision and decision-making because of the *“faulty alignment of vision, which also has a lot to do with the person, and it was hard for me to understand why they just do not see beyond the local market.”* Ana believes that *“sometimes I am just in my head thinking about where this could be, thinking ahead, but I am sometimes lonely there in those thoughts.”* For Ber, vision is *“part of who you are; either you are not a visionary, or you were just born one.”* He also hints:

“[...] and if I just see where this is leading me. I just feel it. I know the investment is good. Well, sometimes, I am tricked by my vision because I am not a solo player in this process. You know. There were also these guys. They could not care less about my vision of this venture and where this could lead us. But that is why I think this also did not succeed. It is not like I want everyone to follow my idea of where I think the venture could go, but I am here to discuss. They just did not want to adapt.”

Here, it becomes clear that visions are important to the business angel's character. Something Rico explains as being true to his character: *“My character, my decisions, they echo a commitment to a vision of the world I want to shape, not only this investment.”* Decisions that business angels make that are important to them on an individual level. They invest with

a specific goal, with visions of where the company can be in the future, and that is their experience as well. Tom points out that *“this is the purpose-driven decision-making, the idea of the future venture you have,”* and something that he experiences every time. He suggests that *“it is essential to see even beyond the data, beyond the pitch, but it comes with experience.”*

#### 3.4.1.1 Analysis and interpretation

The findings presented here confirm that business angels frame their decision-making upon the cognitive constructs (Franić, 2014) rather than using a fully compensatory decision-making approach (Maxwell et al., 2011; Van Osnabrugge & Robinson, 2000). Our findings go even further than previous studies, as we find that business angel decision-making is also embedded in business angels' character, where intuition, emotional intelligence, and vision play an important role. Thus, there is perhaps no better place to address the issue of character than in business angel decision-making. In categorizing our findings, we draw on previous literature and explain the “character” factors at the individual level as those relating to personality and cognitive state, in line with previous definitions of character (Baudry, 1984; Fishelov, 1990; Mordacci, 2021; Wright, 2014), and in our case are largely dependent on intuition, emotional intelligence, and visions.

Our findings show that intuition plays an important role in the character of business angels, as it reflects their ability to draw on their instincts honed over time and their prior experience with intuitive decision-making. Adding empirical weight to the current theoretical discussion, we see in this study that integrating intuition into business angels' character implies a degree of confidence in their judgment that enables them to manage uncertainty and make informed decisions that are consistent with their overarching investment vision. Although intuition has received relatively little attention in the business angel literature, our findings are consistent with the work of Harrison and colleagues (2015), who hypothesize about the importance of intuition in business angel decision-making and claim that business angels make decisions through, among other things, intuitive judgment embedded in heuristic decision-making (Harrison et al., 2015, p. 533).

The data shows that business angels' intuition is closely related to emotional intelligence, as it involves recognizing and interpreting subtle emotional cues from entrepreneurs. Previous literature in the field of business angel ignores the concept of emotional intelligence. The literature on entrepreneurship consistently shows a strong link between emotional intelligence and entrepreneurial performance (Ingram et al., 2019; Kamalian & Yaghoubi, 2011; McLaughlin, 2012; Oriarewo et al., 2019). In particular, aspects of emotional intelligence such as empathy, motivation, self-awareness, and self-regulation significantly influence entrepreneurial orientation, innovation, risk-taking and proactiveness (Kamalian & Yaghoubi, 2011).

A lack of emotional intelligence can lead to a poor combination of skills and hinder entrepreneurial success (Oriarewo et al., 2019). Emotional intelligence is also crucial for social interactions in entrepreneurship, such as negotiations, resource management and customer relations (McLaughlin, 2012), which is consistent with our data, as we find that business angels indirectly address this emotional intelligence in the interviews when they talk about their social interaction with new entrepreneurs.

Furthermore, as we see from our data (i.e., Ana's interview), recognizing and managing emotions in others is a key aspect of emotional intelligence and directly influences venture performance (Ingram et al., 2019). Ana shows this quite clearly when she talks about her entrepreneur. We must add that her relationship with her entrepreneur is ongoing, and her venture is one of the most successful in the region. Research has consistently shown a strong link between emotional intelligence and business success, particularly in the context of entrepreneurial ventures and investment decisions, whereas emotional intelligence positively influences entrepreneurial performance and success (Hess & Bacigalupo, 2011; McLaughlin, 2012; Zhou & Bojica, 2017). Hadi (2017) finds a positive and significant relationship between emotional intelligence and investment decision-making, with this relationship being reinforced by financial literacy. Similarly, Rubaltelli and colleagues (2015) find that people with high emotional intelligence are more willing to take risks when making investment decisions. However, Siloam and Gunawan (2023) find that while emotional intelligence simultaneously affects investment decisions, the individual components of motivation and self-confidence have no significant effect. These results suggest that emotional intelligence may play a role in investment decision-making, but the specific mechanisms and components involved may vary. When we corroborate this with our data, we see that high levels of emotional intelligence enable business angels to trust their instincts, which are often characterized by a deep understanding of the venture market and dynamics. As Rubaltelli and colleagues (2015) explain, people with high emotional intelligence are more willing to take risks and make efficient investment decisions, even if the expected value is negative.

#### 3.4.2 Experience-based factors at an individual level that lead to business angel decision-making

*“Good decisions come from experience.  
Experience comes from making bad decisions.”*

- Mark Twain

As we have already explained, our findings suggest that business angels often rely on their intuition to make quick decisions. However, we also find that intuition is partly due to their years of experience (Mark, Mario, Ber, Sani and Rico). Even though Dag claims that *“intuition sometimes plays a role in decision-making,”* he adds, *“ultimately, you should be an expert in the field to really choose the right investment.”* Our data shows that previous

experience greatly influences business angel decision-making. The following comment from Mia underlines this position:

“I can identify a market product, so something that will work, purely from experience. I do not think that it is specific knowledge, but I have so much experience and have seen so many attempts and fails to know why something is not working. I have been in this business for too long.”

Our interview data shows that business angels who have experienced business setbacks tend to use these experiences to avoid similar mistakes in the future. Mark explains that a solid foundation for making sound investment decisions is to “*apply the lessons learned so as not to repeat them again*” and attributes this statement to his extensive managerial experience and fear of failure if he does not follow his experiences. Business angels with extensive entrepreneurial experience (Eva, Tin, Mia, Karla) often state that previous experience with entrepreneurial failure or decision-making is a valuable learning opportunity. This is not to say that participants rely solely on their previous investment experience, but also that their entrepreneurial experience should be a vicarious experience for their entrepreneurs. Rico emphasizes: “*What I can do is bring all the knowledge and experience that I have, and I wanted them to take that with them.*” The following comment from Ana emphasizes the importance of previous managerial and investment experience in her investment decision-making. “*I have these sales, purchasing and investing, which is very useful for start-ups because you can tell them what someone is looking for [...] so you can prepare them from which direction, from which audience you want to raise capital.*”

In conjunction with previous experience, our data also shows that business angels use specific skills and competencies in their investment decision-making. To understand how they impact business angels’ decision-making, the following comment from Tom is very illustrative that managerial and entrepreneurial experiences embed the skills and competencies required for decision-making:

“I am in the industry for I do not even know how long. So I’m teaching them how to run an enterprise because they miss that the most, so how to run an enterprise from the inside, how to make a quarterly plan, how to track it, how to figure out where the issues are, how to run the KPIs, how to react if the KPIs are not achieved. It is like a hamster wheel. If you do not turn the wheel fast enough, someone will overcome you, and there is no time for sleep. Start-up is a way of life, not a job, it is a way of life, it is a style, a lifestyle.”

It is particularly interesting how Tom talks about his skills and competencies in a way that makes them crucial to the pursuit of his entrepreneurial activity. Our interpretation suggests that he re-applies these skills and competencies to every investment decision he makes. His managerial background has, as he says, “*equipped me with a toolbox to navigate this complex environment.*” His deep understanding of accounting principles and valuation methods and his financial expertise in general are essential for making informed decisions. This is also underlined by Tin, Mark and Eva when they say that they, too, make decisions

to a certain extent based on short mental calculations when a more profound analysis is usually not appropriate due to time constraints. Eva additionally emphasizes that *“the best way to make a good decision is to learn from your own mistakes and never repeat them again.”* Loren takes a similar view when she speaks of her previous experience, skills and competencies as “professional skepticism”:

“Now, I have some kind of professional skepticism, and I think that this particular start-up was not mature enough. Something was missing in there. I mean, I already saw stories like that. And when you talk about the numbers, when you talk about their engagement, when you see that they just do not understand peers, when you destroy their valuation just with a two-number calculation, when you leave them speechless - then I am just a no-go.”

Financial acumen and analytical skills seem to be important in our data for making investment decisions. As Kaia, who has extensive experience as a teacher, says: *“It is not just about understanding valuation, but also about interpreting market trends and assessing risk.”* Our data shows that business angels’ analytical skills play a critical role in assessing risk, interpreting market trends and making data-driven decisions (Ber, Sani, Kevin, Rico). Mario provides a deeper understanding of the skills and competencies that go into his decision-making:

“[...] and I think a blend of understanding finances and analytical skills is at the core of it. I always try to research as much as possible to ensure that I stay ahead of the curve, but I also want to mention that strategic thinking allows me to go through this dynamic market, and yes, adaptability is key for adjusting strategies when needed.”

The participants with extensive experience in management, investments or as entrepreneurs (Eva, Fio, Kaia, Sani and Ana) seem to recycle the skills and competencies they have acquired to develop a holistic and informed approach to making better investment decisions. However, sometimes, this is not enough when these skills and competencies do not match the current market realities. Dag points out something interesting: *“The world is constantly changing, and my investment decisions today are not the same as they were ten years ago, and you have to follow trends, learn new things, and keep an eye on the market.”*

#### 3.4.2.1 Analysis and interpretation

Research on business angel decision-making has emphasized the importance of prior entrepreneurial and managerial experience in evaluating business proposals (Croce et al., 2023; Harrison et al., 2015; Lindsay, 2004; D. Smith et al., 2010).

When considering the previous experience of our participants, we must first mention that they all have a comprehensive and rich understanding of the business environment: They have typically worked in multiple industries, changed positions, risen to leadership positions, or started their own companies. Whether it is managing a team, launching a new product, or negotiating contracts, the lessons they have learned in their previous jobs inform their

decision-making. This is consistent with existing literature that emphasizes prior managerial experience as an important factor for business angels when making investment decisions (Macht & Robinson, 2009; Mason & Harrison, 2000; Sørheim, 2003).

We see this background experience as important when we speak to Dag. He explains that business angels have to have up-to-date skills and competencies in this ever-changing market. This statement is in line with Botelho and colleagues (2023), who find that business angels' learning process positively impacts their investment decision-making, especially in the appraisal phase, but also on the final investment outcome. In general, our data suggest that business angels need to continuously learn, adapt, and develop new skills to improve their decision-making processes.

In our interpretation, we particularly emphasize that our data suggest that this “continuous development” should preferably occur within the new investment experience, which can impact their future decision-making. This is consistent with Harrison and colleagues (2015), who emphasize that “aspiring angels may need to unlearn some of their past experiences before they can learn how to be an effective investor.”

In our study, participants generally emphasized the importance of personal experiences and past decisions that provided them with knowledge and insights that informed their decision-making. Regardless of whether we talk about their personal lives, formal education and business experiences, or the decisions they have made with other entrepreneurs, the result is the same. When we talk about the impact of past experiences, our study shows that both past successes and failures provide valuable lessons that influence their future decisions, which is consistent with the work of Harrison and colleagues (2016).

The results of our study suggest that prior experience with venture investments contributes to business angels' risk assessment skills (Croce et al., 2020) as they learn to evaluate potential risks in the context of different opportunities and develop a clearer understanding of their risk tolerance. Our data suggests that this influences, to some extent, the way they approach future decisions and weigh up risks and opportunities.

In addition, personal and business experiences also contribute to developing problem-solving skills and the ability to anticipate possible outcomes. These experiences help individuals better assess risks, evaluate opportunities and make informed decisions. The ability to draw on past experience provides a valuable foundation for strategic planning and enables individuals to adapt and respond effectively to new challenges and opportunities.

In summary, past personal and business experiences play an important role in business angel decision-making. They represent a reservoir of knowledge, wisdom and perspective that business angels use to make both personal and professional decisions. Whether they learn from triumphs or setbacks, these experiences serve as invaluable reference points that enable them to make informed decisions.

### 3.4.3 Factors at the individual level that affect resilient relationships with entrepreneurs

*“Business happens over years and years. Value is measured in the total upside of a business relationship, not by how much you squeezed out in any one deal.”*

- Mark Cuban, investor

Our further findings highlight the importance of business angels' relational-based individual-level factors in their decision-making, and the first theme we find in our data relates to the culture of business angels, which strongly embeds their personal values in their relationship with their entrepreneurs. As Sani says, *“It is not about me being right and them being wrong; it is about how we understand each other,”* indicating concerns about different communication styles from different cultural backgrounds. Tin says something similar about investing in an Italian start-up, where he points to cultural differences and values as a *“bumpy road”* that points to social dynamics. Ber describes how he did not even know how to overcome the cultural differences when he invested in an Estonian start-up as they *“do not make sense to him because it is a business”* and *“it is a standard.”* Ultimately, he compares overcoming cultural differences and values to *“finding the right dance steps.”* These positions are underlined by Kaia, who, as an Italian business angel, had severe problems with the cultural differences in her German-based start-up but eventually found a way to overcome these differences:

*“[...] you know, I have this very expressive voice, and I noticed differences in how we communicate. It felt like my enthusiasm was sometimes seen as too casual; while they were direct, it bothered me, and I never understood what they thought. But in the end, it turned out fine and it still is. Somehow we adapted [...].”*

Ber emphasizes the importance of understanding the culture of the country he is investing in and prefers to invest in Italian ventures, as he says:

*“Sometimes I shout. Well, they think I shout, but actually I am just talking. And if you are not Italian or at least Mediterranean, you will just misunderstand it. It is how I talk, like the majority of us in here talk. We do not shout. We are just expressive sometimes. Sometimes, too much. [...] I had this start-up from Estonia. We just could not get along. I exited after a couple of months. I was worried they would sue me for bullying. But is shouting bullying?”*

Although we can see from our data that each culture has its own way of communicating - some are straight to the point, while others like to keep things a little more subtle; either way, this affects how business angels share and understand information when making decisions. The following comment from Rico sums it up when it comes to an understanding of this position: *“It has made our discussions very interesting as we have worked out how to make sure everyone gets what they need from our meetings.”* Our data also shows that, generally, it seems challenging to invest in ventures with different cultures when there should be a *“frequent and close relationship,”* as Mario points out. He adds that if this close relationship

exists, *“you should work as a unit; otherwise, you are not business angel, but just another venture capital guy”*. Eva adds that *“it is much easier when business angels and entrepreneurs understand each other on a personal level, with the same language, aspirations and values”* when it comes to the potential problems of dealing with international entrepreneurs:

“Even if there are many opportunities across the world, it is much easier to have a relationship with some entrepreneur who understands your perspective and some cultural things, like saying Happy birthday to someone or hugging him. I had such awkward situations in the United Kingdom the other month. We had a series of pitches, and I wanted to hug afterward a girl who designed reading stickers for blind people. I thought it was so great. I was so proud like she was my daughter, but when I wanted to approach her and say that I would go with her no matter what, she just took one step back. I was a bit surprised, but I understood. Either way, I invested but am not so much involved.”

Regarding cultural differences and the fact that a business angel’s culture is an important part of their decision-making, Mark points out that there are some situations where a *“mismatch”* can be observed, usually due to the cultural context. He also says this is sometimes the main reason he does not invest. He refers to the term *“intolerant of nepotism”* and explains that this is deeply ingrained in some cultures, and people who have grown up in different conditions cannot understand this. Dag emphasizes this by saying that he did not want to accept *“lousy explanations just because she was the niece of my old business partner”* when confronted with inconsistencies in the *“story she told me”* in the relationship with the last entrepreneur.

In our data, we also discover that cultural factors shape different values in the social structure, with hierarchy being one of the themes uncovered. We must note that the participants with a strong business background (Sani, Kira, Loren, Fio, Mario, Dag, Ana, Tom) seem to see hierarchy as part of their culture. Rico expresses this need for the hierarchy: *“I am not like the general in the army, but there is this investment pyramid, and my position is there, at the top.”* Here, we also refer to Ana expressing hierarchy differently, as she feels *“respected and in control”* when her entrepreneur *“checks with me if everything makes sense, and he will do seven versions of something to make sure I approve it.”*

It is interesting to see that Ana values hierarchy as part of the culture that is important to her in her relationship with her entrepreneur, but the most important thing for her is respect, as she adds that *“he [the entrepreneur] really appreciates what I do for him and would never go behind my back and that goes for both sides.”* The following comment from Rico further clarifies this notion of respect: *“I just need to see that they respect me. I am there with a lot more experience. If you do not respect me, we will not do business [...] it is not just about personal respect, but I am running this investment, and my position on this team needs to be respected.”* His demand for respect stems largely from his respect for his superiors in his previous business positions, as he adds, *“Where would I be if I did not recognize my boss’s position – nowhere, maybe on the street.”* Again, we see that hierarchy, rooted in culture

and values, is related to respect and, in Rico's case, shapes him as a business angel. To use his words, he is willing to give respect, but he also demands respect from his entrepreneurs. If this reciprocity of respect is not maintained, the relationship becomes turbulent and is most likely to break down. Kaia reinforces this point of view when she talks about her previous investment, which failed mainly because of "*irreconcilable differences*," as she says. She explains this situation as follows:

"[...] What they did was unacceptable. Look, you cannot go without my permission, there, out, showing off to other investors. It is just a no-go. I was the first who accepted you. I gave these kids my effort; if you put it like that, you must respect me. It is not something that bothered me, but since then, I have set out clear rules. I must give permission [...] it is about the hierarchy respect. Just like that."

As an experienced business angel, Dag can explain respect as "*a secret ingredient that makes everything work. It is about valuing each other's ideas, time and effort. People listen, work together, and build trust when there is respect. It is not just a professional thing. It is a human thing that makes the world a better place for everyone.*"

In conjunction with our previous findings on respect as an important theme, our data shows that respect is the cornerstone that paves the way for trust, as trust is an essential part of the relationship between the business angel and the entrepreneur. All our participants believe that trust is important, but they mention it in different ways. Eva emphasizes trust with "*that level of transparency and the feeling that we are on the same page*," as does Mario, who associates trust with "*acting in good faith*." Mia speaks of trust as "*dual good will and commitment*." Kira talks about trust and explains that "*there has to be a genuine desire on both sides to make a difference, and that is what creates trust*." Rico needs to "*feel that personal connection, that shared understanding and trust*." He adds:

"[...] it is about knowing that when things are going to get tough, we are in it together. So, that personal touch is what transforms an investment from a transaction into a true partnership. It is more than business; it is a shared journey. But we need to be sincere, and we need to be in there really together. We need to share our moral ethics, and there has to be integrity, a sense of honor, I would say, for both of us, in reciprocity."

It is interesting to see how the participants explain trust through shared values. Ana still pursues long-term investments without an exit strategy because of the "*exceptional trust*" and "*exceptional commitment*" of the entrepreneur she follows. She adds that in their first meeting, she saw "*his commitment to fair play*" and that both she and the entrepreneur feel "*safe throughout the investment relationship because they know that this partnership goes beyond mere financial gains*." She adds a concluding statement in which she agrees with Rico: "*[...] like we have built trust on the same basis, the same values, and that is important to both me and him*". Kevin reinforces this position that trust leads to a resilient relationship with the entrepreneur by saying:

“What really got me onboard? Trust. I had these down-to-earth talks with the founder about all the messy, real stuff, you know, risks, challenges, you name it. His straight-up clearness and transparency? That is what got me nodding. It felt like we were in this together [...]”

As we can see from the narrations, while trust is vital for building resilient relationships with entrepreneurs, the participants agree that, as Tin says, *“sometimes it comes from within,”* referring to trust in oneself. Loren says she was *“on a good path”* when she learned to *“trust her own judgment.”* Until recently, she still felt insecure and did not trust her decisions *“to a certain degree,”* and as she adds, this was not because of her knowledge but because of her inexperience as a business angel and her lack of confidence. Ber mentions that *“trust yourself”* is essential to making bold decisions and facing challenges with resilience, but that trust *“comes with time”* and *“with experience”* and affects how business angels make decisions *“sharply.”* He adds that when business angels trust themselves, *“you will find it easier to understand the obstacles and overcome them”* so that you are able to *“feel empowered in your decisions.”* Kevin also points out that *“the most important thing is to trust yourself because, at the end of the day, it is about yourself and your wallet, your time.”* Sani explains that *“trust comes from within. If you are honest and have integrity, entrepreneurs will trust you, and business will be transparent”*. Tin reinforces this viewpoint and explains:

“If you want to avoid any complication when dealing with an entrepreneur, you have to put the cards on the table [...] you first have to show them you trust them, and then if your intentions are honest [...] it will be mutually beneficial.”

The majority of our participants highlight that moral principles and trustworthiness build trust and, in turn, create stronger relationships with their entrepreneurs. Some of them were not explicit, but we uncovered the sense that trust as their individual-level factor is often aligned with respect in dealing with others.

#### 3.4.3.1 Analysis and interpretation

Although previous studies highlight the importance of culture in business angel decision-making (Bonnet et al., 2022; Botelho et al., 2023; Cumming & Zhang, 2019; Maxwell, 2016), their main contribution is to document which culture business angels belong to and how this influences their role as business angels. Our study shows that culture plays a prominent role in decision-making, primarily as our participants associate it with communication norms (Ber and Kaia). When Kaia talks about *“voice”* in her interview, she talks about the tone of her voice and emphasizes her background. She tries to explain that being more expressive and relying on non-verbal cues is part of her culture and then personally emphasizes warmth, openness, and building relationships through personal connections. When relating to entrepreneurs with a different cultural background and who often do not understand these differences, their behavior can change. As we see with Kaia, this can affect the relationship, so the business angel is unsure whether cultural differences

will play an important role in the relationship, so she sometimes takes a step back. These cultural differences lead to misunderstandings, as Eva explains, where we see that her enthusiasm in gestures was perceived as too informal, or the straightforwardness of the foreign entrepreneurs seemed abrupt to her.

What we also see in our data is the notion of nepotism, which is deeply rooted in some cultures (Mark and Dag) and which raises ethical concerns as it involves favoring individuals on the basis of family or personal relationships rather than merit. In terms of business angel values, it is down to the ethical choices business angels make in their investments. Our participants note nepotism as conflicting with their core values as they base their decisions on merit rather than personal relationships.

Additionally, our data shows the rising importance of respect in various forms essential to deciding to invest and build a worthy relationship with an entrepreneur (Politis, 2008; Riding et al., 2007). First, we see that business angels with solid business backgrounds respect the hierarchy in these relationships and seek respect due to their experience (Rico) and the financial input they make in the relationship. Our participants also express this respect for hierarchy as embedded in the culture.

Ultimately, our results suggest that trust is crucial for business angels. This is consistent with the existing literature, which finds that trust plays an important role in business angel decision-making and influences both the decision-making stage through the likelihood of an investment and the success of the final relationship with the entrepreneur (Bammens & Collewaert, 2014; Fili & Grünberg, 2016; Lefebvre et al., 2022; Maxwell, 2016). Ding and colleagues (2015) find that social trust can improve information sharing and cooperation, increasing the likelihood of BA investment. This is in line with Mario, who relates trust to “*acting in good faith*” (Welter, 2012), reasoning clearly with Uslaner (2012, 2018), who explains social trust as “*faith in people*.” Nevertheless, social trust appears again and again in our data, especially when we associate trust with integrity (Sani) and honesty (Tin), which is consistent with the individual entrepreneurial values as recognized by Payne and Joyner (2006).

What we can also see from our data is a trust under challenging phases of venture activity. Rico says that trust for him means knowing that he and his entrepreneur will act together in such phases. Lefebvre and colleagues (2022) also underline the importance of trust in maintaining the relationship between BA and entrepreneurs, especially in difficult times. What we also discovered in our study is the concept of self-trust, referred to by our participants as “*trust in oneself*.” We see that, especially in the early stages of validating business angels in the venture market, self-trust is critical to building a stronger character. Between the lines of our interviews, we find that self-trust is somewhat related to the business angels’ intuition. This relationship has already been explored in the psychology literature (Jordan et al., 2007; Liebowitz et al., 2017). However, we find no evidence of this relationship either in the business angel or in the entrepreneurship literature.

Finally, we must not neglect the silver lining between trust and personal values, as business angels tend to place their trust in entrepreneurs based on shared principles and beliefs (Ding et al., 2015). That is the case here. This study shows that where business angels experience shared values with entrepreneurs (commitment, honesty, and ethical behavior, according to our findings), there is trust, and this venture partnership goes beyond mere financial gains.

### **3.5 Discussion and implications**

With this qualitative phenomenological study, we accomplish two research goals as we set in Chapter 1 of this dissertation. First, we explore and gain a nuanced understanding of the lived experiences and subjective perspectives of business angels who have had entrepreneurial venture investment experiences and uncover the underlying meanings and essence of their experiences (Research goal 4). Additionally, we uncover new individual-level factors of business angels that might not be covered in the current literature but are important in their investment decision-making (Research goal 5).

Therefore, as we previously outlined within the results and analysis of our study, our findings contribute to business angel literature on decision-making. Previous scholars usually focused on the antecedents of business angels' investment decisions and heuristics decision-making, not much on how business angels experience their decision-making and make sense of their individual-level criteria when making decisions. Thus, we find that with this study, we make several contributions based on qualitative data from 16 business angels from selected European countries. First, we present a framework for individual-level factors in business angel decision-making, which we group into three categories. With this study, we reply to a question of "the changing character of business angels in developed markets where they are looking increasingly like venture capitalists and the impact that has on the amount, stage and level of involvement of the investor remain unanswered" (Edelman et al., 2017, p. 357). We build upon the definition of character as "all components that determine human behavior in a specific situation, consisting of personality, sociocultural factors and current factors like cognitive state" (Bolock, 2020, p.3) and expose new business angels' individual-level factors in their decision-making.

It comes from the first category of business angels' individual-level factors grounded in their beliefs, emotions, cognitions and heuristics. We know from the previous business angel literature that some character-based individual-level factors are already known in their decision-making. Namely, beliefs like overconfidence and self-efficacy have been explored in previous studies (Forrester et al., 2019, 2020; Harrison et al., 2015). Cardon and colleagues (2009) showed previously that business angels use displayed passion as a factor in their investment decisions, along with enthusiasm, preparedness and commitment being key components. We also know that emotions, in general, play an important role in business angel decision-making (Snellman & Cacciotti, 2019; Snellman, 2018).

Our first contribution is that emotions in business angel decision-making go largely around their emotional intelligence as an individual-level factor that was not previously exposed in the business angel literature. Previous research has consistently shown a strong relationship between emotional intelligence and decision-making in entrepreneurial and investment behavior contexts (Ameriks et al., 2009; Rhee & White, 2007; Tanvir et al., 2016). This is particularly relevant in the case of business angels, who often make high-stakes investment decisions. D. Smith and colleagues (2010) suggested that business angels' decision-making is a learning process, which we claim could be influenced by their emotional intelligence, as we see from our study. We build this reasoning upon the findings from Alzoubi and Aziz (2021), who found a positive relationship between top management's emotional intelligence and the quality of their strategic decisions, with open innovation playing a mediating role. We found that business angels often have managerial experiences, as we claim in our experience-based individual-level factors, and as evidenced in the previous studies (Macht & Robinson, 2009; Politis, 2008, 2016; Ramadani, 2009). Therefore, we can infer that emotional intelligence plays a significant role in business angel decision-making, mainly arising from their ability to manage emotions in their relationship with entrepreneurs, potentially influencing their investment criteria and learning from experience.

The second clearly exposed business angels' individual-level factor in their investment decision-making is intuition. Previously, Paul and colleagues (2007) found business angels to be intuitive in assessing how much equity they should receive in return for their investment. Additionally, Haines and colleagues (2003) found within the group of informal investors in Canada a notion of a "gut feel" when they approach the due diligence process, the latter being somewhat outside of the business angel research scope. We build upon these findings and resonate that business angels' decision-making, in a broader sense, is guided by their intuition. It is the important antecedent of how they make sense of their decision-making and shows how and if they will even functionally operate with their entrepreneurs in the future. Business angels' intuition comes from their character and relies on their previous experiences. There are evidences in the entrepreneurship literature that intuition plays a significant role in entrepreneurial decision-making (Allinson et al., 2000; Baldacchino et al., 2015; Cunha, 2007; Sadler-Smith, 2016), with successful entrepreneurs often relying on their gut instinct (la Pira, 2010; la Pira & Gillin, 2004). Therefore, intuition should be accounted for in future studies, especially when observing the pre-investment stage in the relationships between business angels and entrepreneurs.

Another takeaway from this study is that business angels' respect, as rooted in personal values, can be determined in making their investment decisions. This means that if business angels' respect is not aligned with the respect entrepreneurs expose, there is a high chance that investment will not be made. Respect comes from personal values, which can influence heuristics and performance in human decision-making (Fritzsche & Oz, 2007; B. Green, 1997; Pasewark & Riley, 2010). Our study also uncovers the triangle between intuition, heuristics and respect. It is not explicitly mentioned in the previous literature in the business

angel decision-making field, but some similarities exist between intuition as a concept and heuristics revealed in some previous studies. In their early-stage decision-making, business angels tend to use a non-compensatory approach, focusing on eliminating opportunities with fatal flaws rather than weighing multiple attributes (Maxwell et al., 2011). This is something that needs to be embedded in future studies, the more cognitive and heuristic-driven side of business angels' decision-making, as not everything lies in numbers.

What is important to note in the practical contribution of this study is the use of intuition often triggered by heuristics, personal values and previous experiences. Heuristics we see as a tool that supports and enhances intuition in decision-making processes. Mainly, those are simplified rules of thumb that guide decision-making, often used in complex situations, and can serve as a framework for intuitive judgments (D. Clark et al., 2023; Elms & Brown, 2013). While these heuristics can be beneficial, they may also lead to misjudgment (Burke & Miller, 1999), and it is important for business angels to realize the potential pitfalls of their impact on decision-making.

Finally, our findings in this chapter also point to the highlighted importance of relationship-based factors at the individual level, where we need to consider the person-environment fit hypothesis (Kristof-Brown & Guay, 2011; Markman & Baron, 2003; Van Vianen, 2018), which occurs at different hierarchical levels in the relationship, in this case between business angel and entrepreneur. In line with Markmann and Baron (2003), this means that business angels achieve optimal outcomes in their relationship with the entrepreneur when their personal characteristics and the entrepreneur's requirements match or fit together. Therefore, the role of context in this relationship between business angels and entrepreneurs (i.e., the person-environment fit hypothesis) is crucial as it helps to determine the compatibility between the personal characteristics of a business angel and the specific requirements of their relationship with the entrepreneur. Context includes various factors, as we can see from the results of our study, such as culture, values and respect. These contextual factors shape the expectations, further values and norms within a relationship between business angels and entrepreneurs, which in turn influences the preferences and behaviors of business angels. Our study shows that the culture and values of business angels in the context of person-environment fit play an important role in determining whether a business angel's personal values are aligned with those of the entrepreneur, leading to a better fit.

Furthermore, the reciprocity of relationships plays a crucial role in the person-environment fit hypothesis (Markman & Baron, 2003; Van Vianen, 2018). In our case it refers to the mutual exchange and influence between business angels and entrepreneurs within the relationship. In the context of the person-environment fit hypothesis, reciprocity means that both business angels and their entrepreneurs can shape and influence each other over time through their behavior, decisions, norms, expectations and attitudes. Reciprocity creates a positive cycle of mutual exchange (West et al., 2007) in which both business angels and entrepreneurs create patterns of positive exchange within their relationship. As our study shows, this ongoing cycle of reciprocal behavior between business angels and entrepreneurs

strengthens their emotional bond, creates reliability, generates goodwill, reduces uncertainty, and strengthens affective ties in the relationship, all of which contribute to a solid foundation of trust.

Building trust is crucial in the relationship between business angels and entrepreneurs as it creates a solid foundation for collaboration and mutual success and growth (Ding et al., 2015a; Lefebvre et al., 2022). With this study we also confirm previous findings that transparency is key to fostering trust (Bowey & Easton, 2007; Buell et al., 2017; Kanagaretnam et al., 2010), as both parties must be able to rely on their communication to be honest and open. Regular and meaningful conversations about challenges, opportunities and expectations can help to align goals and avoid misunderstandings. In addition, we also discover that reliability and integrity in all undertakings within the relationship are critical to building trustworthiness (Maxwell & Levesque, 2014). Building trust takes time and effort, but the benefits of a solid, reliable partnership between business angels and entrepreneurs are invaluable for long-term success and growth, creating a sense of understanding and respect between the business angel and the entrepreneur.

Another important aspect of building trust is active engagement and support (Cummings & Bromiley, 1996; Pollack et al., 2017; Uslander, 2018; Welter, 2012). Business angels can provide entrepreneurs with valuable advice, guidance and resources, demonstrating their commitment to the success of the business. Likewise, entrepreneurs should be receptive to feedback and willing to implement suggestions from their business angels to show their openness to collaboration and growth (Maxwell & Levesque, 2014; Uslander, 2018).

In addition to growth measures, trust can also be strengthened through shared values and a long-term vision for the partnership. When both parties are aligned in their goals and values, it fosters a sense of harmony and cohesion, which further solidifies trust in the relationship (Krishnan et al., 2006; Mayer et al., 1995; Zahra et al., 2006). Overall, building trust in the relationship between business angel and entrepreneur requires consistent effort, clear communication, and a genuine commitment to the success of the business. As trust grows, it forms the foundation of a strong and productive partnership and paves the way for mutual growth and success (Ding et al., 2015; Lefebvre et al., 2022).

### 3.5.1 Future research

To our knowledge, in the business angel decision-making literature, intuition does not gain visibility as it should. In this study, we discover its importance as an antecedent in business angel decision-making, but it would be useful to see how different levels of business angels' intuition impact their investment decision-making in different stages of venture contact. Along these lines, emotional intelligence is shown to be an important remark when business angels make their decisions, but it was largely neglected in the previous literature. Put simply, our study provides important evidence of some novel and/or underexplored individual-level factors that impact business angels' decision-making. To build upon our

study and to make new contributions to the theory of business angels, we establish a set of core propositions around which scholars can structure further, more comprehensive research:

**Proposition 1.** BAs' character-based individual-level factors align their character with their investment decision-maker role.

**Proposition 1a.** Business angels' intuition plays an important role in their decision-making and is not exposed only in the screening stage, but it impacts the decision-making throughout the venture endeavors with entrepreneurs.

**Proposition 1b.** Business angels' intuition comes from their previous experiences, which may be entrepreneurial, managerial, or investment experiences. The more experiences they have, the stronger heuristics will impact intuitive decision-making.

**Proposition 1c.** Business angels' intuition relies heavily on their personal values from their relationship with entrepreneurs. If those values are not aligned, the intuition to not make investment decisions is revoked.

**Proposition 1d.** In the investment appraisal stage, high levels of business angels' emotional intelligence can result in their decision to reject the appraisal.

**Proposition 1e.** The longer business angels stay within the investment, the harder it is for them to make an exit, as emotional intelligence is strongly impacted by trust and values.

**Proposition 2.** Business angels' experience-based individual-level factors impact the way they make their investment decisions.

**Proposition 2a.** The more entrepreneurial, managerial and investment experiences business angels have, the more their future decision-making will be aligned with those previous experiences.

**Proposition 2b.** Previous experiences are antecedents of business angels' skills and competencies, guiding them through their decision-making and/or future venture endeavors with entrepreneurs.

**Proposition 2c.** Prior experience with venture investments contributes to business angels' risk assessment skills as they learn to evaluate potential risks in the context of different opportunities and develop a clearer understanding of their risk tolerance.

**Proposition 2d.** Business angels' personal and business experiences contribute to developing problem-solving skills and anticipating possible outcomes. These experiences help them to evaluate opportunities better and make informed decisions.

**Proposition 2e.** Business angels' ability to draw on past experience provides a valuable foundation for strategic planning and enables them to adapt and respond effectively to new challenges and opportunities.

**Proposition 3.** Business angels' relational-based individual-level factors determine the pre-investment decision-making and post-investment relationship quality with an entrepreneur.

**Proposition 3a.** Business angels' level of investment in ventures with different cultures is lower with the broader difference in cultures because of the nature and frequency of contact. The more close and frequent the relationship, the higher the chance of making investment decisions.

**Proposition 3b.** Business angels' cultural factors shape different values in the social structure where they respect hierarchy. The more similar social structures between business angels and entrepreneurs, the more likely their relationship will be stronger.

**Proposition 3c.** Business angels expose respect towards their entrepreneurs but also seek one in turn. When there is no respect from the entrepreneurs' side, BAs are unlikely to show respect, and in consequence, the investment decision will not be made.

**Proposition 3d.** If business angels respect their entrepreneurs and receive respect in turn, the trust in their relationship will be stronger for the higher levels of respect.

**Proposition 3e.** The more trust business angels expose towards their entrepreneurs, the stronger the final investment decisions are, and the future relationship with the entrepreneur becomes stronger. In turn, this affects the quality of a relationship, especially where shared goals are at stake.

### 3.6 Conclusion

We aimed this study to uncover the true meaning of business angel decision-making in their relationship with entrepreneurs, where we focus on their pre-investment stage. We approach this goal through phenomenological inquiry, namely 16 in-depth phenomenological interviews with European business angels. As a result of our study, we deepen the understanding of business angel decision-making by compiling three sets of individual-level factors that impact how business angels make their decisions: character-based, experience-based and relational-based factors. Within these three sets of individual-level factors, we uncover three specific novel factors, namely intuition, emotional intelligence and respect, which are important antecedents of business angel decision-making but were neglected in previous research. In line with previous research, our findings also highlight the importance of trust, culture, vision and experience in business angel decision-making.

### 3.6.1 Limitations of study

Here, we need to point out some limitations that need to be considered but that arise from our study. First, we must mention the limiting nature of Interpretative phenomenological analysis. Even though interpretative phenomenological analysis generates rich and detailed data, on the other hand, it involves a high degree of subjectivity in the interpretation of the data, which involves our own perceptions as researchers when we uncover the story behind the subject under study. Another disadvantage of Interpretative phenomenological analysis is its time-consuming nature (J. Smith & Fieldsend, 2021). We note that our study took more than a full year to complete and was conducted under challenging economic conditions (before and during the COVID-19 pandemic), so our data may have been influenced by various conditions that we are unable to capture in this study. Even if the individual-level factors are not stable over time, they might have a different meaning for our participants under different time conditions.

What we also find limiting is the snowball sampling in this study. Even though it is beneficial when studying populations that are difficult to reach (Atkinson & Flint, 2001; Goodman, 2011; Neergaard, 2007), just as in our case, this raises some important questions about bias. Since we recruit our participants through referrals and we believe it is much easier to build trust and an interpersonal connection to obtain honest data, we find it hard to imagine that our participants did not share their thoughts on our research study before we proceeded with the interviews due to their familiarity. We find that this skews our data to some degree, but we cannot be sure how much. Since these chains of referrals come mainly from conversations with other participants, we could also speak of saturating our data too early. They usually refer to other business angels and contact them immediately, which means that these referred business angels are somehow important to them and are part of their network. It also means that they might have a similar influence on our results, i.e., they might share the same values, have similar experiences, and be surrounded by similar or even the same entrepreneurs, maybe even involved in the same relationship experiences.

As another limitation, we see the lexical inconsistency (Easton et al., 2000; Watson, 2006). This is mainly since the majority of our participants are not experts in the academic field and, therefore, often use terms which in one case have a similar theoretical meaning but, in other cases, a completely different one. This is probably the most challenging limitation of our study, as we have to be extremely careful when interpreting the data and focus on the small parts of the interviews to decipher the meaning.

As far as methodological limitations are concerned, we must emphasize the deeply rooted subjectivity of the interpretative phenomenological analysis approach. Interpretative phenomenological analysis fundamentally embraces subjectivity as a core aspect of this method and treats it not as a limitation but as an important resource for deepening the understanding of personal experience. However, a potential problem can arise when our subjectivity as researchers influences the interpretation and analysis of the data due to our

own biases, beliefs, and preconceived notions that shape the final results and conclusions we draw from the study. To mitigate this problem of subjectivity, researchers should actively engage in reflexivity where possible. This means that researchers reflect on their own positions and biases throughout the research process and are aware of and acknowledge their own subjectivity. This self-awareness of researchers allows them to make refined and supportive interpretations while analyzing the data (Alase, 2017; Giorgi, 2011; Fréchette et al., 2020). Where possible, multiple researchers should be involved in data analysis to reduce the impact of individual researcher subjectivity and incorporate different perspectives on the same data (Alase, 2017). Another potential source of subjectivity in interpretative phenomenological analysis is the researcher's interpretation and elaborated meanings of participants' lived experiences (Fréchette et al., 2020). To address this problem, researchers must strive for transparency and include all and multiple excerpts or quotes from participants' interviews to provide a comprehensive and diverse account of their experiences (Neubauer et al., 2019). Overall, the problem of subjectivity in interpretative phenomenological analysis emphasizes the importance of reflexivity, multiple perspectives, and transparency to ensure a more accurate and unbiased understanding of participants' experiences (Fréchette et al., 2020). The issue of subjectivity in interpretative phenomenological analysis can potentially influence the interpretations and representations of participants' experiences, necessitating the need for reflexivity, multiple perspectives, and transparency in the research process (Neubauer et al., 2019). In summary, the issue of subjectivity in interpretative phenomenological analysis reminds researchers that they need to be aware of their own biases and preconceived notions in order to minimize their influence on the analysis and interpretation of participants' experiences (Alase, 2017; Fréchette et al., 2020).

#### **4 THE ROLE OF TRUST IN ACHIEVING RELATIONAL RENTS IN BUSINESS ANGELS' INVESTMENTS**

In Chapter 3, we discuss in detail the business angels' individual-level factors in business angel decision-making. We uncover the story of business angel investment decision-making and what personal factors are at the heart of this phenomenon. Among other things, we discover the importance of relation-based factors in business angel investment decision-making. We know that business angels inject capital into ventures and thus participate in a nuanced social exchange that is essential for economic progress. This complex process involves exchanging information, sharing knowledge and skills from their previous experiences, building relationships of trust, and the potential impact on business success. In return, business angels receive a financial reward through returns on their investment in certain entrepreneurial ventures. In a broader sense, this synergistic relationship between business angels and entrepreneurs is more than an ambidextrous and socially embedded phenomenon. It is about the relationship between the business angel and the entrepreneur, which, if successful, results in relational rents that benefit both parties. Thus, in this chapter,

we look at this relationship through the lens of social exchange theory and investigate the business angel's perspective of the achieved relational rents of an investment based on trust in the investee and amendments needed to sustain the investment (known as relational specific investments). We present a quantitative study encompassing 139 business angels and build on the qualitative phenomenological study. We adopt a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examine the determinants of organizational success in achieving relational rents viewed through the business angel's perspective. We do so by looking at different stages of a venture's life cycle and uncover that relational rents are higher when business angels apply relation-specific investments in ventures at scalability and exit stages than investments in ventures needing proof of concept, technology, or business.

#### **4.1 Introduction**

Investment in entrepreneurial ventures is at the heart of business angel activities, and the alliance between a business angel and an entrepreneur aims to generate economic growth from early-stage entrepreneurial finance. Every year, we see more and more scholarly contributions to this area in a more general sense (Arthurs & Busenitz, 2003; Blaseg & Hornuf, 2023; Bonnet et al., 2022; Fairchild, 2011; Gregson et al., 2017; Herrmann et al., 2016; Macht & Robinson, 2009). The majority of studies contribute to our understanding of how agency theory can inform the study of the relationship between business angels and entrepreneurs (Avdeitchikova & Landström, 2022; Colombo et al., 2023; Wesemann & Antretter, 2023). For example, Kelly and Hay (2003) examine the influence of various factors on the form of contracts in the business angels and entrepreneur relationship, while Van Osnabrugge (2000) compares the investment procedures of business angels and venture capitalists, highlighting differences in their approaches to mitigating agency risks in the relationship with entrepreneurs.

However, no studies have explored the alliance synergies between business angels and entrepreneurs as a social relationship. This is surprising since both business angel and entrepreneur disclose their individual factors, and investment becomes a financial transaction and a manifestation of trust, shared vision and mutual commitments. Their relationship is evidence of exchange reciprocity within different forms (e.g., financial, social and human capital exchange). The conceptual framework for the most similar relationship where financial assets are involved in a "mutually beneficial relationship when forming a new venture" is given by De Clercq and Sapienza (2001). Their conceptual framework positioned the relationship between venture capitalists and entrepreneurs at the heart of the social exchange theory (De Clercq & Sapienza, 2001). Although the relationship between business angel and entrepreneur has some resemblance to relationship between venture capitalist and entrepreneur, such as those documented in the entrepreneurship literature (Harrison & Mason, 2000; D. K. Hsu et al., 2014; Mason & Stark, 2004; Osnabrugge & Robinson, 2000; Politis, 2008; K. Wilson & Reimsbach-Kounatze, 2011), the relationship

between business angel and entrepreneur has several features that make these two investor types fundamentally different.

Business angel investments go beyond financial support and include a belief in the entrepreneur's capabilities, innovation potential, and commitment to long-term success (Mason & Harrison, 2000; Mason & Stark, 2004). In return, the entrepreneurs commit to using the invested capital wisely, implementing strategic plans, and maintaining open communication (De Noble, 2001; Parhankangas & Ehrlich, 2014). This exchange of trust and commitment is critical as specific investments in time, knowledge, and resources become core to the relationship (Cardon et al., 2017; Falcão et al., 2023; Lefebvre et al., 2022; Prowse, 1998). As the business evolves through the various stages of growth, the nature of these investments adapts to both parties' changing needs and aspirations. This shared journey highlights the sophisticated social exchange that defines the relationship between business angels and entrepreneurs in early-stage entrepreneurial finance. From the business angels' perspective, in this study, we observe their relationship with entrepreneurial ventures in the post-investment stage in the context of relations employment. From the Social exchange and relational view, we observe this give-and-take dynamic where business angels seek to maximize rewards in their relationship with entrepreneurs in creating a sustainable and profitable venture (Dutta & Khurana, 2023; Huang & Knight, 2017; Madanoglu, 2018).

The aim of this study is two-fold. Our first contribution is to complement the business angel literature by shifting the perspective from the agent-principal relationship based on monitoring activities and ownership incentives (i.e., agency theory perspective) to the synergetic dyad perspective of reciprocity and trust (i.e., social exchange theory) in examining the determinants of relational rent creation in the relationship between business angel and entrepreneur. In this way, we provide new insights into the emergence of synergetic relationships between business angels and entrepreneurs. Our theoretical model assumes that trust and relation-specific investments build relational rents, but this relationship depends on the venture growth stage. Second, we empirically test our proposed hypothesized model of relational rent creation in the relationship between business angels and entrepreneurs and provide empirical evidence of the role of trust and relation-specific investments in building relational rents based on a sample of 139 business angels across Europe.

## **4.2 Theoretical background and hypotheses development**

A balance of contributions and benefits characterizes business angel's and entrepreneur's ongoing interaction and collaboration. Hence, it exemplifies the essence of a social exchange process in the realm of entrepreneurial venture financing and mentorship. In this social exchange framework, both business angel and entrepreneur contribute resources and receive benefits in return. Business angels invest financial capital, industry knowledge and valuable

networks, while entrepreneurs provide the business concept, innovation, and commitment to drive the venture forward. We conceptualize the relationship between a business angel and an entrepreneur rooted in mutual benefits and reciprocity as a social exchange process and place it in the heart of social exchange theory.

#### 4.2.1 Relational view on the social exchange relationship between business angel and entrepreneur

Business angels play an important role in the entrepreneurial ecosystem by providing critical financial support, mentorship, and strategic advice to entrepreneurial ventures. Even if the most common reasons for business angels to invest are positive and overwhelming investment returns (Riding et al., 2007; Sudek, 2006) and an overall business opportunity (Feeney et al., 1999; Mason, 2008; Yitshaki, 2008), evidence suggests that in post-investment stage business angels are actively engaged in the businesses they invest, either through taking hands-on-roles in the ventures or through monitoring investments (Freear et al., 1995; Harrison & Mason, 1992). There is evidence that returns on investments made by business angels are significantly higher than those made by non - angels, particularly because of the nature of their personal involvement (Haar et al., 1988; Mason & Harrison, 2002; Riding, 2008). When entering into a new business, business angels dispose entrepreneurial ventures with their “own unique motivations, intentions, experience and personality” (Collewaert, 2012), along with their money, time, knowledge and social networks (Freear et al., 1994; Mason, 2008; K. Wilson & Reimsbach-Kounatze, 2011).

The ultimate goal of business angel operations are investments in entrepreneurial ventures with profitable outcomes (Dibrova, 2015; Ramadani, 2009). In that sense, business angels provide financial support and strategic guidance to their entrepreneurs in exchange for equity ownership in the entrepreneurial venture (Argerich et al., 2012; Busenitz et al., 2017). Their role goes even beyond financial inputs in the entrepreneurial venture. It involves sharing experiences and expertise and giving entrepreneurs access to their personal and professional networks (Bonini et al., 2019; Bonnet et al., 2022; Forrester et al., 2020). Accordingly, the entrepreneur gains financial funds, strategic insights and mentorship (Botelho et al., 2023; Hanak, 2020). In this ongoing process, business angels find satisfaction in supporting and potentially profiting from a promising venture in the form of a return on their investment.

The ongoing relationship between business angel and entrepreneur is crucial to whether a venture is successful or not (Amatucci & Sohl, 2004; Collewaert, 2016; Herrmann et al., 2016). Business angels stand alongside entrepreneurs by offering financial and general business support in their early stages of development (Botelho et al., 2023; Boulton et al., 2019; Collewaert, 2016; Mason, 2016; Söderblom et al., 2016). Moreover, business angels' previous entrepreneurial, managerial and investment experience, as we uncover in our Chapter 3, assists them in playing their mentoring role to new entrepreneurs, especially by sharing a link to their professional network. Previous studies highlight the role of mentors in

guiding and supporting aspiring entrepreneurs, as well as the significance of building strong networks for accessing resources and opportunities in the entrepreneurial journey (Arthur & Hisrich, 2011; Balachandra et al., 2015; Hisrich, 1990; Tye & Gillin, 2004). Business angels with stronger and more developed networks have higher success rates with their ongoing entrepreneurial investments (Butticè et al., 2021; Bygrave, 1987; Lahti & Keinonen, 2016) as well as in exiting their investments (Carpentier & Suret, 2015; Mason & Botelho, 2016; Werth & Böert, 2011). The latter being especially important as we know that early-stage entrepreneurs backed up with better-connected business angels are more likely to receive subsequent funding from venture capitalists who come in place in the later stages of their entrepreneurial development (Capizzi, 2015; Werth & Böert, 2011).

For business angels, mentoring entrepreneurs is more than just providing business advices; it also means fostering strong and open relationships with their entrepreneurs. Successful mentoring creates an environment of trust and collaboration between business angels and entrepreneurs, leading to better communication and understanding of venture development goals and strategies (Bammens & Collewaert, 2014; Lefebvre et al., 2022; Minniti & Bygrave, 2001; Ozgen & Baron, 2007; St-Jean & Audet, 2009). Furthermore, mentoring relationships between business angels and their entrepreneurs can extend beyond the initial startup phase and continue to provide ongoing support as the venture evolves and faces new challenges. This continuity in the relationship between business angel and entrepreneur can be instrumental in navigating complex decisions, adapting to market changes, and seizing strategic opportunities (Deakins et al., 1998; McKeivitt & Marshall, 2015; Politis, 2016). Overall, this symbiotic ongoing relationship between business angel and entrepreneur could be a key to the success, growth and resilience of the venture and requires and calls for further investigation.

To recognize the venture success that results from the relationship between business angel and entrepreneur, previous studies rely heavily on agency theory, in which the principal assumes the role of the agent, to analyze venture success (Croce et al., 2023; Cropanzano et al., 2017; Lahti, 2009; Maus et al., 2023; Van Osnabrugge, 2000). However, some previous studies suggest that social exchange theory may be a more comprehensive approach and provide a better perspective on leveraging the relationship between business angels and entrepreneurs due to its' give-and-take nature (Dutta & Khurana, 2023; Huang & Knight, 2017; Landström, 2007; Sørheim, 2003; Q. Zhao et al., 2017). In the interaction between business angels and entrepreneurs, in addition to the traditional agency perspective of financial benefits, there are the non-financial benefits that business angels bring to the table, as we discussed earlier. By recognizing that effective relationships are not only based on the emotional connection between people but also include a social component (Cohen, 2004; Huang & Knight, 2017), social exchange theory provides a more comprehensive picture of the system of relationships between business angels and entrepreneurs. This allows specific strategies to be developed that promote trust, loyalty, and interaction within the venture and between business angel and entrepreneur. In line with the relational aspects of the

relationship between business angels and entrepreneurs (which are manifested in their psychological states, i.e., thoughts, feelings and emotions), the social exchange theory could also be used to interpret the course of the exchange process (Collewaert et al., 2021; Herrmann et al., 2016; Spigel, 2017).

In the relationship between business angel and entrepreneur, the application of social exchange theory offers a valuable perspective to understand and analyze the dynamics at play (Landström, 2007). Social exchange theory, first developed on a large scale by sociologists such as George Homans (Homans, 1958) and Peter Blau (Blau, 1964), serves to illuminate relationships by focusing on the exchange of social elements, which can be material and immaterial goods. At the heart of this theory is the observation that a relationship will persist if it provides more benefits than the loss of the relationship (Cook et al., 2013; Cropanzano & Mitchell, 2005; Homans, 1958). According to social exchange theory, social interactions are supported by reciprocity and rewards, with each interaction partner deriving benefits from the interpersonal relationships. Reciprocity is one of the most important concepts that is a must, because everyone who gives something receives it in return to keep the process in balance. In addition, trust and commitment also contribute significantly to the long-term quality of such relationships. Trust is a factor that reduces perceived risks and creates a bond by providing reliability and commitment, while the other party is certain about the long-term course of their business (Lambe et al., 2001; Malmström & Johansson, 2015; Mitchell et al., 2012).

In sum, social exchange theory offers a clarified and realistic viewpoint about the relationship between business angel and entrepreneur; taking into account the fact that it is a cooperative process, which requires exchanging trust, and reciprocity. Therefore, we conceptualize the relationship between a business angel and an entrepreneur as rooted in mutual benefits and reciprocity as a social exchange process and place it in the heart of social exchange theory.

#### 4.2.2 Trust ties in the relationship between business angel and entrepreneur

In an earlier Chapter 3, we note that trust is one of the most endorsed individual-level factors influencing business angel decision-making. We also find that trust has a dual potential alongside other factors – firstly, as a business angels' individual-level factor that “comes from within” and secondly, as a factor that arises from the relationship with the entrepreneur. In one of our future research propositions within previous Chapter 3, we highlight that the more trust business angels have in the relationship with entrepreneurs, the more successful that relationship becomes. Therefore, we cannot observe trust in isolation as both business angel and entrepreneur are tied through their social relationship. Rather, we should take into account its relational perspective in the post-investment trust-oriented behavior.

Previous studies in the business angel decision-making domain show that trust is a fundamental element in the stability of their relationship with entrepreneurs, and numerous

studies outline the antecedents and consequences of trust in different contexts (Ding et al., 2015; R. Harrison et al., 1997a; Lefebvre et al., 2022; Mason et al., 2017; Maxwell et al., 2011; Maxwell & Levesque, 2014; Sørheim, 2003; Van Osnabrugge, 2000b; White & Dumay, 2017). Nevertheless, less attention in the literature is paid to the issue of trust importance in the context of dyadic relationships between business angels and entrepreneurs, which occurs in the post-investment stage. Emerging research suggests that trust is the crucial factor in venture relationships between business angels and entrepreneurs, with both parties benefiting from its presence (Amatucci & Sohl, 2004; Harrison et al., 1997; Harrison et al., 2015; Riding et al., 2007; Sudek, 2006; White & Dumay, 2018).

When business angels and entrepreneurs consistently demonstrate integrity, act honestly, do not harm each other's interests, and foster mutual respect; this forms a strong trust foundation of resilient relationship (Abonil et al., 2024; Conz et al., 2023; Elfring & Hulsink, 2019; Mason, 2022). From our earlier qualitative study in Chapter 3, we know that trust in a relationship results from shared values between business angel and entrepreneur, along with their individual integrity. Previous studies define integrity as adherence to ethical and moral principles (Amatucci & Sohl, 2004; Van Osnabrugge, 2000) and acting honestly, with a sense of benevolence being specific to venture relationships (Boersma et al., 2003; Pollack et al., 2017; Strätling et al., 2012). Entrepreneurs who receive funding from business angels exhibit a larger number of trust-building behaviors and less unintentional trust-damaging behavior (benevolence) (Fairchild, 2011; Maxwell & Levesque, 2014), which establishes common ground with business angels and is crucial for building trustworthy relationships (Sørheim, 2003).

Previous studies also argue that benevolence-based trust comes from the expectation that another person or group will not take undue advantage of the other party even when the opportunity arises or at least will not knowingly harm the other party's interests (Pollack et al., 2017; Svare et al., 2020; Welter, 2012). This argument is consistent with the expectation of fairness and non-malice in a relationship (Bromiley & Cummings, 1989; Haugland et al., 2021; Mayer et al., 1995; Muthusamy & White, 2005).

In our specific relational context between business angels and entrepreneurs, we conceptualize benevolence as the motivation for why business angels and entrepreneurs do anything at all (Middelhoff et al., 2014; Zhang et al., 2023). When business angels begin their relationship with entrepreneurs, they expect that entrepreneurs will not take advantage of their relationship (Lindsay, 2004; Macht & Robinson, 2009; Ramadani, 2009). Building on the previous studies, we argue that the relationship between business angels and entrepreneurs is based on benevolent trust. In line with previous studies, we define it as the expectation of fairness and non-malice in a relationship between business angel and entrepreneur, which is essential for creating mutually beneficial venture performance in terms of successful venture viewed as relational rents (Ferguson et al., 2016; Li et al., 2013; Yitshaki, 2012; Zahra et al., 2006). Consistent with recent business angel and management research, we conceptualize relational rents as the performance of a joint venture (Capizzi,

2015; De Clercq & Sapienza, 2001; Herrmann et al., 2016). So, regarding the effect of trust on the joint venture performance as the relational rents, we hypothesize:

**Hypothesis 1:** Trust is positively associated with the relational rents.

#### 4.2.3 The mediating role of relation-specific investments to the relationship between business angel and entrepreneur between trust and relational rents

The relationship between a business angel and entrepreneur comes down to tangible and intangible business angel assets invested in the relationship. Sharing intangible assets in the relationship between business angel and entrepreneur is widely explored in the entrepreneurship literature (Capizzi et al., 2022; Mason et al., 2021). In some studies, previously gained knowledge is a part of shared social capital in this relationship (Sørheim, 2003). To build a new venture, a business angel's knowledge of management policies, networks, their education and previous experience, particularly within the same industry, are a valuable commodity (Harrison et al., 2015; Mason et al., 2016; Prowse, 1998; Saetre, 2003).

From the Social exchange perspective, we know that common assets have to be shared or adjusted meaningfully to satisfy the needs of a specific investment to receive a premium from that relation-specific investment in the future perspective (Cropanzano & Mitchell, 2005; Lambe et al., 2001; Malmström & Johansson, 2015; Viswanathan et al., 2014). In their relational view, Dyer and Singh (1998) outline relation-specific investments as assets tailored toward a specific alliance's needs (Dyer et al., 2018; Dyer & Singh, 1998; Kitamura et al., 2016). In the context of a relationship between business angels and entrepreneurs, they represent a business angels' non-re-deployable tangible and intangible assets specialized to optimally combine with the entrepreneurs' assets (Teece, 1986; Williamson, 1975) and generate the value and competitive advantage of the specific venture in the entrepreneurial ecosystem (Colombo et al., 2019), such as adjusting administrative, organizational or other internal procedures, committing time, money and other assets to fulfill the need of a specific investment.

These relation-specific investments represent the bidirectional exchange of social and financial resources between entrepreneurs and investors (Huang & Knight, 2017). If the alliance between the business angel and the entrepreneur is terminated (i.e. business angel records an exit), the value of the relation-specific investments is largely lost as they have much lower value in other alliances (Batt, 2003; Delbufalo, 2021; Kang et al., 2009).

We previously uncovered that the relationship between business angel and entrepreneur is about whether business angels have the best interests of their entrepreneurs at heart in their investments, along with their mentoring and strategic guidance, as well as sharing their network structures. So, if business angels are about to share their assets with their entrepreneurs and whether the relationship will be meaningful, they need to trust the

entrepreneur, as we explained earlier. Previous studies show that trust is positively associated with asset investments (Bammens & Collewaert, 2014; Ding et al., 2015; Harrison et al., 1997; Suh & Kwon, 2006), which need to be adjusted for each specific investment.

With previous definitions in mind, we define these relation-specific investments as the investments made by business angels in a relationship with their entrepreneurs that have value only within the context of that specific venture alliance (i.e., we denote the investment relationship in the entrepreneurial venture as the alliance between business angel and entrepreneur). These investments are tailored or customized to suit the particular characteristics, requirements, or expectations of the relationship between business angel and entrepreneur. In other words, these investments are highly specific and may not be easily transferable or adapted to other relationships, alliances, or situations.

In our view, we add upon that and state that the more the business angels trust their entrepreneurs, the more they are willing to make adjustments for specific investments. This is in line with findings from the qualitative study we present in Chapter 3, where our results suggest that trust is important for business angels, and the more trust there is in the relationship with entrepreneurs, the more they are willing to invest in the relationship with entrepreneurs. Our study ultimately found that this venture alliance goes beyond mere financial gains. This importance of business angels' trust in adjusting their investments within the relationship with their entrepreneurs is consistent with the existing literature. Previous scholars find that trust plays an important role in business angels' decision-making and influences both the decision-making stage through the likelihood of an investment and the success of the final relationship with the entrepreneur (Bammens & Collewaert, 2014; Fili & Grünberg, 2016; Lefebvre et al., 2022; Maxwell, 2016), as it improves information sharing and cooperation (Ding et al., 2015). Hence, we hypothesize that:

**Hypothesis 2a:** The greater the level of trust among business angels and entrepreneurs, the greater the relation-specific investments made by business angels in the venture.

We furthermore argue that the higher the level of relation-specific investments made by business angels, the stronger the alliance results. When efficiently utilized, relation-specific investments increase venture profitability, resulting in a more vigorous social exchange (i.e., the creation of relational rents). The more engagement from both parties in creating relation-specific investments, the greater the final joint venture outcome.

Relation-specific investments should be tailored to a specific alliance between business angel and entrepreneur, and the boundaries of the alliance should be determined by the specific investment made by the alliance, the benefits created and the costs of leaving the alliance (Colombo et al., 2019; De Clercq & Sapienza, 2001). Hence, better alliance adjustments lead to a higher investment performance. Thus, we hypothesize:

**Hypothesis 2b:** The greater the level of relation-specific investments made by business angels in the entrepreneurial venture, the greater the creation of relational rents.

Additionally, we suggest that relation-specific investments will mediate the relationship between trust and relational rents. Although we expect a direct relationship between trust and relational rents (as explained under hypothesis H1), we also expect that trust will foster more adjustments to make the specific investments work, increasing relational rents. Therefore, we hypothesize:

**Hypothesis 3:** Relation-specific investments mediate the relationship between trust and relational rents.

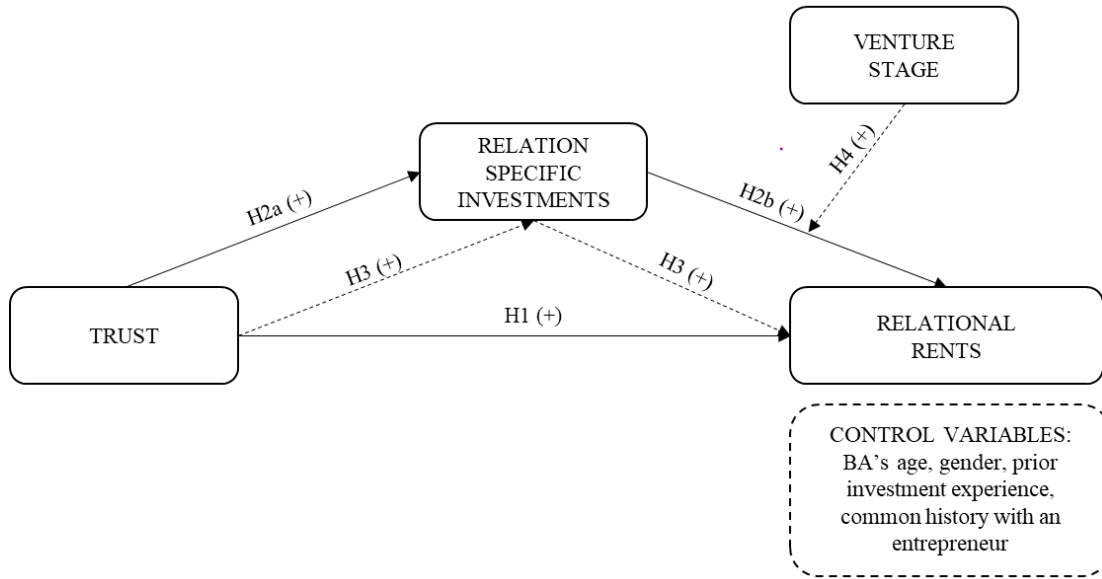
#### 4.2.4 The moderating role of the venture development stage on the relationship between relation-specific investments and relational rents

In the early stages of entrepreneurial venture development, specific investments are predominantly centered around the entrepreneur's visionary pursuits and the foundational development of a viable technology, product, or service. Entrepreneurs dedicate considerable time and effort to refine their business concepts, create prototypes, provide proof of technology, and navigate the uncertainties inherent in the early startup phase, with business angels often offering crucial initial funding. As the venture progresses into the development stage, specific investments shift towards operational scalability, reflecting the need for entrepreneurs to expand production, augment their teams, or enter new markets. Business angels recognize the potential for growth and may intensify their investments to support these expansion efforts. In the maturity stage, specific investments are geared towards market consolidation, with entrepreneurs focusing on maintaining and solidifying their market position through strategic initiatives, such as marketing campaigns or technology upgrades. Throughout these stages, business angels continue to play a pivotal role by supporting targeted investments that align with the venture's evolving needs. In the exit stage, specific investments become instrumental in maximizing the venture's value, encompassing efforts to streamline operations, optimize financial performance, and prepare for potential acquisition or an initial public offering. The dynamic interplay between entrepreneurs and business angels, characterized by strategic and tailored investments, reflects the nuanced evolution of specific investments across different growth stages. This discussion brings us to propose that in later stages of venture development (i.e., scalability and maturity for exit) compared to earlier stages of venture development (i.e., proof of concept, proof of technology and proof of business), adjustments for a specific investment will enhance relational rents in a relationship between business angel and entrepreneur.

**Hypothesis 4:** The entrepreneurial venture development stage moderates the relationship between relation-specific investments and relational rents such that the effects of relation-specific investments on relational rents are stronger for later stages of venture development than for nascent stages.

In line with our hypotheses, we propose the following model for further statistical analysis as we show in Figure 13.

*Figure 13: Conceptual model*



*Source: Own work.*

## 4.3 Methodology

### 4.3.1 Data and sample

To test the proposed conceptual model, we collect data among business angels across Europe through an online questionnaire in QuestionPro.com. We developed the questionnaire based on recommendations for survey design by Dillman and colleagues (2014) and Callegaro and colleagues (2015). In March 2022, we send our questionnaire to all business angels in our private database as well as to all European business angel networks and European Business Angel Network and ask them to forward the link to the questionnaire to their members or other business angels. We contact some business angels directly via the LinkedIn.com platform. A cover letter was sent to business angels along with the questionnaire we present in Appendix 3 and 4, respectively.

We received 139 responses, which form the basis for our statistical analysis. The composition of our sample is as follows: 33,8% of respondents are female and 66,2% are

male. On average, 30,9% of respondents have a bachelor's degree, 51,1% have a master's degree, 5% of respondents have a professional degree and 12,9% have a doctorate. The average age of the respondents is 48,4 years, with the youngest business angel being 35 years old and the oldest 69 years old. Regarding age composition, 8,6% of respondents are under 39 years old, while 54% are between 40 and 49 years old. 25,9% of respondents are aged between 50 and 59, and 11,5% of respondents are over 60. Detailed statistics on the sample we provide in Table 12, and the distribution of survey responses by regions and countries we provide in Table 13.

*Table 12: Sample statistics*

	Within the sample		Within the region		Total for the sample
	Eastern*	Western**	Eastern*	Western**	
<b>Gender</b>					
Female	7,9%	25,9%	37,9%	32,7%	33,8%
Male	12,9%	53,2%	62,1%	67,3%	66,2%
<b>Age</b>					
30 - 39 years old	0,7%	7,9%	3,4%	10,0%	8,6%
40 - 49 years old	13,7%	40,3%	65,5%	50,9%	54,0%
50 - 59 years old	4,3%	21,6%	20,7%	27,3%	25,9%
60 - 69 years old	2,2%	9,4%	10,3%	11,8%	11,5%
<b>Education</b>					
Bachelors	7,2%	23,7%	34,5%	30,0%	30,9%
Masters	10,8%	40,3%	51,7%	50,9%	51,1%
Professional	0,7%	4,3%	3,4%	5,5%	5,0%
Doctorate	2,2%	10,8%	10,3%	13,6%	12,9%

Note: N=139, \*N=29; \*\*N=110.

*Source: Own work.*

Before the statistical analysis, we check our data for missing values, incomplete cases and inconsistencies. There are no missing values as we restrict the survey by default to proceed to the next set of questions when all previous questions have been answered.

We also check the single respondent cases in our data set for inconsistencies. We do this by checking whether the respondents' previous investment experience can be reconciled with their age. To do this, we calculate an additional variable (Age-PIE) in IBM SPSS Statistics (version 27). As we have mentioned, the average age of our respondents is 48,4 years and the average previous investment experience mean is 9,6 years. The mean value of the recalculated Age-PIE variable is 39, so we include all 139 cases in further analysis as there are no inconsistencies.

Table 13: Distribution of survey responses by regions and countries

Eastern Europe*						Western Europe*												
	HR	EE	LT	SI	TOTAL EASTERN EUROPE	AT	BE	DK	FI	FR	DE	IT	LU	PT	ES	CH	TOTAL WESTERN EUROPE	
Total responses	9	13	1	6	29	5	6	12	14	3	19	16	7	16	9	3	110	
Total population**	66	308	253	110	737	495	550	385	825	6.050	8.250	660	143	550	308	330	18.546	
Share of total population (in %)	14%	4%	0%	5%	4%	1%	1%	3%	2%	0%	0%	2%	5%	3%	3%	1%	1%	
Responses eligible for further analysis	9	13	1	6	29	5	6	12	14	3	19	16	7	16	9	3	110	
Mean years of experience as a business angel	11	10	10	9	10	11	10	10	10	14	9	10	10	10	8	6	10	
Mean total number of investments per angel	10	9	20	9	12	16	11	9	12	12	9	12	10	10	9	7	11	
Mean number of exits per angel	3	4	15	1	6	4	4	5	7	4	3	7	5	5	3	2	4	
Mean total length of observed relationship with entrepreneur (in years)	4	3	5	3	4	4	3	4	3	6	3	4	4	3	4	3	4	

Note: Country codes according to ISO 3166 (HR – Croatia, EE – Estonia, LT – Lithuania, SI – Slovenia, AT – Austria, BE – Belgium, DK – Denmark, FI – Finland, FR – France, DE – Germany, IT – Italy, LU – Luxembourg, PT – Portugal, ES – Spain, CH – Switzerland). \*Total population is estimated by European Business Angel Network (EBAN, 2023), and has to be taken with caution as not all business angels are registered within business angel databases. \*\*Classification upon International Institute for Management Development (IIMD) world competitiveness.

Source: Own work.

#### 4.3.2 Measures

We measure all theoretical concepts from our conceptual framework using a multiple-indicator approach, where each construct was measured with multiple indicators as a reflective latent variable. Our dependent variable are relational rents. Measuring relational rents in business angel venturing is a challenge. Even though the literature suggests that relational rents can be measured as profits, while we could use financial measures of investment profitability, we opted for the reflective measurement approach as used in previous studies (Hill & Birkinshaw, 2008; Shenkar & Reuer, 2006; Weber et al., 2016). Our underlying reason for such an approach is that we have hard-to-reach respondents who are not keen to share their financial data. Thus, we asked respondents to rate the alliance's financial performance (Lambe et al., 2002) through 6 items on a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". The internal consistency measured through Cronbach's alpha is 0.96.

Our independent variable is trust, which we measure through the benevolence-based trust scale adapted from Muthusamy and White (2005). It relies on the theoretical perspective by Mayer and colleagues (1995), who describe trust in a relationship in terms of the trustee's ability, benevolence and integrity, which fits our context. With 5 items on a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree" we capture the extent to which business angels feel that the entrepreneur would not intentionally harm their interests. The internal consistency measured through Cronbach's alpha is 0.90.

We also measure the mediating variable relation-specific investments, reflecting investments dedicated to the dyadic relationship (Haugland et al., 2021). With 5 items on a 5-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree" we capture the extent to which business angels make internal adjustments to deal with entrepreneurs and the investments they make in assets or debt and capital dedicated to this particular relationship. The internal consistency measured through Cronbach's alpha is 0.87.

We also ask participants to indicate the stage of observed entrepreneurial venture development when they were first involved with them. We use the question from the official European Business Angel Network survey (EBAN, 2023), which asks respondents to rate whether the entrepreneurial venture was in the stage of proof of concept, proof of technology, proof of business, scalability stage or mature for exit. We constructed a binary variable in which a value of zero was attributed to the early stages of a venture in which a proof of concept, technology or business was in place, and a value of one for those ventures in the scalability and maturity stages. The logic behind this categorization is in the ease of explaining the potential moderation effects and in the depiction of the differences in the relationship between relation-specific investment and relational rent when comparing investments in a venture at its earlier stages and its later, more mature stages, as we suggested there might be substantial differences.

Additionally, we incorporate several control variables in our study, including business angels' gender, age, prior investment experience, observed relationship duration and common history with observed entrepreneurs. We associate relationship duration with relationship learning, as it may take time for partners to develop trust and make relationship-specific investments (Kotabe et al., 2003; Schildt et al., 2012). We measure relationship duration as the number of years the partners have cooperated (Haugland et al., 2021). We measure common history through two variables: "With at least one of my founding partners, I've already worked together before founding the company." and "With at least one of my founding partners, I had a friendly relationship before founding the company." as used in (Khan et al., 2014). Moreover, past knowledge, reported reputation and frequency of personal interactions can create perceptions about individuals (Johnson & Grayson, 2005; Lewis & Weigert, 1985), which in turn impacts the relational rents. We measure prior investment experience through two variables from De Clercq and Sapienza (2005) but adapt it to the context of business angels.

We also employ a marker variable as a theoretically unrelated construct in the model. We use the scale for affinity to color blue (Miller & Simmering, 2022) as a marker variable. High correlation among any of the principal constructs and this marker variable indicates common method variance (Lindell & Whitney, 2001), which we statistically analyze in our model.

## 4.4 Statistical analysis and results

### 4.4.1 Reliability and common method variance

We perform a scale reliability analysis of the measurement scales in IBM SPSS Statistics (version 27) and report the results in Table 14. In Appendix 4, we show complete item scales along with individual item loadings.

*Table 14: Measurement instrument scale reliability*

Latent variable (original scales)	Number of items	Cronbach's Alpha	Mean	Variance	St.dev.
Relational rents	6	0.947	22.78	23.551	4.853
Relation-specific investments	5	0.770	16.96	13.056	3.613
Trust	5	0.738	19.49	4.295	2.072
Marker variable	7	0.950	27.47	22.657	4.760

*Source: Own work.*

We examine the common method variance in the confirmatory factor analysis to observe for dimension analysis convergent and discriminant validity (Podsakoff et al., 2003; Tehseen et al., 2017). We follow steps proposed by Williams and colleagues (2010) and use a marker

variable which we treat as a specific bias construct and covary it with other latent factors (Miller & Simmering, 2022). Following this method, in the unconstrained model (Method-U), we encounter the common method variance being the same for all indicators. The fully restricted model is not significantly different from the constrained model which shows that the common method variance does not skew the relationships among the latent variables and no common method variance is present. The common method variance test results we show in Table 15.

*Table 15: Common method variance test*

Model <sup>3</sup>	$\chi^2$ (df)	CFI	RMSEA(90% CI)	SRMR	LR of $\Delta\chi^2$	Model comparison
CFA with marker	593.071 (305)	0.919	0.083 (0.073   0.093)	0.066		
Baseline	600.576 (324)	0.922	0.079 (0.069   0.088)	0.086		
Method-C	598.875 (323)	0.922	0.079 (0.069   0.088)	0.079	1.701, $df = 5$ ; $p = 0.192$	vs. Baseline
Method-U	578.23 (304)	0.923	0.081 (0.071   0.091)	0.064	20.645, $df = 1$ ; $p = 0.418$	vs. Method-C
Method-R	578.36 (314)	0.925	0.078 (0.068   0.088)	0.064	0.130, $df = 10$ ; $p = 0.999$	vs. Method-U

Note: CFA = confirmatory factor analysis; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; LR = likelihood ratio test; U = unconstrained; C = constrained; R = restricted.

*Source: Own work*

Our results imply that there is no evidence of shared common method variance between the indicators of latent variables and the latent marker variable.

#### 4.4.2 Convergent and discriminant validity

We analyze convergent and discriminant validity as we need to establish the accuracy and uniqueness of our measurement scales and provide evidence for the robustness of our proposed constructs. By examining convergent validity, we see the degree to which items pertaining to the same measurement scale that are theoretically expected to be related do indeed load on the intended factor. A commonly accepted threshold for convergent validity are item loadings above 0.5 (Hu and Bentler, 1999). On the other hand, by analyzing discriminant validity, we examine the extent to which each measurement scale is distinct from other measurement scales in our survey, with a suggested threshold of correlation coefficients below 0.85 to ensure differentiation (Rönkkö & Cho, 2022). We also check discriminant validity by comparing the average variance extracted of each measurement scale with the correlations among the focal measurement scale and all other measurement

<sup>3</sup> Note: CFA = confirmatory factor analysis; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; LR = likelihood ratio test; U = unconstrained; C = constrained; R = restricted.

scales. Values of average variance extracted above the values of correlations of the pairs of constructs under investigation show adequate discriminant validity (Hair et al., 2009). The results reported in Table 16 show adequate discriminant validity.

*Table 16: Descriptive statistics, correlations and square roots of average variance extracted*

Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Trust	3.888	0.505	<b>0.761</b>							
2. Rel. spec.invest.	3.473	0.818	0.252**	<b>0.759</b>						
3. Rel. rents	3.842	0.807	0.165	0.432**	<b>0.897</b>					
4. Venture stage	0.158	0.366	-0.005	0.129	0.036	<b>0.897</b>				
5. Age	1.403	0.805	-0.034	0.063	0.114	-0.070	/			
6. Gender	0.662	0.475	-0.069	-0.112	-0.023	0.102	-0.020	/		
7. Prior inv.exp.	1.281	0.817	-0.057	0.150	0.055	-0.004	0.477**	-0.034	/	
8. Com. history	0.086	0.225	-0.125	-0.027	-0.072	-0.035	0.027	-0.132	-0.014	/
9. Rel. duration	0.137	0.345	0.147	0.212*	0.177*	0.000	0.166	-0.070	0.300**	-0.013

Notes: N = 139; \*\* p < 0.01; \*\*\* p < 0.001. All effects are two-tailed tests. Square roots of average variance extracted are on the diagonal. SD = standard deviation.

*Source: Own work*

#### 4.4.3 Model fit analysis

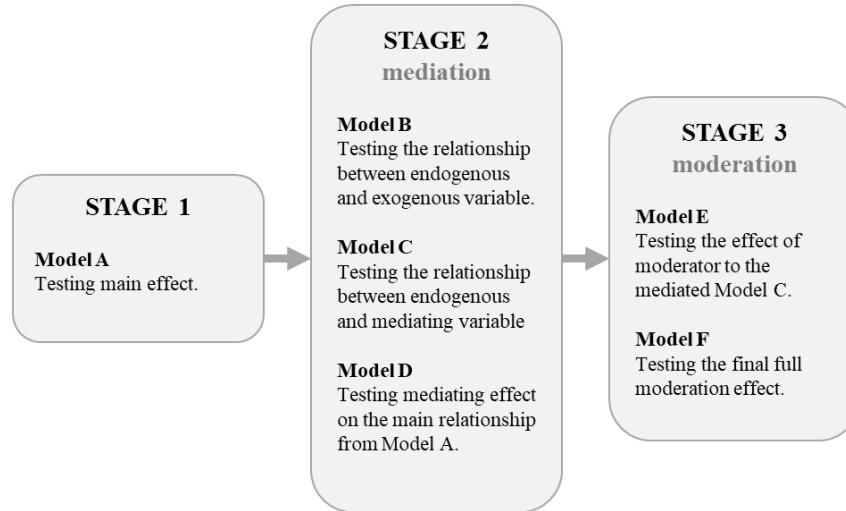
We ran a confirmatory factor analysis on the measurement and structural model. In examining our final measurement model, we used the following goodness of fit indices: comparative fit index (CFI), root mean square approximation (RMSEA) and standardized root mean square residual (SRMR). The values of the fit indices of the final model prior to hypotheses testing with correlations among the variables under study were the following:  $\chi^2=233.429$ ;  $df=144$ ;  $p=0.000$ ;  $CFI=0.945$ ;  $RMSEA=0.067$ ;  $SRMR=0.0763$ . After establishing a good fit of the latent and control variables to the data, we proceeded with mean centering of the latent variables and reducing the scales into single index variables in order to conduct the mediation-moderation analysis in the structural model. The model fit of the mediation-moderation model was good:  $\chi^2=25.552$ ;  $df=25$ ;  $p=0.545$ ;  $CFI=1.000$ ;  $RMSEA=0.000$ ;  $SRMR=0.0562$ . We use either IBM SPSS 21.0 or IBM AMOS 20.0 software for all reported statistical analyses.

#### 4.4.4 Hypothesis testing

We tested the moderated-mediation model of the relationship between trust as the independent variable, relation-specific investment as the mediator variable, relational rents as the dependent variable, and stage of venture development as the moderator variable in

several steps as proposed by Rucker and colleagues (2011) and Hayes (2013). We sort those steps in three stages, as presented in Figure 14.

*Figure 14: Hypotheses testing stages in the moderated-mediation model*



*Source: Own work.*

In stage 1, we begin specifying our model by exploiting the relationship of our dependent variable relational rents with control variables (i.e., the business angel's age, gender, prior investment experience, as well as the business angel's common history and relationship duration with the entrepreneur). We report results in Table 17 under Model A. We continue observing the main effect in our model between the independent variable (i.e., trust) and the dependent variable (i.e., relational rents), which sums up our first hypothesis H1. At this stage, we also include our control variables. The main effect shows that trust is significantly and positively associated with relational rents at a significance level  $p < 0.100$  ( $\beta = 0.153$  and  $p = 0.089$ ), thus supporting our Hypothesis 1 that trust is positively associated with relational rents. However, this hypothesis holds only at  $p < 0.100$ . We show the results related to Hypothesis H1 in Table 17 under model B.

In stage 2, we test the mediation effects of our model. We build our Model C to observe the relationship between the independent variable (i.e., trust) as a predictor of the mediating variable (i.e., relation-specific investments). The results in Table 17 show that trust is significantly and positively associated with relation-specific investments at a significance  $p < 0.010$  ( $\beta = 0.246$  and  $p = 0.010$ ). This supports our Hypothesis H2a and suggests that greater levels of trust between the business angel and the entrepreneur will increase relation-specific investments made by a business angel in that particular venture.

We proceed to Model D to observe again the main effect in our model (i.e., the relationship between trust and relational rents) in the presence of the mediator (i.e., relation-specific investments). As we see from the results in Table 17, Model D indicates that relation-specific investments impact the relationship between trust and relational rents; a new relationship is

weaker ( $\beta = 0.049$ ) and is not statistically significant ( $p = 0.573$ ). The results suggest that relation-specific investments may mediate the relationship between trust and relational rents, so we support our Hypothesis H3. In line, Model D conveys that there is a significant relationship between relation-specific investments and relational rents ( $\beta=0.419$  and  $p=***$ ). This statement supports our Hypothesis H2b.

*Table 17: Results for the main, mediation and moderation effects*

	Model A: Relational Rents	Model B: Relational rents	Model C: Relation- specific investments	Model D: Relational rents	Model E: Relational rents	Model F: Relational rents
<b>Control variables</b>						
Age	-0.104 (p=0.275)	0.107 (p=0.260)	-0.054 (p=0.572)	0.131 (p=0.135)	0.131 (p=0.136)	0.120 (p=0.153)
Gender	-0.017 (p=0.840)	-0.004 (p=0.958)	-0.084 (p=0.323)	0.027 (p=0.733)	0.027 (p=0.731)	0.042 (p=0.573)
Prior investment experience	-0.034 (p=0.726)	-0.022 (p=0.818)	0.142 (p=0.151)	-0.076 (p=0.399)	-0.076 (p=0.399)	-0.086 (p=0.318)
Common history	-0.090 (p=0.289)	-0.072 (p=0.396)	-0.048 (p=0.571)	-0.049 (p=0.528)	-0.049 (p=0.527)	-0.030 (p=0.688)
Relationship duration	0.156 (p=0.075)	0.131 (p=0.134)	0.153 (p=0.087)	0.072 (p=0.368)	0.072 (p=0.369)	0.106 (p=0.172)
<b>Main effect</b>						
Trust		0.153 (p=0.089)	0.246 (p=0.010)	0.049 (p=0.573)	0.049 (p=0.573)	0.020 (p=0.799)
<b>Mediation effect</b>						
Relation-specific investments				0.419 (p=***)	0.419 (p=***)	0.421 (p=***)
<b>Moderator variable</b>						
Venture dev. stage					-0.002 (p=0.982)	-0.065 (p=0.407)
<b>Moderation effect</b>						
Relation-specific investment x Venture dev. stage						0.191 (p=0.014)
<b>R<sup>2</sup></b>	<b>0.039</b>	<b>0.054</b>	<b>0.119</b>	<b>0.209</b>	<b>0.210</b>	<b>0.235</b>

Note: Standardized coefficients are reported. N = 139; \*\*\*,  $p < 0.001$ .

*Source: Own work.*

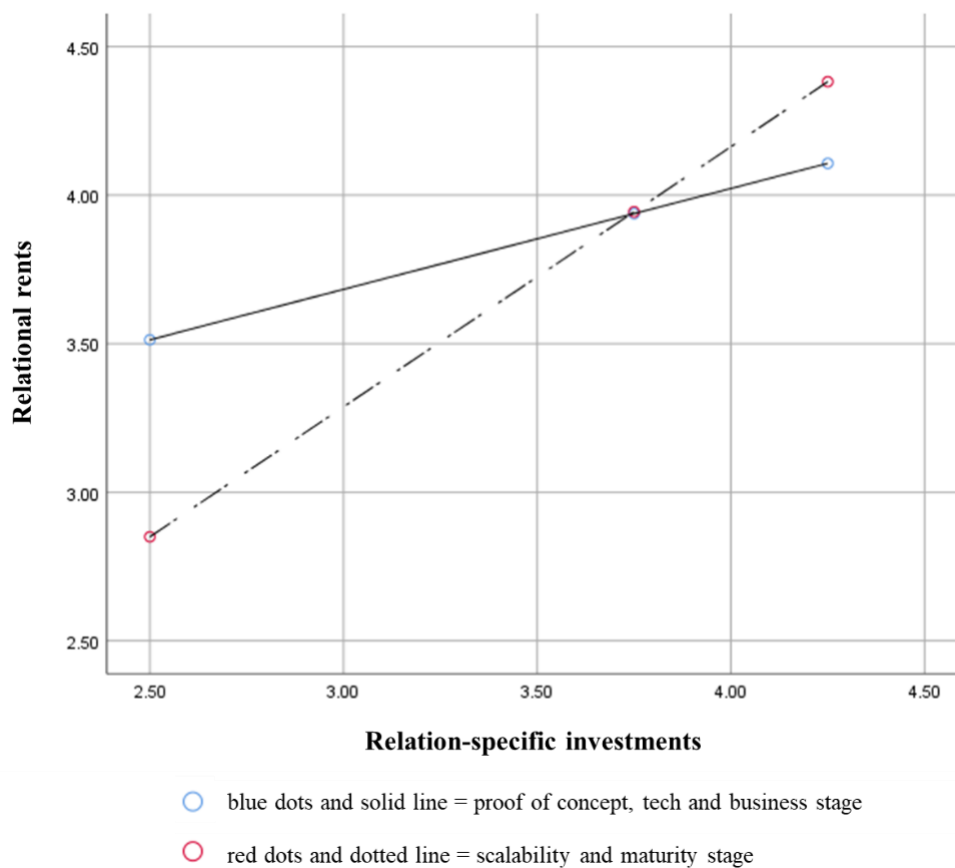
In stage 3 of our hypothesis testing, we test for the moderation effects within our model. In Model E, we introduce the moderator variable (i.e., venture development stage) into our previous Model D to test its effect, as we show in Table 17.

In our analysis, the last model, F, combines the mediation and moderation models into a comprehensive moderated-mediation model. This model introduces an interaction term between the moderator (i.e., venture development stage) and mediator variable (i.e., relation-specific investments). This helps us to understand how the venture development stage influences the relationship between relation-specific investments and relational rents.

Results of this final model indicate a  $\beta = 0.191$ ,  $p = 0.014$ , which suggests that when the venture development stage and relation-specific investments are considered together, they contribute positively to the creation of relational rents. Hence, results indicate that the level of the venture development stage moderates the relationship between relation-specific investments and relational rents such that the effects of relation-specific investments on relational rents are stronger for later stages of venture development compared to earlier stages of venture development. Therefore, we support our Hypothesis 4 as indicated by Model F. We show results for the main, mediation and moderation effects in Table 17.

As we show previously in Table 17, the moderation analysis explains that the venture development stage has a strong and significant impact on the relationship between relation-specific investments and relational rents. Specifically, we find that the financial performance of a venture alliance delivers better results when relation-specific investments are made for ventures that are mature for scalability and exit. We provide a graphical proof of this statement in Figure 15. Additionally, we provide model fit indices for our structural models in Table 18.

*Figure 15: Moderated-mediation model representation*



*Source: Own work upon PROCESS macro (Hayes, 2013) in SPSS (IBM Corp., 2020).*

Table 18: Model fit indices for structural models

Models	$\chi^2$	df	p-value	CFI	SRMR	RMSEA (90% Low and High Confidence interval)
<b>Model A</b>	63.212	33	0.001	0.964	0.0448	0.081 (0.050 and 0.112)
<b>Model B</b>	124.824	85	0.003	0.968	0.0641	0.058 (0.034 and 0.079)
<b>Model C</b>	124.474	72	0.000	0.925	0.0743	0.075 (0.054 and 0.096)
<b>Model D</b>	233.429	144	0.000	0.945	0.0763	0.067 (0.051 and 0.082)
<b>Model E</b>	249.975	162	0.000	0.946	0.0752	0.063 (0.047 and 0.078)
<b>Model F</b>	25.552	25	0.545	1.000	0.0562	0.000 (0.000 and 0.063)

Note:  $\chi^2$  =Chi Square, df=degrees of freedom, CFI=Confirmatory Fit Index, SRMR=Standardized Root Mean Square Residual, RMSEA=Root Mean Square Error of Approximation.

Source: Own work upon data analysis in Amos (IBM Corp., 2012).

#### 4.5 Discussion and implications

In this Chapter 4 we look at this relationship between business angel and entrepreneur through the lens of social exchange theory and investigate the business angel's perspective of the achieved relational rents of an investment based on trust in the investee and amendments needed to sustain the investment (known as relation-specific investments). We present a quantitative study that encompasses 139 business angels that builds on the qualitative phenomenological study presented in Chapter 3. We adopt a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examine the determinants of venture success in terms of achieving relational rents viewed through the business angel's perspective. We do so by looking at different stages of a venture's life cycle and uncover that relational rents are higher when business angels apply relation-specific investments in ventures at scalability and exit stages compared to investments in ventures in nascent stages.

Our findings suggest that when business angels trust their entrepreneurs, they are more likely to commit themselves to adjusting for specific investments with this entrepreneur. This yields better venture alliance financial performance, especially when the venture is mature for scalability and exit. In essence, trust is important to achieve alliance financial performance through increasing relation-specific investments, especially when the entrepreneurial venture is mature for scalability and exit.

This study makes several distinct contributions to the business angel literature. First, we contribute to research by positioning the relationship between business angel and entrepreneur relationship within the social exchange theory (K. Cook et al., 2013) when we look at business angel investments from a relational point of view (Dyer & Singh, 1998). Unlike existing studies in this research stream that use the resource-based view and agency theory to study business angel investments (Arthurs & Busenitz, 2003; Collewaert et al., 2021; Granz et al., 2020; Maus et al., 2023; Van Osnabrugge, 2000; Zardkoohi et al., 2017), we complement the prevailing research that explores how relationship between business

angel and entrepreneur creates value (Herrmann et al., 2016; Huang & Knight, 2017; Sørheim, 2003). This value is created through trust and relation-specific investments which characterizes business angel's and entrepreneur's relationship. The ongoing interaction and collaboration between the business angel and entrepreneur is rooted in mutual benefits and reciprocity as a social exchange process and is placed in the heart of social exchange theory.

The second contribution we make is to add another angle to the relational view where we observe the relationship between business angel and entrepreneur from the synergetic perspective. We explain it as the alliance between business angel and entrepreneur where investments are not built in isolation from other stakeholders; rather, investments are made in a relationship built on trust (Bammens & Collewaert, 2014; Ding et al., 2015; Sørheim, 2003). Nonetheless, we find that trust, in turn, fosters business angels to be willing to make adjustments to fulfill specific needs of a venture and investment in general. This is in line with the popular explanation of social exchange theory, which proposes an exchange of tangible and intangible assets among stakeholders (Mitchell et al., 2012), which is also evident in the relationship between business angel and entrepreneur in a form of relation-specific investment.

Third, we advance the theoretical understanding performance of alliance between business angel and entrepreneur as the value of joint efforts (synergies). Building on a relational view from Dyer and Singh (1998) and explaining the ongoing and repeated interaction and collaboration between BAs and entrepreneurs as a social exchange, we explain that alliance performance is a relational rent. We empirically test our assumption that trust and relation-specific investments build relational rents, but this relationship depends on the venture growth stage. We find that when business angels trust their entrepreneurs, they are more likely to commit themselves to adjust for specific investments with this entrepreneur. We also confirm that, in turn, this yields better venture alliance financial performance, especially when the venture is mature for scalability and exit. Moreover, we confirm that trust is important to achieve alliance financial performance through increasing relation-specific investments.

Future studies building on the business angels' investments may consider this relational approach to explore further how the alliance between business angel and entrepreneur creates value for both parties. It would be especially beneficial to corroborate this view by empirically testing the theoretical model of relational rent creation in the investor–entrepreneur dyad proposed by De Clercq and Sapienza (2001) for the specific context of the alliance between business angel and entrepreneur. This would add a new angle on the business angel investments view from the knowledge-sharing perspective, especially when relational rents can be considered as a result of interaction between knowledge overlap between business angel and entrepreneur and the knowledge-sharing routines.

For future studies, it is important to note that business angels' previously gained knowledge is a part of shared social capital in the pre-investment stage (Roger Sørheim, 2003). In a

social exchange context, common knowledge between business angel and entrepreneur has to be shared to receive a premium from that knowledge in the future venture (i.e. relational rents), which will be higher the more the business angel knowledge is related to the entrepreneur's industry (Saetre, 2003). From a relational perspective, we know that sharing common knowledge is bounded in knowledge-sharing routines between two entities as "regular patterns of inter-entity interactions that permit the transfer, recombination and creation of specialized knowledge" (Dyer & Singh, 1998), and this personal interaction when sharing knowledge is the benefit of the relationship between business angel and entrepreneur (Lefebvre et al., 2022).

Therefore, it is a question of future research to investigate if and how knowledge relatedness fosters achieving objectives of an alliance between business angel and entrepreneur, and how and if the knowledge sharing routines are important. To align with the study in this chapter, it would be beneficial to see how this relationship is changed regarding the venture development stage: what is the difference between the nascent stages (proof of concept, technology and business) and scaling and exiting stages of venture development. This would be an important contribution to future studies to see what type of knowledge (specialized or basic) works better for the particular stages of venture development.

It will be important that future research aims to investigate how to make the entrepreneur in this relationship independent, changing knowledge exchange mechanisms over time to slowly confront entrepreneurs with external stimulus from the business angels' side. To see how entrepreneurs can replicate and innovate the knowledge exchange process and to observe how close interaction, communication and collaboration are achieved systematically through personal interaction between business angels and entrepreneurs and how it creates value for their alliance. As recommended above, future research should investigate the relationship from the entrepreneurs' side to gain a broad understanding of business angel investments.

#### 4.5.1 Limitations

As with any research, some limitations of this study must be noted. First, we collect our data from a questionnaire, as self-reported data from business angels, which might be subject to common method bias. Because of this potential limitation, we treat our data using statistical procedures to observe common method variance, as evidenced in subchapter 4.4.1. Reliability and common method variance.

The second limitation arises from our sample size. Although the sample is quite big for a hard-to-reach population (Argerich & Cruz-Cázares, 2017; Avdeitchikova et al., 2008; Mason, 2016), it is still maybe not big enough. Increasing the sample size of some relationships other than the one we exposed might show higher significance levels, so additional research is needed to see how these relationships behave on bigger samples.

The third limitation also comes from our sample. An assessment of the gender breakdown shows us that males are extensively in excess and make up 66,2% of our sample, while the female share is just 33,8%. Official data provided by European Business Angel Network (EBAN, 2023) indicate that 13% of European business angels are women. Still, these European Business Angel Network data should be taken with caution as business angels still usually remain hidden members of society, and not all of them are part of official European Business Angel Network statistics. Hence, it would be beneficial to see whether gender distribution in our sample accurately reflects the gender distribution of business angels in the population *when* and *if* the full data get published. For now, we can say that our sample reflects a more balanced gender ratio than the official European Business Angel Network population gender ratio.

In addition, the age distribution within our sample shows a dominance of the 40-49 age group (54%) followed by the 50-59 age group (25,9%), which can mean that there is some bias towards these age groups in the sample. Regarding education, most of our business angels hold a Master's degree (51%), followed by a Bachelor's degree (30,9%), which calls for the employment of this distribution against the educational attainment trend in the business angel community on a wide scale. Unfortunately, these kinds of data are not part of official European Business Angel Network statistics and we cannot make any further conclusions.

The geographical division between Eastern and Western Europe requires attention, especially in the distribution of answers across different countries. Our sample encompasses responses from a range of countries, including Croatia (HR), Estonia (EE), Lithuania (LT), and Slovenia (SI) in Eastern Europe, and Austria (AT), Belgium (BE), Denmark (DK), Finland (FI), France (FR), Germany (DE), Italy (IT), Luxembourg (LU), Portugal (PT), Spain (ES), and Switzerland (CH) in Western Europe. Therefore, our sample shows the multinational nature of the business angel network in Europe, including business angels from both Eastern and Western European countries.

The cultural diversity in these regions is mirrored in the diversity of backgrounds and experiences of the business angels surveyed, along with political and regulatory frameworks. Nonetheless, we should take into account that the scope of coverage from some countries could be inadequate which might lead to insufficient conclusions on the relationships between business angels and entrepreneurs in those regions. In future studies, it would be beneficial to see a wider range of business angels from different European countries to capture the vibrancy and multifaceted ecosystem of business angel investing in Europe.

It is notable from previous studies that business angels' investment activity is influenced by the availability of new business opportunities and the strength of formal and informal institutions in a country (i.e., legislative changes, public administration, labor market conditions) (De Clercq et al., 2012; Sohl, 1999; White & Dumay, 2017; Zinecker et al., 2022). This can be aligned with differences in common history between business angels and entrepreneurs, as we investigate in this study. Cross-country differences might be especially

seen in countries where the absence of a fully developed institutional framework and the focus on family relationships are notable (Dibrova, 2015; Ding et al., 2014; Scheela, 2016). Cross-country data could also account for disparities in the size of relation-specific investments (financial part of incentive) with respect to the country's gross domestic product, as evidenced by previous studies (Bilau et al., 2017; Lerner et al., 2018; Shane, 2012). In cross-country data terms, we must note that cultural differences significantly impact the behavior and decision-making of business angels, particularly in the context of trust (Harrison, 2017; Martins et al., 2021; Samsami, 2023).

The fourth limitation of our study points to the importance of cross-sectional data. Our data represent a snapshot of business angel investments at a specific point in time. Sequential analysis over time is crucial to transform this static perspective into a dynamic, longitudinal study that tracks the stages of venture development. By repeatedly collecting cross-sectional data at different time intervals, a longitudinal approach would enable us to observe trends, changes, and developments in business angel investments at different stages of entrepreneurial venture development. This would allow a better understanding of how relation-specific investments change at different stages, how trust is built over time, and how it ultimately changes alliance performance as ventures develop. This would provide a broader view that goes beyond isolated moments as we observe in this study and provide valuable insights for business angels, entrepreneurs and researchers in the field.

Our fifth limitation also arises from the sample and relates to the generalizability of the results. This limitation can be a crucial obstacle as the results of our study are based on a specific sample - business angels in Europe. As this segment of respondents is strongly influenced by specific regional economic conditions, cultural characteristics and regulatory frameworks, the relationships identified in the model may not be appropriate for business angels operating in other regions, such as North America or Asia, where the market paradigm and specifics of investment practices differ. The model also may not be transferable to other types of European investors like venture capitalists and institutional investors. Consequently, the results of our study are beneficial for business angel research. However, they should not be used to draw conclusions about other contexts. Expanding the range of samples, whether from different regions or from regions other than the replication, would be a good measure to assess the effectiveness of the model and the potential for cross-cultural generalization of the results.

In our study, a notable limitation emerged with respect to the observed significance level ( $p < 0.10$ ) in the relationship between trust and relational rents. This calls for a cautious interpretation and draws attention to the need for further research to shed more light on this particular relationship. Caution is required when interpreting the current result, as the interplay between trust and relational rents is potentially more complicated than we exposed. The significance level identified signals the need for further investigation and highlights the importance of future research efforts to refine our understanding and ensure a solid foundation for conclusive interpretations of this relationship.

The seventh limitation of our study relates to reverse causality (Kline, 2023), as we have trust as the independent variable and relational rents as the dependent variable and the two are bidirectionally connected. We base our hypothesis on the premise that business angels are likely to build up or establish a higher level of trust between them and entrepreneurs, which is likely to foster increased relational rents. This is primarily because we assume that trust encourages collaboration, openness, sharing valuable inputs that positively affect mutual benefits within venture alliance. However, relational rents, referred to as unique premiums of this venture alliance, can also increase trust as business angels and entrepreneurs realize the value of continuous investment in their relationship. This reciprocal relationship distorts our understanding of a unidirectional causal path. Furthermore, the venture development stage in our model moderates the relationship between trust and relational rents as nascent entrepreneurs in the relationship with business angels might prioritize trust establishment differently to mature entrepreneurs. This makes it challenging to isolate the cause and effect. Still, to overcome these deficiencies, in the future, it would be beneficial to apply longitudinal data collection or to use instrumental variables that could clarify causal relationships.

#### 4.5.2 Practical implications

The findings of this study have significant practical implications for both business angels and entrepreneurs. For business angels, understanding the paramount role of trust in the alliance with entrepreneurs underscores the importance of cultivating and maintaining strong relationships. By recognizing that trust is a precursor to financial transactions and a catalyst for mutual success, business angels can prioritize transparent communication, shared goal setting and ongoing engagement with entrepreneurs. In addition, the study highlights the strategic value of specific investments and points out that business angels should consider tailoring their financial support to the venture's specific needs and growth stage. In this way, business angels can increase the likelihood that the relationship will pay off and improve the financial performance of the alliance.

On the other hand, entrepreneurs should be aware of the impact of trust on their relationships with business angels and the resulting potential for alliance success. Fostering an environment characterized by openness, reliability, and competence can increase trust in business angels and pave the way for more meaningful and strategic collaboration. Entrepreneurs should also be aware of the importance of relation-specific investments and ensure that the resources provided by the business angel side are aligned with their venture's stage of development and strategic goals. This includes the wise use of financial support and actively working with business angels to leverage their expertise and networks. By recognizing the symbiotic nature of their relationship with business angels and prioritizing trust and tailored investment, entrepreneurs can ultimately position themselves for sustainable growth, operational resilience and long-term success.

Understanding the evolving relationship between business angels and entrepreneurs at different stages of the venture development process offers important insights for both entrepreneurs and business angels. In the early stages, such as the seed and pre-seed stages of business development, trust is primarily based on competence and integrity, as we discussed previously in this chapter. In this early stage of venture development, business angels assess the entrepreneur's potential and the market opportunity, so the entrepreneur needs to build credibility through a clear vision, transparent communication and realistic milestones. In the early growth stage, where seed funding becomes critical, trust in the relationship between business angel and entrepreneur deepens through rigorous performance metrics and strategic planning aligned with the entrepreneur's demonstration of business model fit or scalability. If the entrepreneurs provide regular updates during this stage and demonstrate the scalability mentioned above, the business angels feel encouraged in their investment and offer further support (e.g., mentoring, networking, finance).

When the entrepreneurial venture enters the growth or expansion phase or even beyond, the trust between entrepreneurs and business angels changes towards more benevolence-based as it roots in mutual benefit. This is a crucial stage where entrepreneurs can foster this trust by actively working with business angels, maintaining open communication about the company's development and addressing potential challenges. The later stages of business development are the time when business angels and entrepreneurs agree on common goals and when the performance of the business alliance delivers outstanding returns. Therefore, it is important for entrepreneurs to maintain open communication and integrity that builds trust in order to secure the ongoing business angel support and funding needed to sustain the company's growth. If both the business angel and the entrepreneur assure the presence of trust throughout the duration of their relationship, this could ensure higher returns for their joint venture.

## **4.6 Conclusion**

The results of our study suggest that when business angels trust their entrepreneurs, they are willing to commit themselves to adjust for specific investments with this entrepreneurial venture. We also see from the study that this, in turn, yields better alliance financial performance, especially when the venture is mature for scalability and exit. In essence, we find that trust is important to achieve alliance financial performance (although at a lower significance value of  $p < 0.10$ ), but its impact is transmitted through relation-specific investment.

To summarize, the interdependent relationship between business angels and entrepreneurs is underpinned by the key elements of trust, relation-specific investment and the resulting development of relational rents. Trust forms the cornerstone of this collaboration by creating a deep connection between the business angel and the entrepreneur. This trust is expressed through relation-specific investments that are tailored to the entrepreneur's vision and the

specific needs of the venture. As the entrepreneurial venture evolves, the strategic nature of these relation-specific investments becomes critical as they guide the company through the scalability and eventual exit phases. The sharing of tangible and intangible assets, from financial resources to strategic insights and networks, underscores the robustness of this partnership and its ability to navigate the intricacies of the entrepreneurial terrain.

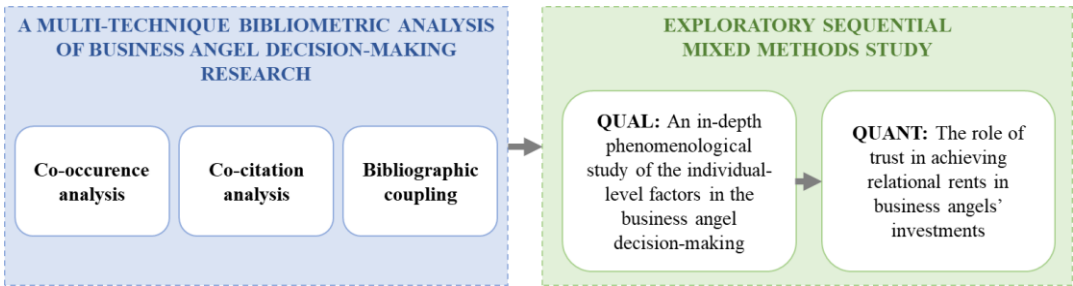
The synergetic result of trust, specific investments and the resulting generation of relational rents culminate in an increased financial performance of the alliance. Relational rents resulting from the combined efforts of both parties represent a value proposition beyond traditional financial gains. This dynamic relationship is a testament to the power of joint engagement, where the business angel and the entrepreneur achieve financial success through their mutual efforts and contribute to the venture’s overall resilience, resourcefulness and strategic adaptability. In essence, the triumph of the relationship between business angel and entrepreneur underscores the transformative potential of trust and targeted investment in cultivating lasting partnerships that transcend mere transactions and ultimately shape the trajectory of entrepreneurial endeavors.

## 5 DISCUSSION

This dissertation examines how business angels make their investment decisions and the criteria they apply. Namely, the following question stays as an overarching research problem in this dissertation: *How do business angels use their individual-level factors to engage in decision-making when they approach venture investments, and how do their individual-level factors relate to the performance of the ventures they invest in?*

To explore this research problem, we develop a comprehensive hierarchical framework that utilizes a broad approach to exploring the existing literature through multi-technique bibliometric analysis of business angel decision-making and exploratory sequential mixed methods study. Figure 16 provides an overview of how we examine the conceptual background of the main research problem to build up a better understanding of business angel investment decision-making through the mixed methods study. The detailed research framework we show at the beginning of this dissertation in Figure 1.

Figure 16: Brief representation of a research framework

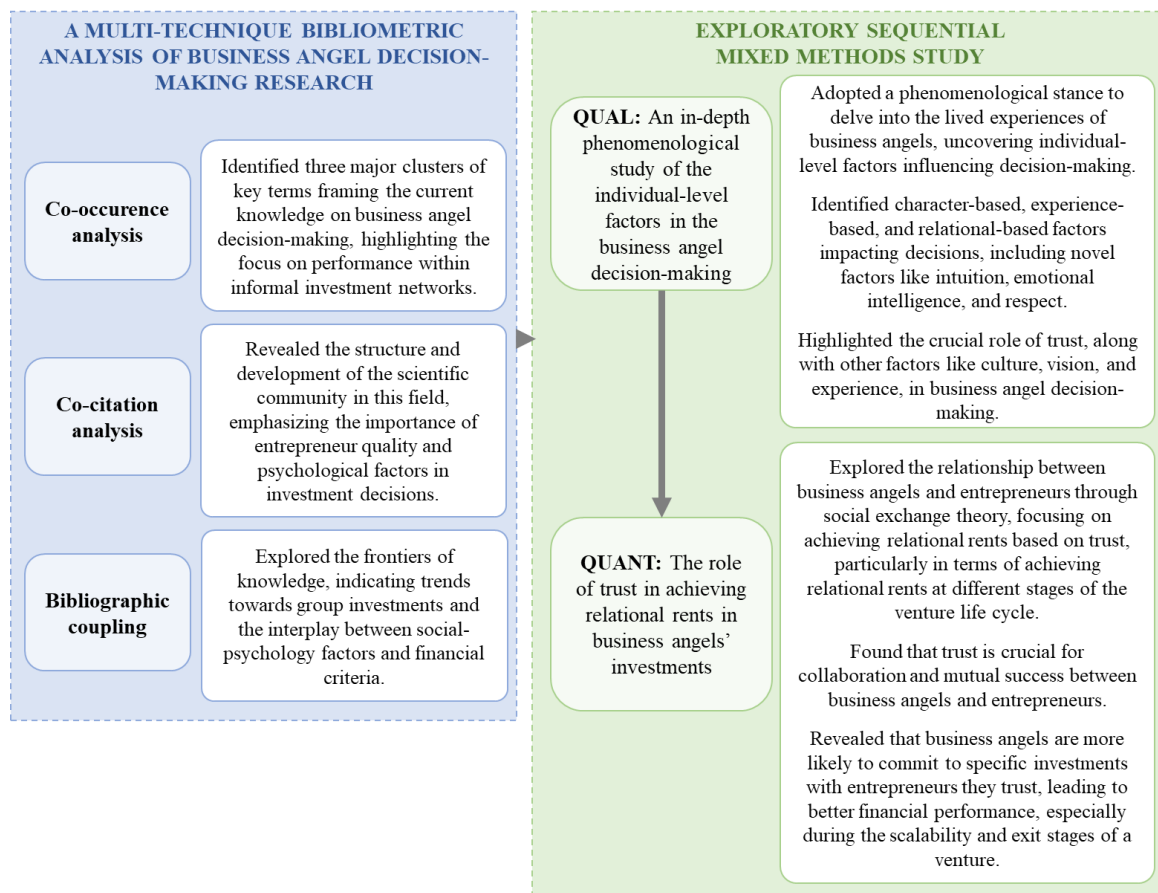


Source: Own work.

## 5.1 Summary of main findings

We begin this dissertation with a review of existing research business angel decision-making using a multi-technique bibliometric analysis approach. First, we use a co-occurrence analysis of terms related to a conceptual overview of research, followed by a co-citation analysis of previous research. Finally, we conduct a bibliographic coupling analysis that aims to highlight research limitations in the business angel decision-making field. Figure 17 illustrates the summary of the main findings in this dissertation.

Figure 17: Summary of main findings



Source: Own work.

From our co-occurrence analysis we discover three major clusters of key terms which frame the current knowledge on business angel decision-making. The largest cluster from our co-occurrence map we named “Business angel decision-making performance in informal investment networks”, where the literature observed relies heavily on business angels’ indicators of success. The most co-occurred keyword is “performance”, which in the business angel literature is mainly related to measuring business angel investment returns where the common metric to measure and compare investment returns is the internal rate of return (Aernoudt, 2005; Freear et al., 1995; Gregson et al., 2017). Still, another stream of literature gives “performance” a more behavioral perspective: how the business angels affect the performance of entrepreneurial ventures through the presence of angel syndicates and

the hands-on involvement in the business procedures (Bonini et al., 2019), through the contribution of their skills, expertise, knowledge, and contacts to entrepreneurial ventures (Lumme et al., 1998), and exposing entrepreneurial orientation (Lindsay, 2004). We also discovered some other non-financial aspects of “performance” where Capizzi (2015) outlined that higher business angel investment performance determines a more efficient venture capital market where higher investment performance is determined by higher levels of business angel business experience and higher investment rejection rates (Capizzi, 2015). The other two smaller clusters in our co-occurrence map settle business angels in the entrepreneurial operational framework and seek for differences between business angels and venture capitalists. Findings from this analysis informed us on the nature of the business angels as individual investors, whose operational performance is not only framed around the financial criteria, rather, there are some more behavioral factors that highlight their operational performance.

The second bibliometric analysis we undertook was the co-citation analysis that investigated the structure of the scientific community in the business angel decision-making field and its development. We studied four different intervals of research structure development and gained a deep understanding of nineteen clusters of knowledge that appeared. This gave us an idea of the diversified and rather heterogeneous knowledge frameworks in the business angel decision-making field. We need to emphasize a major discovery in 1990s research. We found that business angels do not only focus on the ideas but also on their proper execution. Thus, the entrepreneur’s quality is one of the most important criteria when business angels make investment decisions. A good expectation fit between the business angel and entrepreneur is crucial for successful funding. This analysis gives us a clearer elaboration of business angels’ specificities aside from other non-angel investors, which we previously partially discover in the co-occurrence analysis. In this co-citation analysis we find that business angels differ in the psychological factors that influence the decision-making process along with the success of the venture. Further use of psychological theories explained the business angel decision-making where we perceive their investments as trust-related activities. This analysis showed us that new concepts like trust play a critical role along with heuristics in business angel decision-making.

The third analysis in the bibliometric networks, bibliographic coupling, showed us the frontiers of knowledge in business angel decision-making. We discovered that research frontiers in this field go towards new important trends that are seen in practice – business angel group investments and the interplay between social-psychology factors and financial criteria in final decision-making. Additionally, we discovered that there is evident domination of dynamic emotion-cognition research and impression management, where concepts like trustworthiness, intuition, and passion lead the research frontiers.

Findings from our bibliometric analyses informed our further research path. We decided to explore further how business angels make their investment decisions. As informed by our bibliometric analyses, we decided to investigate further how business angels use their

individual-level factors to engage in decision-making when they approach venture investments and how their individual-level factors relate to the performance of the ventures they invest in. In doing so, we used a sequential exploratory mixed-methods study where we combined qualitative and quantitative data collection and analysis in a sequential manner. By definition, mixed methods is a research procedure offering collection, analysis, and integration of both qualitative and quantitative data at a particular stage of the research process, but within a single study, with the aim to better understand the research issue (Creswell, 2003; Tashakkori & Creswell, 2003). This dissertation used sequential exploratory design (Ivankova et al., 2006) in two phases which allowed us to gain a comprehensive understanding of a business angel decision-making phenomenon.

In our first phase of the mixed-methods study, we decided to explore and gain a nuanced understanding of the lived experiences and subjective perspectives of business angels who have had entrepreneurial venture investment experiences and uncover the underlying meanings and essence of their experiences. This was done through qualitative study where we took a phenomenological stance and viewed business angel decision-making as a phenomenon to which business angels can relate through their lived experiences of investment decision-making. We also explored individual-level factors that play a role in business angel decision-making. Through such a phenomenological lens, we deepened the understanding of business angel decision-making by compiling three sets of individual-level factors that impact how business angels make their decisions: character-based, experience-based, and relational-based factors. Within these three sets of individual-level factors, we uncover three specific novel factors, namely intuition, emotional intelligence, and respect, which are important antecedents of business angel decision-making but were neglected in previous research. In line with previous research, our findings also highlight the importance of trust, culture, vision, and experience in their decision-making.

Our multi-technique bibliometric analysis, along with our in-depth phenomenological study of the individual-level factors in the business angel decision-making, outlined that, among other factors, trust is crucial in the relationship between business angels and entrepreneurs as it creates a solid foundation for collaboration and mutual success and growth (Ding et al., 2015; Lefebvre et al., 2022). Hence, after completing the qualitative stage study, we followed up with a quantitative study where we viewed the relationship between business angel and entrepreneur through the lens of social exchange theory and investigated the business angel's perspective of the achieved relational rents of an investment based on trust in the investee and amendments needed to sustain the investment (known as relation-specific investments). Specifically, we studied the role of trust in achieving relational rents in business angels' investments. We adopted a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examined the determinants of venture success in terms of achieving relational rents viewed through the business angel's perspective. We did so by looking at different stages of a venture's life cycle and uncovered that relational

rents are higher when business angels apply relation-specific investments in ventures at scalability and exit stages compared to investments in ventures in nascent stages.

The ultimate findings suggest that when business angels trust their entrepreneurs, they are more likely to commit themselves to adjusting for specific investments with this entrepreneur. This yields better venture alliance financial performance, especially when the venture is mature for scalability and exit. In essence, we found that trust is important to achieve alliance financial performance through increasing relation-specific investments, especially when the entrepreneurial venture is mature for scalability and exit.

## **5.2 Summary of research goals accomplishment**

In the studies of this dissertation, we find that business angel's investment decisions and criteria are divided into two distinct phases. The first is pre-investment decision-making, which is highly influenced by non-financial criteria and has its roots in business angels' individual-level factors concerning their character, experience and relationships with their entrepreneurs. The second phase is post-investment decision-making. In this phase, we observe the relationship between business angels and entrepreneurs as an alliance that aims to build value (i.e., alliance performance we view as relational rents). Namely, we find that business angels' trust creates relational rents in the relationship between business angel and entrepreneur, but these are mediated by the relation-specific investments and moderated by the stage of the venture's development. In the following sections, we discuss these research findings in detail and show how each is consistent with this dissertation's research goals.

*Research goal 1: To uncover the conceptual building blocks of literature in the business angel decision-making research.*

The first goal we achieve in our bibliometric study is to analyze the co-occurrence of key terms in Chapter 2. An analysis of 1,009 scientific articles from the Web of Science database, published in peer-reviewed journals or being literature reviews between January 1981 and March 2019, yields a co-occurrence map of 4,921 keywords. Our analysis reveals three major keyword clusters in the field's network: (a) business angel decision-making performance in informal investment networks, (b) business angels as individual investors and (c) business angels vs. venture capitalists. We find that the conceptual building blocks of the literature in business angel decision-making are mainly drawn from economics and business research fields. We emphasize that the conceptual framework of business angels is strongly related to the concept of venture capitalists and performance in innovation and private equity entrepreneurship.

Furthermore, we note that business angel research indicates that ownership structures and entrepreneurial finance concepts (i.e., volatility, returns, equity crowdfunding, decision-making, venture capital market and growth) are often embedded in business angel decision-making studies. However, recent studies in this field show that not only financial concepts

but also concepts from the field of technological advancement and social psychology are driving the current scientific development in the field of business angel decision-making (e.g., commitment, consumption, user acceptance, experience, patterns, etc.). This analysis in the context of our multi-technique bibliometric study shows that not only are financial criteria relevant for business angel investment decisions, but the patterns of decision-making and psychological incentives determine how and why business angels make their investment decisions. Nevertheless, we also find that this area is very closely linked to advances in venture capital research, which needs to be distinguished in the future, as these two types of investors in the venture market are fundamentally different, as discussed in Chapter 1.

*Research goal 2: To uncover how the structure of the scientific community in a business angel decision-making field develops over time.*

We achieve our second research goal through a bibliometric co-citation analysis of the literature in business angel decision-making in Chapter 2. We identify 280 publications with a total of 4,151 citations at the end of March 2019, highlighting the dominant studies in the field and defining nineteen knowledge clusters within four development intervals. Namely, we find that scholarly communication in the field of business angel decision-making began in the late 1980s, where we encounter four distinct knowledge clusters: (a) managerial behavior, (b) ethnic entrepreneurship, (c) heuristic decision-making and referral networks and (d) venture capitalists' investment criteria and behavior. The second interval of scholarly communication in business angel decision-making refers to papers published in the 1990s. Here we see five clusters of knowledge: (a) business angel investors versus non-angel investors, (b) business angel investment attitudes and intercountry investments, (c) individual-qualitative experiences in the decision-making process, (d) business angel investment criteria, and (e) the continuing debate on ethnic entrepreneurship.

The third interval in the 2000s brings a denser collaboration in the field of business angel decision-making, and the density of the co-citation network reflects the rich and concentrated intellectual collaboration among scholars. The main publication venues in the 2000s were *Venture Capital*, *Journal of Business Venturing*, and *Entrepreneurship Theory and Practice*, with the vast majority of influential articles published. In the 2000s, we observe the proliferation of six different knowledge clusters: (a) the underappreciated role of business angels, (b) local policymakers and cross-border venture capital, (c) agency theory and corporate governance, (d) geographical perspectives on business angel funding, (e) measurement of business angel investment activity, and (f) ethnic and immigrant entrepreneurship. The third interval of academic contributions in the 2000s is the most important regarding the strength of co-citation relationships. The majority of empirical studies in this interval are often cited together. In addition, the first formal literature reviews appear, and business angel research moves conceptually towards more interdisciplinary research (i.e., the conceptual influence of finance, law and sociology).

Based on this co-citation analysis, we see the density of intellectual contributions. We find that the business angel decision-making field builds on the first possible comparator – venture capital investors - in the early stages of the research. Even though their decision-making has the same goal, there are significant differences between these two types of investors. The differences are mainly based on the more heuristic decision-making in the business angel market and the more formalized investments in the venture capital market. Early research in business angel decision-making clearly distinguishes between these two types of investors and encourages research on more personalized decision-making processes. Second, the early dominance of research in business angel specifics (i.e., characteristics, background, investment patterns) promotes the organic growth of knowledge in this area. In addition, the psychological characteristics of business angels in the business angel decision-making represent dyads between entrepreneurship and social psychology, through which we increase the pool of available theoretical background for future research.

*Research goal 3: To see the intellectual structure of emerging literature and expose the research frontiers of BA decision-making literature.*

We achieve the third research goal through the bibliographic coupling analysis in the context of the bibliometric study. In Chapter 2, we align our research with the criteria of scholarly significance through the proximity of coupling links between documents in the bibliometric network and focus on the specificities of these dyads. We capture scientific articles published between January 2015 and December 2019, including all articles regardless of their citations, as we try to show the frontiers of current research (i.e., some articles published at the time of analysis may not have been cited). We base our analysis on 174 academic articles and encounter that the field contributions have reached a growth rate of 53% since 2015.

Among the publication outlets with the highest link strength, we find *Venture Capital* with 22% of the total link strength within the field, followed by *Handbook of Research on Business Angels* (10%), *Foundations and Trends in Entrepreneurship* (6%) and *International Small Business Journal – Researching Entrepreneurship* (6%). Through a bibliographic coupling analysis, we identify seven clusters of emerging knowledge in which we provide insights into the unexplored area of business angel decision-making research. These are (a) business angel group decision-making, (b) the business angel research agenda, (c) the nature of business angel decision-making, (d) crowdfunding as a first alternative to business angel funding, (e) funding ethnic entrepreneurship and immigrant entrepreneurship, (f) gender issues in business angel funding, and (g) the rationale for venture funding.

The frontiers of research in business angel decision-making move towards the new trends we see in practice. Business angel group investments and the interplay between social psychological factors and financial criteria in final decision-making appear as important. Funding alternatives are emerging that are strongly influencing the field itself. In crowdfunding research, there are trends in investment evaluation, and modified financial measures are also proposed. In addition, dynamic emotion research and impression

management clearly dominate, with concepts such as trustworthiness, intuition and passion defining the frontiers of research.

We find that financially oriented criteria tend to play a role in business angel decision-making and that new themes emerge in decision-making based on personality factors. In particular, this guides our next research goal 4, where we investigate how individual-level factors are evident in business angel decision-making and how they may affect investment decision-making.

*Research goal 4: To explore and gain a nuanced understanding of the lived experiences and subjective perspectives of business angels who have had entrepreneurial venture investment experiences and to uncover the underlying meanings and essence of their experiences.*

We accomplish this goal through an in-depth phenomenological qualitative study based on interviews with 16 European business angels, as we describe in Chapter 3. Complementing previous academic findings that business angels rigorously analyze financial forecasts, market conditions and business plans to assess potential returns (Capizzi, 2015; Granz et al., 2020; Gregson et al., 2017), we find that their individual-level factors play a crucial role in their decision-making. We find that business angels often experience their entrepreneurial venture investments as personal ventures where their decision-making is a delicate balance between assessing financial viability and their individual-level factors. Our study confirms that business angels frame their decision-making upon the cognitive constructs (Franić, 2014) rather than using a fully compensatory decision-making approach (Maxwell et al., 2011; Van Osnabrugge & Robinson, 2000).

Still, our findings go even further than previous studies, as we find that business angel decision-making is also embedded in the business angels' character, experiences, and relationships business angels build with their entrepreneurs. Hence, the individual-level factors we identify in our study fall into three distinct categories: character-based, experience-based and relational-based.

*Research goal 5: To uncover new individual-level factors of business angels that might not be covered in the current literature but are important in their investment decision-making.*

We accomplish this research goal through the in-depth phenomenological study in Chapter 3. In our analysis, we encounter several business angels' factors at the individual level that are either not disclosed in the current literature or not sufficiently disclosed to draw further conclusions. The results of our study suggest that intuition is an essential component of business angels' character, as it reflects their ability to draw on their instincts honed over time and their prior experiences with intuitive decision-making. We also find that business angels' intuition is closely related to emotional intelligence, as it involves recognizing and interpreting subtle emotional cues from entrepreneurs. Our study shows that high levels of

emotional intelligence enable business angels to trust their instincts, which are often characterized by a deep understanding of the venture market and dynamics. Both intuition and emotional intelligence are neglected in the current literature on business angels' decision-making.

Furthermore, we find that business angels' values serve as a guiding framework when identifying and selecting investment opportunities, incorporating their fundamental values and ideals. They make their investment decisions based on whether the entrepreneurs align with their values. Our results show that culture plays an important role in shaping these values. We encounter many cultural differences in business angel decision-making, which we place in the context of power distance to emphasize them better. We find that the role of the business angel in the relationship with the entrepreneur is generally the same in all our data: mentor, advisor and investor. Nevertheless, the hierarchy is different in our sample, which seems to have an impact on the way business angels make different decisions due to cultural differences and is related to the personal social dynamics framed around respect for business angels. Thus, our study finds that business angels' respect is closely related to culture, as it is shaped by the cultural context in which business angels grow up and interact. Unfortunately, this issue of respect is not mentioned in previous studies of business angel literature, allowing us to take a step further in uncovering and understanding novel individual-level factors important in business angel investment decision-making.

*Research goal 6: To observe how trust in the relationship between business angel and entrepreneur is associated with creating relational rents.*

*Research goal 7: To uncover the potential of relation-specific investments and their mediating role.*

*Research goal 8: To see how the venture development stage moderates the indirect relationship between trust and relational rents.*

To achieve the last three goals, we empirically validate a moderated-mediation model for the relationship between business angels' trust and the invested entrepreneurial venture relational rents, as we show in Chapter 4. We base our model on the premise that the alliance between business angel and entrepreneur is a social relationship in which both parties disclose their individual-level factors, and the investment is not only a financial transaction but also a manifestation of trust. We characterize the ongoing interaction and collaboration between business angel and entrepreneur by a balance of contributions and benefits in the form of relation-specific investments. Therefore, this model illustrates the nature of a social exchange process in the field of entrepreneurial venture finance and mentorship.

In this social exchange framework, both the business angel and the entrepreneur contribute resources and receive benefits in return. Business angels invest financial capital, industry knowledge and valuable networks, while entrepreneurs provide the business concept, innovation and commitment to drive the venture forward. We conceptualize the relationship

between a business angel and an entrepreneur based on mutual benefit and reciprocity as a social exchange process and place it at the heart of social exchange theory.

In our study, we model the relationship between business angels and entrepreneurs. We state that business angels who trust their entrepreneurs are willing to engage in certain investments with that entrepreneur. This, in turn, leads to better financial performance of the alliance, which we refer to as relational rents, especially when the entrepreneurial venture is mature for scalability and exit. Trust is important to achieve alliance financial performance, but its effect is transmitted through relation-specific investments. We empirically test this model using a sample of 139 business angels across Europe. This dynamic relationship is a testament to the power of joint engagement, where the business angel and the entrepreneur not only achieve financial success through their combined efforts but also contribute to the venture's overall resilience, ingenuity and strategic adaptability through synergies.

### **5.3 Theoretical implications**

The discussion of findings, as outlined previously, shows how chapters subsequently achieve specific research goals. However, theoretical contributions for specific chapters are disseminated as follows.

Chapter 2 presents a multi-technique bibliometric analysis of business angels' decision-making research. Therefore, the first theoretical contribution we make in this dissertation is the overarching literature review that broadly investigates the main keywords in the business angel decision-making field, along with revealing focal relationships between key research publications and the scholarly community's structure. Additionally, we show the evolution of the research structure in business angel decision-making over time and provide insight into where research might be heading in the future.

Our bibliometric study presented in Chapter 2 makes a significant theoretical contribution as it uncovers hidden patterns in scholarly communication, trends and relationships within the body of literature. Therefore, it enriches our understanding of decision-making research. Namely, we make the first theoretical contribution by systematically examining co-occurrence patterns within our bibliometric study. This, in turn, reveals two clusters of key research terms. The first cluster of key terms uncovers the concepts that mainly derive from the field of economics and business research, and the second cluster deals with the broader conceptual distribution of business angels in technological advances and relates the business angels to the social psychology field.

Business angel(s) as a key term relies heavily on "performance," and those two terms started appearing together around 2014. From our study, we also see that performance is a predominant indicator of success where it strongly relates to measuring business angel investment returns through a broader scope of financial criteria like internal rate of return (Aernoudt, 2005; Freear et al., 1995; Gregson et al., 2017). In our study, we also encounter the performance of business angels being closely related to the business angels as dealmakers

involved in entrepreneurial venture investments within a formalized network like angel syndicates (Bonini et al., 2019). Business angels expose their contribution to the ventures they invest in through the contribution of their skills, expertise, knowledge and contacts to entrepreneurial ventures (Lumme et al., 1998), as well as expose entrepreneurial orientation as an important prerequisite for their investment activities (Lindsay, 2004). There is also a stream of literature in this area that gives the “performance” a more behavioral perspective, where Capizzi (2015) outlines that higher business angels’ investment performance determines a more efficient venture capital market where higher investment performance is determined by higher levels of business angels’ business experience and higher investment rejection rates (Capizzi, 2015).

In a second cluster of key terms, we see that business angels are largely related to “entrepreneurship” as they contribute with their entrepreneurial background or investments in fostering economic growth. This gives us a broader definition of business angels as investors with entrepreneurial orientation who expose their skills, experiences, expertise, knowledge and contact network by leveraging the performance success of entrepreneurial ventures they invest in to foster economic growth ultimately. The third cluster of keywords tries to make a distinction between business angels and venture capitalists. This is also where the business angel conceptual framework is strongly interrelated with the concept of growth and the performance in innovation and private equity entrepreneurship.

The second and most extensive theoretical contribution comes from our co-citation analysis regarding how conceptual development flows over time. We identify four research intervals of business angel decision-making scholarly development, as we present broadly in Figure 2 (see Chapter 2). We discover that business angel decision-making research started the conceptual evolution back in the 1980s. One unanticipated finding was that even if Wetzel published the first paper on business angel decision-making (Wetzel, 1983), the ground for studies had mainly been driven by finance and psychology research on investment behavior even before the 1980s. This is also the interval where we encounter four clusters of knowledge mainly grounded in the finance and psychology intersection research, with more specific explanations given to the business angel surrounding. At the very beginning, business angel decision-making relied on heuristic decision-making and referral network ties. These findings further supported the idea established in previous literature reviews that business angel decision-making is highly dependent on the quality of the business network, whereas investment decisions were usually delivered upon short-cut decision-making (Drover et al., 2017; Edelman et al., 2017; Harrison, 2017; Wallmeroth et al., 2018).

The second observed time interval of business angel decision-making research development are the 1990s, which gives us a diversified view of business angel investments. The leading lesson we take from this literature interval is that business angels do not only focus on the ideas but also on their proper execution. Thus, the venture manager’s (executive or owner) quality is one of the most important criteria when business angels make an investment decision. A good expectation fit between the business angel and venture management is

crucial for successful funding. So, it is not the jockey *OR* the horse. Rather, it is the jockey *AND* the horse to have a perfect fit. In the 1990s, there was the first evidence that differences in business angels and non-angels are not that significant regarding utilizing a formal investment.

More importantly, they differed in the psychological factors that influenced the decision-making process and the venture's success. This interval also shows strong use of psychological theories that underline the business angel decision-making through perceived investment intention as a trust-related activity. From a psychological perspective, new concepts like trust play a critical role in a business angel decision-making environment. The heuristics in decision-making form the dynamics in this research field.

Our study also found that one of the major research streams in business angel decision-making highlights the importance of geographic proximity to business angel decision-making, as later outlined by Drover and colleagues (2017) and Edelman and colleagues (2017). This mainly means that proximity in geographical terms is one of the key investment criteria by business angels, both on the individual and group levels. Our analysis showed that the concept of “investment proximity” is bounded in the 1990s, 2000s, and 2010s studies where the geographic perspectives on business angel financing also took note of cross-border venture capital practices and aligned with local investment policies.

In the 2010s, the first empirical studies on business angel syndicates appeared, and the investment process changed to more socio-psychological oriented deal-making. Edelman and colleagues (2017) previously outlined syndicated and group financing decisions as one of the emerging typologies for business angel investments. In the 2010s, even if business angels remain the single most reliable source of well-administered and mentored informal capital investment for early-stage businesses, crowdfunding research is the newest sub-field of potential research.

Our findings confirm the “change of entrepreneurial culture” as outlined by Harrison (2017), where crowdfunding is linked to early-stage financing. Nevertheless, this is still not densely connected to business angel decision-making or business angel investments. Edelman and colleagues (2017) also emphasized this as a potential research path where the impact of crowdfunding on business angels should be further investigated. This study also finds new perspectives for future research where authors seek further exploration of ethnic, minority, and immigrant venture financing. This is aligned with our earlier observations, which showed that ethnic entrepreneurship was the first emerging theme in our interval research in the 1980s and continued appearing through most of our study intervals. Even if it occurs continuously, the research contributions are somewhat scarce and heterogeneous. An explanation for this might be that ethnic, minority, and immigrant entrepreneurship has scrutinized access to business angel investments and “results in less desirable financial outcomes” (Drover et al., 2017).

Our third theoretical contribution comes from the bibliographic coupling analysis, which shows that the business angel decision-making field is rather homogeneous and grows

organically, authors share similar ideas in the current research and still push the research frontiers. Research frontiers in business angel decision-making go towards the new trends that we see in practice – business angel group investments and the interplay between social-psychology factors and financial criteria in final decision-making appear to be very important. Findings of bibliographic coupling analysis expose uncovered research areas such as crowdfunding, immigrant entrepreneurship and gender issues. Additionally, dynamic emotion-cognition research and impression management dominate, where concepts like trustworthiness, intuition and passion lead the research frontiers.

Additionally, we encounter that there is no evidence of business angels taking part in crowdfunding deals even though crowdfunding emerges as a somewhat important research frontier, so it would be interesting to investigate how other investors' decision-making in crowdfunding may differ from business angel decision-making. This could lead to a more profound definition of risk assessment in the business angel deal-making structures. The literature's deficiencies move business angel decision-making research towards immigrant entrepreneurship, which appears to be an underexplored area. The question that comes in handy is whether business angels should be more exposed to the market or there are some biases in the relationship between business angels and immigrant entrepreneurs? We see that immigrants and ethnic entrepreneurs avoid business angel investments, but the question that remains unanswered is why.

Additionally, our analysis notes the apparent research deficiencies in business angel gender issues. The question that remains open is how business angels still have a gender bias in their decision-making while they operate in the world of human and technological evolution. We would also require the answer to which biases are exactly those. Studies show that male business angels have a gender bias in their decision-making, but what about female business angels? We are aware of the existence of “female-only” business angel societies. Could we observe through feminist theory (Elliott & Orser, 2018; Greer & Greene, 2003; Hurley, 1999; Orser et al., 2011) the decision-making in those female business angel exclusive clubs and how their decision-making would differ from male business angels? From the theoretical framework lenses, there is enough evidence to dig even deeper into this urging topic.

Lastly, heuristic decision-making seems to be underexplored and largely urges new research. The study shows the emerging themes in the business angels' personality factors-driven decision-making, which leaves unanswered which personality characteristics and personality levels (i.e., such as traits, emotions, feelings and attitudes) are common in business angel decision-making and potentially how they affect their investment decision.

We derive further theoretical contributions from our phenomenological qualitative study, as we present in Chapter 3. Our study provides an initial exploration of the individual-level factors that influence business angel decision-making. The fourth theoretical contribution comes from uncovering several novel or under-researched individual-level factors that business angels expose when making their venture investment decisions: intuition, emotional intelligence and respect. In a broader sense, we find that business angels' intuition

is the important antecedent of how they make sense of their decision-making and shows how and if they will even functionally operate with their entrepreneurs in the future. We also find that business angels' intuition comes from their character and relies on their previous experiences.

Another uncovered individual-level factor is emotional intelligence. It plays a significant role in business angels' decision-making, mainly arising from their ability to manage emotions in their relationship with entrepreneurs, potentially influencing their investment criteria and learning from experience. The third uncovered individual-level factor is respect, which can be detrimental to business angels' decision-making. This means that if business angels' respect is not aligned with the respect entrepreneurs expose, there is a high chance that investment will not be made.

As a fifth theoretical contribution of this dissertation, we see mapping the fragmented individual-level factors identified in previous literature and newly identified factors in our qualitative study into three sets of individual-level factors that business angels use or account for when deciding to invest in an entrepreneurial venture: a) the character-based factors, which pertain to business angel's intuition, emotional intelligence and vision; b) the experience-based factors, which take into account business angel's experiences, skills and competences, and c) the relational-based factors, which account for business angel's views of shared culture and values, respect and trust with the entrepreneurs seeking investment.

Our study findings are in line with Bandura (1999) and suggest that individual-level factors are an important part of the business angels' decision-making. We note that these factors really come "from within" the business angels' existence, from who they really are. With our individual-level factors framework, we aim to boost future research to dig deeper and provide empirical evidence of the individual-level factors in business angels' decision-making. Additionally, we call on the broader scientific community to investigate even further novel individual-level factors that emerge from our study and to explore their antecedents. More qualitative contributions would be largely beneficial in this field. Additionally, we establish a set of eighteen core propositions around which scholars can structure further, more comprehensive research, as we extensively discuss in Chapter 3.

As our sixth theoretical contribution, within Chapter 4, we present our quantitative study, which complements the business angel literature by shifting the perspective from the agent-principal relationship based on monitoring activities and ownership incentives (i.e., agency theory perspective) to the synergetic dyad perspective of reciprocity and trust (i.e., social exchange theory) in examining the determinants of relational rent creation in the relationship between business angel and entrepreneur. In this way, we provide new insights into the emergence of synergetic relationships between business angels and entrepreneurs.

Chapter 4 also provides our seventh theoretical contribution. In our quantitative study, we adopt a relational perspective to highlight the synergetic dyadic perspective of reciprocity and trust and examine the determinants of venture success in terms of achieving relational rents viewed through the business angel's perspective. Trust forms the cornerstone of this

collaboration by creating a deep connection between the business angel and the entrepreneur. This trust is expressed through relation-specific investments that are tailored to the entrepreneur's vision and the specific needs of the venture. The sharing of tangible and intangible assets, from financial resources to strategic insights and networks, underscores the robustness of this partnership and its ability to navigate the intricacies of the entrepreneurial terrain. We confirm that relation-specific investments largely depend on trust (Bammens & Collewaert, 2014; Ding et al., 2015; Sørheim, 2003), so when business angels trust their entrepreneurs, they are more likely to commit themselves to adjusting for specific investments with this entrepreneur.

Our eighth theoretical contribution comes from advancing the theoretical understanding of the performance of alliance between business angel and entrepreneur as the value of joint efforts (synergies). We explain that alliance performance is a relational rent and suggest that the interdependent relationship between business angels and entrepreneurs is framed in trust and amendments needed to sustain the investment (known as relation-specific investments). Still, we add the reasoning that this relationship depends on the venture growth stage. As the entrepreneurial venture evolves, the strategic nature of these relation-specific investments becomes critical as they guide the company through the scalability and eventual exit phases. We find that higher relational rents are particularly evident in ventures at scalability and exit stages compared to investments in ventures in nascent stages.

#### **5.4 Methodological implications**

The first methodological contribution we make in this dissertation are bibliometric methods used to review the existing scholarly literature in the business angel decision-making field. To the best of our knowledge, no studies in the business angel decision-making field use a bibliometric method that employs three different analyses to review the existing literature in business angel research. Even though there are some quantitative reviews of the literature in the business angel field in general (Arora et al., 2023; Capizzi et al., 2022; Cumming et al., 2023; Tenca et al., 2018), namely none of the existing draws such a detailed quantitative overview of the business angel field. To be more precise, we are free to say that this is the first work that provides an understanding of scholarly communication and dynamics of intellectual contributions in the business angel decision-making field and business angel research in general. The objective evaluation of scholarly contributions in the field we analyze and discuss broadly in Chapter 2. With our bibliometric analyses, we unveil collaboration networks and track the flow of knowledge through citation patterns, show clusters of knowledge, and track knowledge development over time.

The second methodological implication we consider is the robustness and interpretability of the results of those bibliometric studies, which we present in Chapter 2. When conducting co-occurrence, co-citation and bibliographic coupling analyses, methodological precision was essential to gaining meaningful insights from the scientific landscape. The selection of

the Web of Science as a database ensures a comprehensive representation of scientific output in all disciplines. We develop a systematic search strategy that includes relevant keywords, controlled vocabulary and Boolean search terms to identify relevant documents. Inclusion criteria were carefully defined to capture publications directly contributing to our research objectives. Rigorous data cleaning procedures were implemented to remove inconsistencies in the bibliographic information, and validation checks were performed to improve the accuracy of the data. Co-occurrence analysis illuminates thematic relationships by identifying frequently paired terms in the titles or abstracts of documents, reveals emerging trends and research themes, and uncovers the research frontiers in business angel decision-making. Co-citation analysis reveals the intellectual structure of the field as we identify commonly cited references, while our bibliographic coupling analysis reveals the relatedness between documents based on shared references in the business angel decision-making research. We assess the temporal dynamics of these networks to identify evolving patterns over time along with clusters where key contributions fall together. We apply normalization techniques, such as citations per document, to attenuate disciplinary differences. We use VOSviewer as a visualization tool that provides us with network graphs and heatmaps. It significantly helps to improve the interpretability of complex bibliometric patterns and to identify the most salient scientific articles, keywords, publications, or authors. Overall, this methodologically rigorous approach enables a nuanced exploration of scholarly communication and uncovers key themes, influential works and the dynamic interplay of ideas within the research field of business angel decision-making.

The third methodological contribution is the use of a phenomenological framework in the business angel research field. A range of studies have explored the use of phenomenology in entrepreneurship research, with a focus on the methodological and theoretical underpinnings of this approach (Abebrese, 2014; Cope, 2005). This has been extended to the field of international entrepreneurship, where hermeneutic phenomenology has been proposed as a relevant research paradigm (Seymour, 2006). However, Freear and colleagues (2002, p.279) point to the need for more systematic and longitudinal studies in business angel research, which could benefit from applying phenomenological methods. Unfortunately, to our knowledge, only Snellman and Cacciotti (2019) use Interpretative phenomenological analysis to analyze “the investment opportunity evaluation process at the level of angel investors’ lived experience.” Therefore, this dissertation’s phenomenological study is one of the first studies in business angel research that employs phenomenology as a research framework.

The fourth methodological implication we emphasize is using a comprehensive and in-depth analysis of the phenomenological interviews in Chapter 3. This phenomenological study uses Interpretative phenomenological analysis, which makes a methodological contribution to understanding the individual-level factors that guide business angels’ investment decisions. We use a qualitative approach with phenomenological in-depth interviews with 16 business angels to explore the nuanced and subjective aspects of their decision-making

experiences. The study specifically focused on uncovering the individual-level factors influencing business angels' investment decisions. In this study, we use snowball sampling, where we make a methodological contribution by refining the original criteria for participant selection. This allows for a dynamic approach to participant recruitment throughout the research process, increasing the sample's diversity. In addition, we also take ethical considerations into account when selecting participants. When selecting the initial participants, we ensure that they are diverse both geographically and in terms of their background and experience in the business angel community. A Chapter 3 study also shows that the participant selection process was transparent. We also address ethical considerations in relation to participants, as we consider it appropriate not to disclose participants' names fully but to identify them in our study through pseudonyms. Our data collection in the study includes semi-structured interviews that allow participants to share their personal narratives and insights about decision-making in the context of business angels. The data analysis follows the principles of Interpretative phenomenological analysis, which emphasizes the iterative process of data collection, coding and theme development. From this, we draw conclusions about the rich lived experiences business angels have in making entrepreneurial venture investment decisions. By exploring their individual-level factors and combining our personal notes about their actual behavior during each interview, a comprehensive and rich analysis of each theme that emerged in the data was elaborated on in detail. Therefore, this study makes a methodological contribution as it provides a detailed and contextually rich understanding of the complex process of business angel investment decision-making.

We see the fifth methodological implication in the complexity of the empirically tested moderated-mediation model in Chapter 4. The quantitative study presented uses SEM to test the proposed theoretical model empirically and employs empirically validated scales for latent constructs with adequate reliability, as shown by Cronbach's alpha coefficient ( $\alpha \geq 0.70$ ) (Peterson & Kim, 2013). The study provides data through 136 self-administered surveys, which is a great achievement in the context of business angel research, especially considering that the respondents are hard to reach and usually hidden members of the investment society (Farrell et al., 2008; Wetzel, 1983). This also demonstrates the meticulous research process and highlights the attention to detail in sample selection and data collection. The relatively large sample size compared to some previous samples in academic papers in this field (Avdeitchikova et al., 2008; Capizzi et al., 2022; Cardon et al., 2009; Franić & Drnovšek, 2019; Mason, 2016) ensures a robust and representative sample. The careful selection and validation of the measurement instrument further ensures methodological rigor. We assess the convergent and discriminant validity of our measurement instrument, contributing to the reliability and validity of the latent constructs in our model. The use of SEM facilitates our investigation of complex theoretical relationships in the relational rents model and allows us to understand the moderated-mediation effects within our model. In addition, it provides a methodologically advanced network for future research in business angel decision-making. Methodologically, we also contribute to a broader academic discourse by using a combination of empirically validated

scales, a well-structured survey instrument and sophisticated statistical procedures that increase the credibility and generalizability of our study's findings.

## **5.5 Practical implications**

This dissertation has several practical contributions. First, for business angels, the insights from this dissertation offer a practical guide to improve their efficiency in the venture investment sphere. Business angels can benefit from our findings on individual-level factors that impact their decision-making, especially when we tackle their character-based individual-level factors encompassing their character traits, particularly beliefs, emotions, cognitions and heuristics. By recognizing the potential biases that arise from overconfidence and self-efficacy, business angels can rethink and take additional steps to balance their decision-making and ensure a more objective evaluation of investment opportunities where appropriate. In addition, understanding the impact of emotional intelligence and passion can help business angels build stronger relationships with their entrepreneurs by emphasizing the need for empathy and effective communication. Cognitions such as intuition and vision should be used carefully to complement the analytical approach for more comprehensive decision-making. As we also see, heuristics play an essential role in business angel decision-making, so they should approach their decisions with a critical mindset to minimize the risks associated with mental shortcuts.

From this dissertation, entrepreneurs can gain valuable insight into the factors that influence business angel decision-making so that they can adjust their strategies for securing business angel investments. By recognizing the importance of business angels' character-based individual-level factors, they can tailor their pitches to business angels' preferences. Emphasizing shared values, passion and a clear vision for the company increases the attractiveness of the entrepreneurial proposition. When entrepreneurs understand the impact of cultural factors, they can manage their relationships more effectively and align their ventures with the expectations of potential business angels. Furthermore, recognizing the role of trust as a cornerstone in relationships between business angels and entrepreneurs underscores the importance of transparent communication, integrity and a commitment to shared values. Entrepreneurs can leverage this understanding to foster long-term, collaborative partnerships that go beyond financial support.

Our findings also provide a basis for educational initiatives aimed at both business angels and entrepreneurs. Educational programs can be designed to improve business angels' financial literacy and decision-making skills and focus on reducing biases created by beliefs, emotions, cognitions and heuristics. For entrepreneurs, educational modules can emphasize the importance of understanding the individual-level factors of business angels as potential investors and tailoring presentations accordingly. In addition, educational institutions can incorporate cultural intelligence modules that foster an appreciation for different points of view and prepare entrepreneurs to communicate effectively with business angels from

diverse backgrounds. In addition, educational initiatives can emphasize the role of trust in relationships between business angels and entrepreneurs and provide guidance on building and maintaining a transparent, trustworthy working relationship. Integrating these insights into curricula will equip future business angels and entrepreneurs to navigate business angel investing complexities successfully.

## **5.6 Limitations and future research**

Despite its contributions, studies within this dissertation are not without limitations. Unlike the specific limitations we provide in each study (Chapters 2-4), here we focus on limitations that arise from the overall approach to the research within the dissertation, which we present in Chapter 1. There, we outline in

Figure 1 the research path in this dissertation and provide an overview of how we examine the main research problem's conceptual background to build a better understanding of business angel investment decision-making through the mixed methods study. Additionally, in this subchapter, we briefly discuss future research venues.

First, although we achieved our research goals and applied different research methods based on triangulation in this dissertation, we still see an important limitation in our study design. The generalizability of the results obtained in this dissertation is based on several factors that should be taken into account. First of all, the use of various methodologies, bibliometric analysis, qualitative research and quantitative research (within mixed methods study), enables a holistic understanding of business angel decision-making in different settings. In contrast to the bibliometric study, which reveals the academic landscape and the development of knowledge in the business angel decision-making field, the qualitative exploratory analysis focuses on the experiences of business angels, from which context-specific insights can be gained. Nevertheless, it is important to be aware that the results of both qualitative and quantitative studies in this dissertation may be influenced by the particular characteristics of the sample and the underlying theoretical frameworks, which may limit their generalizability to other contexts. Furthermore, there are differences in the cultural, regulatory and economic context in different regions that will influence the dynamics of business angel decision-making and the significance of the factors discovered in our quantitative study. On the other hand, our research findings would be very helpful in this regard as they provide a good overview of the intricacies of business angel decision-making. However, it should be noted that generalizing the findings from this narrow population to broader populations without adequate consideration of contextual nuances and variations would be inappropriate.

To be more specific, first, we decided to conduct our study on business angel investment behavior and criteria by reviewing the existing literature in the field. In doing so, we opted for a quantitative approach through a bibliometric study to find out which keywords are relevant for the study. Although this bibliometric approach is robust and provided important

scientific input that we used in our qualitative and quantitative studies, it was not particularly useful when we had to revisit the literature to establish our theoretical framework for the subsequent studies.

Many of the specifics we encountered when examining the real-life experiences of business angels were not covered in the previously quantitatively analyzed literature and led us to other research areas (e.g., psychology). There might be two reasons for this. First, the data we use in the bibliometric study might be potentially biased because of the choice of only the Web of Science as the main source for our bibliometric analysis, which in turn potentially excludes relevant publications or misses emerging trends in the literature not included in Web of Science, and there is a possibility of common method bias (Podsakoff et al., 2003). Secondly, we limited our bibliometric study to certain search terms that were somewhat exclusive to our original idea of the study. However, our thoughts and contributions from the interviews have further developed our understanding of business angels' investment decisions and criteria and brought us closer to pre- and post-investment decision-making. Here, we must emphasize that the limitation of our multi-method bibliometric study is mainly the sample, which reflects the dynamic nature of scholarly research that may render temporal limitations as our analyses capture a snapshot of the research landscape at a specific point in time. Thus, when we come to the quantitative study, our bibliometric study seems to be outdated as new scholarly contributions were added to the research field of business angel decision-making by then. Therefore, in terms of a triangular approach, all studies need to be conducted within the same period, perhaps within one year. Here, the convergent, parallel, mixed-methods study design would be advantageous, apart from the sequential, exploratory design we decided to use. We should keep this in mind for the future when pursuing a triangular study design with a bibliometric study as the main approach for the literature review.

The second problem we encountered is related to the sampling strategies we used in Chapter 3's qualitative study and Chapter 4's quantitative study. In our exploratory sequential mixed methods research design, we first conducted a qualitative study in which our final sample included 16 business angels from Croatia, Slovenia, Italy, Spain and Portugal. Although we consider this a relevant sample that provides a cross-country understanding of their investment decisions, it may lack the cultural diversity the selected countries represent in our phenomenological interviews. While these interviews provided valuable insights into business angels' experiences of pre-investment decision-making, the results did not cover the full range of cultural differences that we would be able to observe if we included a more diverse sample from the outset. We find the same problem with our quantitative study. Although the survey data we collected from 136 business angels across Europe represents a reasonable sample size given the fact that business angels are difficult to reach (Farrell et al., 2008; Wetzel, 1983), it may not encompass the full diversity of perspectives and experiences that could emerge from a more extensive and diverse pool of respondents. This

limitation of the sample could affect the generalizability of our study's findings, and researchers need to be cautious in extending our results to a more diverse population.

Future research should, therefore, aim to broaden the geographical scope and cultural diversity of participants to increase the external validity of the studies in this dissertation (Chapters 3 and 4) and provide a more comprehensive understanding of business angel decision-making in the pre- and post-investment phases. This would mean that researchers could consider examining the experiences of business angels from different socio-economic contexts or demographic groups, which in turn could provide a more comprehensive understanding of the business angel decision-making phenomenon. Future studies could, therefore, incorporate quantitative measures to complement the other qualitative insights gained from our phenomenological interviews. A deeper exploration of business angels' emotional intelligence and intuition, as uncovered in our phenomenological study, could provide us with a new, more holistic definition of business angels and allow for a more comprehensive exploration of the individual-level factors that influence the creation of relational rents in the relationship between business angel and entrepreneur.

Additionally, future studies building on the business angels' investments may consider the relational approach as we did in our Chapter 4 to explore further how the alliance between business angel and entrepreneur creates value for both parties. It would be especially beneficial to corroborate this view by empirically testing the theoretical model of relational rent creation in the investor–entrepreneur dyad proposed by De Clercq and Sapienza (2001) for the specific context of the alliance between business angel and entrepreneur. This would add a new angle to the business angel investments' view from the knowledge-sharing perspective, especially when relational rents can be considered as a result of interaction between knowledge overlap between business angel and entrepreneur and the knowledge-sharing routines. Related to our study in Chapter 4, we call scholars to replicate our model for the entrepreneurs' sample to see both sides of the decision-making and gain a broad understanding of business angel investments.

In general, future studies on business angel investments should also take into account the emergence of crowdfunding and the associated changes in relationships between entrepreneurs and business angels. Over the past decade, crowdfunding, also known as collective microfinance, has flooded the market for new entrepreneurial ventures to raise funds (Belleflamme et al., 2014; Bessière et al., 2020; R. Brown et al., 2019; Lukkarinen et al., 2016; Mollick, 2014). With the development of crowdfunding platforms, entrepreneurs can now launch their projects and obtain capital from investors much faster and with less effort than with funding from business angels (Brown et al., 2017; Busenitz et al., 2017; Löher et al., 2018). Even if it is controversial that crowdfunding platforms now represent the first alternative for business angels (Bessière et al., 2020; Tuomi & Harrison, 2017), we must emphasize that they only provide financial resources. The benefits of mentoring and networking still depend on business angels, as we discuss in detail in this dissertation. Nevertheless, business angels use crowdfunding platforms as a solid tool to identify

investments and serve as a channel for innovative entrepreneurs to showcase their innovations and prove their durability even before they officially enter the market (Babich et al., 2021; Capizzi & Carluccio, 2016; Feola et al., 2021). We can only suppose that this newly created time gap in market presence could be a competitive advantage and a solid tool for business angels to identify potential entrepreneurial ventures earlier than before and increase the chances of finding “suitable” entrepreneurs. However, this needs to be investigated in more detail in future studies.

We must also mention the potential challenges and changes in the relationship between business angels and entrepreneurs as crowdfunding enters the venture capital market. Crowdfunding expands access to finance for entrepreneurs as it allows them to raise capital from a larger pool of supporters and investors. This benefit of crowdfunding contains the essence of democratization, which leads to investors from the marketplace finding the best inherent idea in the entrepreneurial world. It also presents a potential challenge to the current dynamics of business angel funding, as they must change their strategies to keep pace with the evolution of entrepreneurial ventures.

The traditional relationship between business angels and entrepreneurs is challenged as now the business angels in the crowdfunding context are the ones looking for profitable investments rather than the entrepreneurs trying to reach them (R. Brown et al., 2019; Kleinert et al., 2020). Even though the hierarchy remains the same (i.e. the business angel as the main investor and the entrepreneur receiving support), the roles in the relationship seem to change and urge for some new research.

Furthermore, in crowdfunding, it is common for multiple business angels to support the same entrepreneur, so with the development of crowdfunding, we are already seeing an increase in syndicated business angel investments or co-investments (Bygrave, 1987; Dimov & Milanov, 2010; Lockett & Wright, 2001; Paul & Whittam, 2010; Wesemann & Antretter, 2023). We know that syndicated business angel investments strengthen the regional business angel ecosystem and have a positive impact on co-investment networks on the performance of early-stage entrepreneurial ventures (Antretter et al., 2020; Harrison, 2018; Werth & Boert, 2013). Still, the current literature remains inconclusive on the nature of the relationship between business angels and their entrepreneurs in the crowdfunding context.

## **6 GENERAL CONCLUSION**

The character of business angels exerts a major influence on their decision-making processes. Beliefs, especially overconfidence and self-efficacy, significantly impact investment decisions. Overconfidence can lead to underestimating risks, while self-efficacy can empower business angels to take calculated risks. Emotional intelligence and passion are emotional factors that contribute to effective communication and a deeper understanding of the investment process. In addition, cognitions such as intuition and vision play a critical

role in shaping business angels' perceptions and aligning them with ventures that meet their long-term goals. While heuristics are efficient, they can lead to biases that influence decision-making and business angels need to find a balance between intuition and analytical approaches.

Entrepreneurial, management and investment experience, coupled with skills and competencies, significantly shape the decision-making of business angels. Business angels with practical experience bring valuable insight and empathy to their investments. Managerial skills enable effective advice and guidance, while technical skills contribute to sound decision-making. Entrepreneurs seeking investment should emphasize how their ventures align with the experience of business angels to demonstrate the potential for a collaborative partnership that goes beyond financial support. This wealth of experience makes business angels valuable partners in the success of the ventures they support.

Cultural factors, values, respect and trust form the background of business angel decision-making. Cultural nuances influence the way business angels see things and shape their investment philosophy. Shared values form the basis for a strong working relationship and ensure a mutual commitment to ethical standards and goals. Building trust through transparent communication and shared values is essential and contributes to the depth and longevity of the partnership. Entrepreneurs should be aware of the importance of cultural fit and emphasize how their ventures align with the investor's values to foster a successful working relationship.

This dissertation also shows that trust is central in creating relational rents in the relationship between business angels and entrepreneurs as it is cultivated through transparent communication, ethical business practices and shared values. Once trust is established, relationship benefits such as improved communication, collaboration and mutual understanding are easier to achieve. Therefore, trust becomes crucial in overcoming challenges and uncertainties in an entrepreneurial world. Trust, therefore, acts as a resilience factor that enables the relationship to cope with the complexity of the dynamic venture environment. The importance of trust goes beyond the financial aspects of the partnership. While financial investment is essential, the relational aspect of trust brings intangible benefits, such as a shared vision, mutual understanding and a commitment to long-term success. Trust becomes an important driver for the relational rents that are created in the collaboration between business angels and entrepreneurs.

This dissertation also indicates that the relationship between business angels and entrepreneurs is transformed by relation-specific investments where both parties invest time, effort and resources in working together. From the business angels' side, we find that these investments deepen the relationship and help create relational rents, leading to more sustainable partnerships. As both parties invest in the venture's success, the relationship becomes more interdependent and resilient, at least from the business angel's side. The

greater the relation-specific investment, the greater the potential for the venture's long-term success and mutual gain.

The relationship between business angels and entrepreneurs is also tempered by the stage of the venture they invest in. In the early stages, building trust is critical, and relation-specific investments may include joint planning, proof-of-concept projects as well as strategic adjustments. As the venture progresses, the relationship deepens, and more substantial investments include shared resources, joint efforts and joint expansion plans. The venture stage's moderating effect emphasizes the relationship's evolving nature, which requires adaptability and strategic direction at different stages of the entrepreneurial journey.

In summary, understanding the complex dynamics of business angel decision-making, the impact of business angels' character and the development of relationships with entrepreneurs provides a comprehensive framework for both business angels and entrepreneurs. Emphasizing the interplay of beliefs, emotions, cognitions and heuristics helps refine decision-making while recognizing the value of experience, skills and competencies positions business angels as strategic partners. The influence of culture, values, respect and trust underlines the importance of building a strong foundation for successful entrepreneurial collaboration.

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## **APPENDICES**



## **Appendix 1: Daljši povzetek (Extended summary in Slovene language)**

### **ANALIZA OBNAŠANJA IN INVESTICIJSKIH KRITERIJEV POSLOVNIH ANGELOV**

Raziskovalno področje te doktorske disertacije je podjetništvo, ki je del ekonomskih in organizacijskih ved. Ena od novih raziskovalnih smeri na področju podjetništva se ukvarja s poslovnimi angeli, ki jih imenujemo skriti člani družbe in pomembni člani podjetniškega ekosistema (Barry, 1994; Busenitz et al., 2017). V literaturi so opredeljeni kot neformalni individualni vlagatelji, ki podpirajo podjetniške podjeme v začetni ali zgodnji fazi z zagotavljanjem finančnih spodbud in mentorstva v sektorjih, v katerih se dobro počutijo, in v regijah, s katerimi se lahko povezujejo (Capizzi et al., 2022; Edelman et al., 2017; Falcão et al., 2023; Herrmann et al., 2016; Van Osnabrugge & Robinson, 2000).

#### **Opis raziskovalnega problema**

Po podatkih Evropske mreže poslovnih angelov (EBAN, 2023), "Od leta 2013 se je obseg trga naložb poslovnih angelov na evropski celini potrojil, s takratnih približno 420 milijonov evrov naložb na 1,4 milijarde evrov naložb v letu 2022" (str. 5). V istem letu je evropska skupnost naštel približno 43 340 poslovnih angelov, ki so bili odgovorni za 5 738 naložb (EBAN, 2023, str. 5). Opozoriti moramo, da ti uradni podatki združenja Evropske mreže poslovnih angelov vključujejo samo poslovne angele v poslovnih angelskih mrežah ali podobnih mrežah, skupaj z naložbami samo na vidnem trgu poslovnih angelov. Prejšnje študije na področju poslovnih angelov kažejo, da niso vsi poslovni angeli del mrež (Zu Knyphausen-Aufseß in Westphal, 2008). Zato lahko le ugibamo, kako velik je lahko obseg naložb in kakšno je dejansko število poslovnih angelov v Evropi. Kljub temu nam tržni podatki iz Evropske mreže poslovnih angelov kažejo, da se na tem večmilijonskem področju poslovnih poslov, kjer so poslovni angeli kot nosilci poslov običajno skriti člani družbe, dogaja nekaj zanimivega (Farrell et al., 2008), bodisi vključeni individualno bodisi v okviru mrež (Antretter et al., 2020; Bonini et al., 2018; Ramadani, 2012).

V vsakem primeru je pomen poslovnih angelov v svetovnem gospodarskem okolju večplasten. Predvsem imajo poslovni angeli kot individualni vlagatelji pomembno vlogo v podjetniškem okolju. Njihov končni cilj je odpraviti kritično vrzel v financiranju, s katero se soočajo številni podjetniki, zlasti v zgodnjih fazah razvoja, ko alternativni finančni viri morda oklevajo pri vlaganju v nepreverjene koncepte (Avdeitchikova in Landström, 2016; Bessière et al., 2020; Dibrova, 2015). Poslovni angeli so pripravljeni tvegati z inovativnimi idejami in nepreverjenimi poslovnimi modeli, saj podjetnikom v zgodnjih fazah zagotavljajo potrebna finančna sredstva za uresničitev njihovih poslovnih idej na trgu. Njihova posebnost je, da za razliko od drugih akterjev na področju tveganega financiranja namenjajo svoje osebno premoženje za podporo podjetjem v zgodnjih fazah in zagonskim podjetjem. Njihova finančna podpora ne le olajšuje razvoj in širjenje teh podjetij v zgodnji fazi, temveč tudi

spodbuja rast podjetniškega ekosistema (Mason in Harrison, 2004; Söderblom et al., 2016; Tuomi in Harrison, 2017).

Čeprav vemo, da so najpogostejši razlogi za naložbe poslovnih angelov pozitivni in izjemni donosi naložb (Riding et al., 2007; Sudek, 2006), in splošna poslovna priložnost (Feeney et al., 1999; Mason, 2008; Yitshaki, 2008), obstajajo dokazi, da v fazi po investiciji dodajo vrednost podjetjem bodisi s prevzemom praktične vloge bodisi z mentorstvom (Freear et al., 1995; Harrison in Mason, 1992; Politis, 2016). Poslovni angeli prinašajo svoje strokovno znanje, strateške nasvete, priložnosti za mreženje in operativno podporo (Macht in Robinson, 2009; Politis, 2008; Sørheim, 2005). Poleg tega delujejo kot spodbujevalci nadaljnjega financiranja, pri čemer izkoriščajo svoje izkušnje in dosežke, da bi pritegnili dodatna sredstva za podjetja v portfelju (Sørheim, 2005).

Čeprav znanstveniki s področja podjetništva spreminjajo svojo perspektivo in na poslovne angele gledajo z multidisciplinarnega vidika, običajno poskušajo razumeti vedenje poslovnih angelov s pomočjo trenutne ekonomske teorije, ki predpostavlja, da se posamezniki obnašajo racionalno (Malkiel, 2005; Zott in Amit, 2007) in opazujejo poslovne angele predvsem tako, da jih primerjajo z investitorji tvegane kapitala (Bonnet in Wirtz, 2012; D. K. Hsu et al., 2014; Wallmeroth et al., 2018; K. Wilson in Reimsbach-Kounatze, 2011). Vendar se s konceptualnega vidika poslovni angel in tvegani kapitalisti razlikujejo, zato pri preučevanju tveganih kapitalistov ne moremo izpeljati veliko zaključkov za poslovnega angela. Dva glavna razloga govorita v prid ločenim raziskavam poslovnih angelov in tveganih kapitalistov. Prvič, njun vir financiranja je različen: Medtem ko so tvegani kapitalisti podjetja, ki vlagajo tuj denar v že ustanovljena podjetja, poslovni angeli vlagajo lastna sredstva v obetavne poslovne priložnosti (Aernoudt, 2005; Drover et al., 2017; Sørheim in Landström, 2001). Te okoliščine vodijo do različnih odnosov do tveganja ter naložbenih meril in vedenja. Drugič, kar je z vedenjskega vidika najpomembnejše, se razlikuje način delovanja poslovnih angelov in vlagateljev tvegane kapitala. Medtem ko tvegani kapitalisti ostajajo na varni strani podjetij, v katera so investirali, tako da zahtevajo sedež v upravnem odboru in čakajo na pozitivne donose, so poslovni angeli bolj osebno vključeni in njihova vloga v podjetjih, v katera so investirali, je manj formalizirana.

Zato obstajajo dokazi, da je donosnost naložb poslovnih angelov bistveno višja od donosnosti naložb neprofitnih angelov, predvsem zaradi narave njihove osebne udeležbe (Haar et al., 1988; Mason in Harrison, 2002; Riding, 2008). Ko začnejo novo naložbo, imajo poslovni angeli "svoje edinstvene motivacije, namere, izkušnje in osebne lastnosti". (Collewaert, 2012) skupaj s svojim denarjem, časom, znanjem in socialnimi mrežami. (Freear et al., 1994; Mason, 2008; K. Wilson in Reimsbach-Kounatze, 2011). Ko podjetniki uporabijo svoje pridobljeno premoženje, nakopičene izkušnje in stike za spodbujanje zgodnjih podjetniških podvigov drugih, postanejo poslovni angeli in podjetniško reciklirajo (Mason in Harrison, 2006). Začetek obnašanja poslovnih angelov torej sprožijo predhodne podjetniške izkušnje in/ali dogodki ob izstopu iz podjetništva, zaradi česar svojo energijo,

čas, denar, izkušnje in mrežo namenijo ustvarjanju in podpiranju nadaljnjih podjetniških dejavnosti.

Poleg tega nekatere študije kažejo, da je naložbeno vedenje iracionalno zaradi naložbene namere. (Alleyne in Tracey, 2011; East, 1993) in korenine v vedenjskih finančah (Avvakumov et al., 2002; Daniel et al., 1998). Dokazi kažejo, da poslovni angeli sprejemajo naložbene odločitve na podlagi izkušenj, kognitivnih dejavnikov in hevristik, namesto da bi se zanašali izključno na kompenzacijske modele odločanja (Maxwell et al., 2011; Van Osnabrugge in Robinson, 2000). Odločanje na podlagi izkušenj pogosto vodijo iracionalno oblikovana merila odločanja (Daniel et al., 1998; H. Zhao et al., 2005). Vendar naložbe poslovnih angelov presegajo finančno podporo in vključujejo prepričanje o podjetniških sposobnostih, inovacijskem potencialu in zavezanosti dolgoročnemu uspehu. (Mason in Harrison, 2000; Mason in Stark, 2004). V zameno se podjetniki zavežejo, da bodo pametno uporabljali vloženi kapital, izvajali strateške načrte in vzdrževali komunikacijo (De Noble, 2001; Parhankangas in Ehrlich, 2014). Ta izmenjava zaupanja in zavezanosti je ključnega pomena, saj posebne naložbe v čas, znanje in vire postanejo bistvo odnosa (Cardon et al., 2017; Falcão et al., 2023; Lefebvre et al., 2022; Prowse, 1998).

Naložbeno vedenje poslovnih angelov lahko razumemo z večstopenjskim pregledom njihovih dejavnosti pred naložbo in po njej, ki vključujejo razmejitve, strukturiranje, vodenje, proces "izvajanja" (opravljanje nalog v podjetju) in spremljanje (Fili in Grünberg, 2016). Raziskave o naložbenem vedenju poslovnih angelov kažejo, da je v ta proces vključeno predvsem sprejemanje odločitev (Ding et al., 2015; Harrison et al., 2015; D. Smith et al., 2010). Medtem ko se obstoječe študije pogosto poglobljajo v finančna merila, ki jih poslovni angeli uporabljajo pri sprejemanju odločitev (Croce et al., 2017; Sudek, 2006), obstaja razmeroma ozek okvir raziskav, ki proučujejo poslovne angele kot aktivne in "osebne" sodelavce pri rasti in uspehu podjetij, v katera vlagajo. Da bi razumeli vedenje pred naložbo in dinamiko vključenosti po naložbi, moramo poslovne angele opazovati z njihovega osebnega vidika. To nam lahko zagotovi dragocen vpogled v vpliv njihove vloge v podjetniškem ekosistemu. Raziskovalci se namreč strinjajo, da so poslovni angeli pomembni v podjetniškem ekosistemu, zato jih je treba temeljito preučiti. (Edelman et al., 2017; Kelly, 2007).

Ne glede na to, ali gre za oblikovalce politik, izobraževalce, druge vlagatelje ali same aktivne podjetnike, je jasno, da moramo za razumevanje, kako lahko poslovni angeli prispevajo k podjetniškemu ekosistemu, preučiti njihovo vedenje, vendar z njihovega lastnega vidika in ne z vidika drugih vrst vlagateljev. So edinstveni, zato mora biti edinstven tudi pristop k njihovem preučevanju. Poleg tega je prav to tisto, česar sedanje raziskave še vedno nimajo - edinstvenega in podrobnega pogleda na naložbeno vedenje in merila poslovnih angelov. Zato s to disertacijo ponujamo nov pogled na celotno vlogo poslovnih angelov v podjetništvu in na njihovo naložbeno odločanje. Najprej opravimo večtehnično bibliometrično analizo literature o odločanju poslovnih angelov, da bi dobili vpogled v vzorce, trende in vpliv znanstvenih objav s tega področja. V drugem delu disertacije

poglobljeno preučujemo, kako se 16 poslovnih angelov obnaša v predinvesticijski fazi, kateri dejavniki na ravni posameznika vplivajo na njihovo odločanje in zakaj sprejemajo te naložbene odločitve. Naš glavni cilj je s fenomenološkim pristopom pridobiti širše razlage o sprejemanju naložbenih odločitev. Poleg tega v tretjem delu disertacije opazujemo vedenje poslovnih angelov v fazi po investiciji, kjer merimo, kako dejavniki na individualni ravni vplivajo na to, kako gradijo odnose s podjetniki, da bi dosegli pričakovane rezultate investicije. Predvidevamo zlasti, da je zaupanje kot dejavnik na individualni ravni pozitivno povezano z relacijskimi rentami kot rezultatom odnosa med poslovnim angelom in podjetnikom. Še vedno pa trdimo, da je ta odnos posredovan z naložbami, specifičnimi za odnos, in je odvisen od razvojne faze podjetniškega podjema. Predlagani hipotetični model smo potrdili na vzorcu 139 evropskih poslovnih angelov.

## **Raziskovalni problem, vprašanja in cilji**

Na podlagi predhodno navedenega konceptualnega pregleda vedenja in meril za naložbe poslovnih angelov je naslednje vprašanje osrednji raziskovalni problem v tej disertaciji:

*Kako poslovni angeli uporabljajo svoje dejavnike na individualni ravni pri odločanju, ko pristopajo k naložbam v podjetja, in kako so njihovi dejavniki na individualni ravni povezani z uspešnostjo podjetij, v katera vlagajo?*

Da bi raziskali ta raziskovalni problem, smo razvili celovit okvir, ki uporablja tako širok pristop k raziskovanju obstoječe literature z večtehnično bibliometrično analizo odločanja poslovnih angelov kot raziskovalno sekvenčno študijo mešanih metod. Koncepte iz kvalitativne fenomenološke študije uporabljamo kot prvo raziskovalno fazo v raziskovalni zasnovi raziskovanja z uporabo raziskovalnih zaporednih mešanih metod, da bi jih nadgradili v kvantitativni študiji.

## **Razdrobljeni znanstveni prispevki potrebujejo ustrezen pregled**

Na področju podjetništva znanstveniki včasih izvajajo interdisciplinarne raziskave s prevzemanjem konceptov in teorij z drugih raziskovalnih področij. Eden od pristopov k črpanju diad z različnih področij je oblikovanje bibliometričnega pregleda literature z analizo in vizualizacijo neformalne komunikacije med najvplivnejšimi znanstveniki na zadevnem raziskovalnem področju. Bibliometrija opisuje postopek uporabe matematičnih in statističnih metod za preučevanje procesa "pisnega komuniciranja ter narave in poteka razvoja discipline" (Pritchard, 1969). Znanost ali določeno disciplino preučuje tako, da ocenjuje uspešnost posameznih publikacij z vizualizacijo strukture in dinamike področij z uporabo podatkov iz formalnih virov (tj. publikacij, knjig, revij, člankov) (Borgman in Furner, 2005; Cobo idr., 2011; Hood in Wilson, 2001). Poleg tega omogoča prepoznavanje najvplivnejših avtorjev, prikazuje povezave med avtorji in raziskovalni skupnosti služi kot merilo za pozicioniranje trenutnih raziskav in prepoznavanje novih raziskovalnih meja (Ferreira, 2017).

Bibliometrija se aktivno uporablja v znanstvenih pregledih o določenih temah ali področjih, saj zmanjšuje morebitne pristranskosti (Garfield et al., 1983), imenuje žarišče vodilnih idej med raziskovalci, zagotavlja diado med raziskovalnimi potmi (Courtial et al., 1993; Nerur in Rasheed, 2008) in analizira razvoj znanosti (Casillas in Acedo, 2007; Coviello in Jones, 2004; D. Zhao in Strotmann, 2008).

Nedavne študije razkrivajo komunikacijo med znanstveniki na splošnem področju podjetništva, saj nekatere študije omenjajo le obstoj poslovnih angelov (Reader in Watkins, 2006; Schildt et al., 2006). Doslej so tradicionalni pregled poslovnih angelov kot raziskovalnega področja opravili (Edelman et al., 2017; Gabrielsson in Politis, 2006; Harrison, 2017). Kljub temu je sedanja literatura o naložbenem vedenju poslovnih angelov, zlasti o njihovem odločanju, precej razdrobljena. Znanstveniki s tega področja pozivajo k temeljitejšemu razumevanju akademske strukture področja podjetništva z osredotočanjem na posamezna podpodročja ter črpanjem iz specifičnih konstruktov in teoretskih diad (Busenitz et al., 2017; Cornelius et al., 2006; Schildt et al., 2006; Teixeira, 2011).

Doslej so le trije obstoječi pregledi literature s področja raziskovanja poslovnih angelov zagotovili kvalitativno razlago potencialnih raziskovalnih tem. (Edelman et al., 2017; Kelly, 2007; Wallmeroth et al., 2018). Žal moramo na tem mestu opozoriti, da je doslej le ena novejša študija opisala strukturo raziskav poslovnih angelov z analizo bibliometričnega omrežja (Tenca et al., 2018). Druge študije, ki merijo strukturo raziskav, niso dovolj specifične za poslovne angele kot individualne vlagatelje, saj le delno opazujejo to raziskovalno nišo in se bolj osredotočajo na druge vire financiranja podjetniških podvigov (Arora et al., 2023; Capizzi et al., 2022; Cumming et al., 2023; Padilla-Ospina et al., 2018; Pandey et al., 2023; Sharma et al., 2021).

Glede na vse večje število študij na tem področju se zdi, da je v veliki meri razdrobljena baza znanstvenih prispevkov skrita in včasih v teh prejšnjih pregledih literature sploh ni omenjena. Iz literature moramo izluščiti specifične diademe, da bi razumeli, kako so raziskave o poslovnih angelih v resnici strukturirane. Da bi pojasnili to premalo raziskano področje v literaturi, je prvi cilj te disertacije razviti tridelni pristop za večtehnično bibliometrično analizo področja odločanja poslovnih angelov, ki odgovarja na naslednja raziskovalna vprašanja:

*Raziskovalno vprašanje 1: Kateri so najbolj razširjeni konceptualni gradniki literature v raziskavah odločanja o poslovnih angelih?*

*Raziskovalno vprašanje 2: Kakšna je struktura znanstvene skupnosti na področju odločanja o poslovnih angelih in kako se je ta struktura razvijala skozi čas?*

*Raziskovalno vprašanje 3: Kakšna je intelektualna struktura nastajajoče literature o odločanju poslovnih angelov in kakšne so meje raziskovanja?*

Z bibliometrično analizo literature bomo zagotovili nadaljnje razumevanje razvoja raziskav poslovnih angelov in oblikovali trenutne dokaze o naložbenih odločitvah poslovnih angelov. Pregled literature o odločanju poslovnih angelov in ugotavljanje področij vpliva sta zelo pomembna, saj še naprej zagotavljata provokativne spodbude tako za poslovne angele, podjetnike, ki iščejo naložbe, kot tudi za oblikovalce politik, kar bi lahko privedlo do ponovnega premisleka in preoblikovanja naložbenih postopkov, strategij in politik ter izpostavilo pomanjkljivosti sedanje literature.

### **Odkrivanje osebnih izkušenj poslovnih angelov pri njihovem obnašanju pred naložbo**

Akadska skupnost je poslovne angele podrobno preučila. (Falcão et al., 2023; Freear et al., 1994; Harrison, 2022). Poleg svojih osebnih finančnih virov podjetjem, v katera vlagajo, zagotavljajo tudi aktivno mentorstvo in možnosti mreženja (Falcão et al., 2023; Macht in Robinson, 2009; Riding, 2008). Njihovo osebno udejstvovanje izzove dejavnike na individualni ravni pri njihovem odločanju o naložbah, zlasti če dokazi pravijo, da temelji predvsem na izkušnjah in heuristici (Maxwell et al., 2011; Van Osnabrugge in Robinson, 2000). Obstajajo tudi dokazi, da se pri sprejemanju naložbenih odločitev bolj zanašajo na kognitivne dejavnike, namesto da bi se zanašali izključno na kompenzacijske modele odločanja (Franić, 2014; Franić in Drnovšek, 2019; Maxwell et al., 2011).

Trenutne študije na tem področju se običajno osredotočajo na dejavnike na individualni ravni, ki jih izpostavljajo podjetniki in ki jih poslovni angeli prepoznavajo kot pomembne za sprejemanje svojih naložbenih odločitev (C. Clark, 2008; Collewaert, 2016; Svetek, 2022a, 2022b; Svetek in Drnovšek, 2022). Ko poskušamo širše razpravljati o tem, kateri dejavniki na individualni ravni poslovnih angelov so pomembni za sprejemanje naložbenih odločitev, se znajdemo na precej neraziskanem področju. Obstajajo dokazi, da poslovni angeli izpostavljajo zaupanje kot pomemben predhodnik njihovega odločanja o naložbah (Ding et al., 2015; Harrison et al., 1997; Sørheim, 2003) skupaj z demografskimi podatki poslovnih angelov, kot so starost, izobrazba, dohodek in spol (Becker-Blease in Sohl, 2011; Harrison in Mason, 2007; Li et al., 2014; Maxwell et al., 2011; Sohl, 2003; Wong in Ho, 2007), izkušnje (Harrison et al., 2015; Maxwell, 2016) in kultura (Block et al., 2019; Mason et al., 2019). Kljub temu, čeprav nekateri raziskovalci še vedno iščejo odgovor na vprašanje, kako to, "kdo so poslovni angeli", vpliva na njihovo odločanje o naložbah (Edelman et al., 2017; Paul et al., 2007), sedanje študije ne ponujajo veljavnih razlag. Vemo, kako je videti naložbeni proces poslovnih angelov, vendar še vedno ne vemo dovolj o tem, kaj sproži njihove naložbene odločitve, pri čemer je slednja tako trdno vpeta v predstavo o tem, kdo pravzaprav so. Zato želimo s kvalitativno fenomenološko študijo v tej disertaciji raziskati doživete izkušnje poslovnih angelov pri sprejemanju naložbenih odločitev. Tako:

*Raziskovalno vprašanje 4: Kako poslovni angeli doživljajo odločanje o naložbah?*

*Raziskovalno vprašanje 5: Katere dejavnike na individualni ravni izpostavljajo poslovni angeli pri sprejemanju naložbenih odločitev?*

## **Oblikovanje relacijskih rent v postinvesticijski fazi**

Naložbe v podjetniške podjeme so v središču dejavnosti poslovnih angelov, zavezništvo med poslovnim angelom in podjetnikom pa je namenjeno ustvarjanju gospodarske rasti s financiranjem zgodnjih faz podjetništva. Vsako leto zasledimo vse več znanstvenih prispevkov na tem področju v splošnejšem smislu (Arthurs in Busenitz, 2003; Blaseg in Hornuf, 2023; Bonnet et al., 2022; Fairchild, 2011; Gregson et al., 2017; Herrmann et al., 2016; Macht in Robinson, 2009). Večina študij prispeva k našemu razumevanju tega, kako lahko teorija zastopništva služi pri preučevanju odnosa med poslovnimi angeli in podjetniki. (Avdeitchikova & Landström, 2022; Colombo et al., 2023; Wesemann & Antretter, 2023).

Na primer, Kelly in Hay (2003) preučujeta vpliv različnih dejavnikov na obliko pogodb v odnosu med poslovnimi angeli in podjetniki, medtem ko Van Osnabrugge (2000) primerja naložbene postopke poslovnih angelov in vlagateljev tveganega kapitala ter poudarja razlike v njihovih pristopih k zmanjševanju agencijskih tveganj v odnosu s podjetniki. Vendar nobena študija ni preučevala zavezništva med poslovnim angelom in podjetnikom kot družbenega odnosa.

To je presenetljivo, saj tako poslovni angel kot podjetnik razkrijeta svoje dejavnike na individualni ravni, naložba pa ni le finančna transakcija, temveč tudi izraz zaupanja, skupne vizije in vzajemnih zavez. Njun odnos je dokaz vzajemnosti izmenjave v različnih oblikah (npr. izmenjava finančnega, socialnega in človeškega kapitala). Ko se podjetja razvijajo skozi različne stopnje rasti, se narava teh naložb prilagaja spreminjajočim se potrebam in željam obeh strani. To skupno potovanje poudarja prefinjeno družbeno izmenjavo, ki opredeljuje odnos med poslovnimi angeli in podjetniki v zgodnji fazi podjetniškega financiranja. Z vidika poslovnih angelov v tej disertaciji dodatno opazujemo njihov odnos s podjetniškimi podvigi v fazi po investiciji v okviru zaposlovanja v odnosih. Na podlagi teorije družbene izmenjave in odnosnega vidika opazujemo to dinamiko dajanja in sprejemanja, pri kateri si poslovni angeli prizadevajo za čim večje nagrade v svojem odnosu s podjetniki pri ustvarjanju trajnostnega in dobičkonosnega podjetja (Dutta in Khurana, 2023; Huang in Knight, 2017; Madanoglu, 2018).

Vse več znanstvenikov dvomi o pogosto zagovarjani edinstveni vlogi finančnih meril, ki naj bi jih poslovni angeli uporabljali pri izbiri naložb, in predlaga, da se pri izbiri naložb poslovnih angelov poiščejo mehka, težko opazna merila, ki temeljijo na osebnih dejavnikih, ki temeljijo na spoznavanju. (Huang in Pearce, 2015; Mason et al., 2017; Mason in Stark, 2004; Sudek, 2006). Tudi prejšnje raziskave so se večinoma osredotočale na neposredne učinke dejavnikov na individualni ravni poslovnih angelov na naložbene odločitve.

V nasprotju s prejšnjimi raziskavami v tej disertaciji na ta odnos med poslovnim angelom in podjetnikom gledamo skozi prizmo teorije družbene menjave in preučujemo perspektivo poslovnega angela glede dosežene relacijske rente naložbe, ki temelji na zaupanju v podjetje, v katero vlaga, in spremembah, potrebnih za ohranitev naložbe (znane kot naložbe,

specifične za odnos). Predstavljamo kvantitativno študijo, ki zajema 139 poslovnih angelov in temelji na prej predstavljeni kvalitativni fenomenološki študiji. Sprejemamo odnosno perspektivo, da bi poudarili sinergijsko diadno perspektivo vzajemnosti in zaupanja ter preučili dejavnike uspešnosti organizacije v smislu doseganja odnosnih rent, gledano z vidika poslovnega angela. To storimo z obravnavo različnih stopenj življenjskega cikla podjetja in odkrijemo, da so relacijske rente višje, kadar poslovni angeli uporabljajo naložbe, ki so vezane na odnose, v podjetjih na stopnjah razširljivosti in izstopa v primerjavi z naložbami v podjetja, ki potrebujejo dokaz o konceptu, tehnologiji ali poslovanju. Zato iščemo odgovore na naslednja vprašanja:

*Raziskovalno vprašanje 6: Kako je zaupanje poslovnih angelov v odnos med poslovnim angelom in podjetnikom povezano z ustvarjanjem relacijskih rent?*

*Raziskovalno vprašanje 7: Ali naložbe, specifične za odnos, posredujejo v odnosu med poslovnimi angeli in podjetniki v odnosu med poslovnimi angeli in podjetniki?*

*Raziskovalno vprašanje 8: Ali razvojna faza podjetja vpliva na posredni odnos med zaupanjem poslovnega angela in relacijskimi rentami v odnosu med poslovnim angelom in podjetnikom?*

## **Raziskovalni pristop in cilji**

Da bi odgovorili na prva tri raziskovalna vprašanja, smo z bibliometrično analizo pregledali obstoječe raziskave o odločanju poslovnih angelov. Najprej uporabimo analizo sočasnega pojavljanja izrazov, povezanih s konceptualnim pregledom raziskav, nato pa še analizo socitiranja dosedanjih raziskav. Nazadnje je namen analize bibliografskih povezav izpostaviti omejitve raziskav na področju odločanja poslovnih angelov.

Raziskovalni cilj 1: Odkriti konceptualne gradnike literature na področju raziskovanja odločanja o poslovnih angelih.

Raziskovalni cilj 2: Odkriti, kako se je sčasoma razvijala struktura znanstvene skupnosti na področju odločanja o poslovnih angelih.

Raziskovalni cilj 3: Ogledati si intelektualno strukturo nastajajoče literature in izpostaviti meje raziskovanja literature o odločanju poslovnih angelov.

V drugem delu te disertacije želimo z mešanim pristopom opredeliti odločanje poslovnih angelov. Po definiciji so mešane metode raziskovalni postopek, ki ponuja zbiranje, analizo in vključevanje tako kvalitativnih kot kvantitativnih podatkov na določeni stopnji raziskovalnega procesa, vendar v okviru ene same študije, z namenom boljšega razumevanja

raziskovalnega vprašanja (Creswell, 2003; Tashakkori in Creswell, 2003). V tej disertaciji uporabljamo zaporedno raziskovalno zasnovo (Ivankova et al., 2006) v dveh fazah.

V naši prvi fazi, kvalitativni študiji, smo izbrali fenomenološko stališče in obravnavali odločanje kot pojav, ki ga lahko poslovni angeli povezujejo s svojimi življenjskimi izkušnjami pri sprejemanju naložbenih odločitev, ter preučili, kateri dejavniki na ravni posameznika imajo vlogo pri odločanju poslovnih angelov. V tej študiji uporabljamo fenomenološko lečo in opravljamo intervjuje s 16 namensko izbranimi evropskimi poslovnimi angeli, da bi poglobili razumevanje odločanja poslovnih angelov. Raziskovalni cilji te faze študije so:

Raziskovalni cilj 4: Raziskati in podrobneje razumeti življenjske izkušnje in subjektivne perspektive poslovnih angelov, ki so imeli izkušnje z vlaganjem v podjetniške podjeme, ter odkriti temeljne pomene in bistvo njihovih izkušenj.

Raziskovalni cilj 5: Odkriti nove dejavnike poslovnih angelov na individualni ravni, ki morda niso zajeti v sedanji literaturi, vendar so pomembni pri njihovem odločanju o naložbah.

Po končani kvalitativni fazi študije sledi zbiranje in analiza kvantitativnih podatkov iz raziskave 136 poslovnih angelov iz evropskih držav, da bi preverili povezave med spremenljivkami, pridobljenimi v kvalitativni fazi. Za preverjanje našega hipotetičnega modela o tem, kako se v odnosu med poslovnim angelom in podjetnikom oblikujejo relacijske rente, uporabljamo modeliranje strukturnih enačb. Zato so cilji raziskave naslednji:

Raziskovalni cilj 6: Opazovati, kako je zaupanje v odnosu med poslovnim angelom in podjetnikom povezano z ustvarjanjem relacijske rente.

Raziskovalni cilj 7: Odkriti potencial za odnos specifičnih naložb in njihovo posredniško vlogo med zaupanjem in relacijskimi rentami v odnosu med poslovnim angelom in podjetnikom.

Raziskovalni cilj 8: Ugotoviti, kako faza razvoja podjetja vpliva na posredni odnos med zaupanjem in relacijskimi rentami.

Zato druga faza raziskave temelji na prvi fazi, obe fazi raziskave pa sta povezani. S praktičnega vidika je cilj študije dvojen. Prvič, želimo razumeti dejavnike poslovnih angelov na individualni ravni, kjer se podjetniki v zgodnji fazi razvoja potegujejo za njihove naložbe. Drugič, poglobljamo se v to, kako se prilagoditi njihovim konkurenčnim politikam. Poleg tega študija družbi poslovnih angelov zagotavlja informacije o tem, kako so dejavniki na individualni ravni povezani z njihovim naložbenim vedenjem.

## Struktura disertacije

Disertacija je strukturirana na naslednji način. Po uvodu je v 2. poglavju pregled literature s področja odločanja poslovnih angelov. V njem so s tridelnim pristopom obravnavani razvoj glavnih konstruktov, diademi znanja, razvoj raziskav skozi čas in omejitve raziskav na področju odločanja poslovnih angelov. Izhajajoč iz glavnih konstruktov in razsežnosti znanja, v 3. poglavju s fenomenološko optiko preučujemo pojav odločanja poslovnih angelov in razkrivamo nove dejavnike na ravni posameznika poslovnih angelov, ki vplivajo na njihove naložbene odločitve. Na podlagi razkritih dejavnikov na individualni ravni v 4. poglavju empirično preverimo hipotetični model vpliva dejavnikov na individualni ravni na relacijske rente. Poglavja 2, 3 in 4 vsebujejo podpoglavja o teoretičnem ozadju, metodoloških vprašanjih, rezultatih in razpravi. V 5. poglavju te disertacije je predstavljena širša razprava o rezultatih predhodnih študij, v kateri navajamo dodatne implikacije za teorijo in prakso ter omejitve študije in možnosti za prihodnje raziskave. Zadnje, 6. poglavje zaključuje disertacijo. Po poglavju z literaturo se zadnja dva dela nanašata na priloge in podroben povzetek disertacije v slovenskem jeziku.

## Povzetek glavnih ugotovitev

V študijah te disertacije smo ugotovili, da so naložbene odločitve in merila poslovnih angelov razdeljeni v dve različni fazi. Prva je odločanje pred naložbo, na katero močno vplivajo nefinančna merila in ima korenine v dejavnikih na individualni ravni poslovnih angelov, ki zadevajo njihov značaj, izkušnje in odnose s podjetniki. Druga faza je odločanje po naložbi. V tej fazi opazujemo odnos med poslovnimi angeli in podjetniki kot zavezništvo, katerega cilj je ustvariti vrednost (tj. uspešnost zavezništva obravnavamo kot relacijske rente). Ugotavljamo namreč, da zaupanje poslovnih angelov ustvarja relacijske rente v odnosu med poslovnim angelom in podjetnikom, vendar so te posredovane z naložbami, specifičnimi za odnos, in moderirane s stopnjo razvoja podjetja. V naslednjih razdelkih podrobno obravnavamo te raziskovalne ugotovitve in pokažemo, kako je vsaka od njih skladna z raziskovalnimi cilji te disertacije.

*Raziskovalni cilj 1: Odkriti konceptualne gradnike literature na področju raziskovanja odločanja o poslovnih angelih.*

Prvi cilj, ki smo ga dosegli v naši bibliometrični študiji, je analiza sočasnega pojavljanja ključnih izrazov v poglavju 2. Analiza 1.009 znanstvenih člankov iz podatkovne zbirke Web of Science, ki so bili objavljeni v revijah z recenzijo ali so bili pregledi literature med januarjem

1981 in marcem 2019, daje zemljevid sočasnega pojavljanja 4.921 ključnih besed. Naša analiza razkriva tri glavne grozde ključnih besed v mreži področja: (a) uspešnost odločanja poslovnih angelov v neformalnih naložbenih mrežah, (b) poslovni angeli kot individualni vlagatelji in (c) poslovni angeli v primerjavi z investitorji tveganega kapitala. Ugotavljamo, da so konceptualni gradniki literature na področju odločanja poslovnih angelov večinoma iz

ekonomije in področij poslovnih raziskav. Poudarjamo, da je konceptualni okvir poslovnih angelov močno povezan s konceptom tveganega kapitala ter uspešnostjo na področju inovacij in zasebnega podjetništva.

Poleg tega ugotavljamo, da raziskave poslovnih angelov kažejo, da so lastniške strukture in koncepti podjetniških financ (tj. nestanovitnost, donosi, množično financiranje lastniškega kapitala, odločanje, trg tveganega kapitala in rast) pogosto vključeni v študije odločanja poslovnih angelov. Nedavne študije na tem področju pa kažejo, da trenutnega znanstvenega razvoja na področju odločanja poslovnih angelov ne poganjajo le finančni koncepti, temveč tudi koncepti s področja tehnološkega napredka in socialne psihologije (npr. zavezanost, potrošnja, sprejemanje uporabnikov, izkušnje, vzorci itd.) Ta analiza v okviru naše večtehnološke bibliometrične študije kaže, da za naložbene odločitve poslovnih angelov niso pomembna le finančna merila, temveč tudi vzorci odločanja in psihološke spodbude določajo, kako in zakaj poslovni angeli sprejemajo svoje naložbene odločitve. Kljub temu ugotavljamo tudi, da je to področje zelo tesno povezano z napredkom raziskav na področju tveganega kapitala, kar je treba v prihodnje razlikovati, saj se ti dve vrsti vlagateljev na trgu tveganega kapitala bistveno razlikujeta, kot je bilo obravnavano v 1. poglavju.

*Raziskovalni cilj 2: Odkriti, kako se sčasoma razvija struktura znanstvene skupnosti na področju odločanja o poslovnih angelih.*

Drugi raziskovalni cilj smo dosegli z bibliometrično analizo socitiranja literature o odločanju poslovnih angelov v poglavju 2. Identificiramo 280 publikacij s skupno 4.151 citati ob koncu marca 2019, pri čemer izpostavljamo prevladujoče študije na tem področju in opredeljujemo devetnajst grozdov znanja znotraj štirih razvojnih intervalov. Ugotavljamo namreč, da se znanstvena komunikacija na področju odločanja poslovnih angelov začne konec osemdesetih let prejšnjega stoletja, kjer naletimo na štiri ločene grozde znanja: (a) menedžersko vedenje, (b) etnično podjetništvo, (c) hevristično odločanje in priporočilne mreže ter (d) naložbena merila in vedenje vlagateljev tveganega kapitala. Drugi interval znanstvenega komuniciranja na področju odločanja poslovnih angelov se nanaša na članke, objavljene v devetdesetih letih prejšnjega stoletja. Tu vidimo pet sklopov znanja: (a) vlagatelji poslovnih angelov v primerjavi z vlagatelji, ki niso poslovni angeli, (b) odnos do naložb poslovnih angelov in meddržavne naložbe, (c) individualno-kakovostne izkušnje v procesu odločanja, (d) merila za naložbe poslovnih angelov in (e) nadaljevanje razprave o etničnem podjetništvu.

Tretje obdobje v letu 2000 je prineslo gostejše sodelovanje na področju odločanja o poslovnih angelih, gostota mreže socitativ pa odraža bogato in zgoščeno intelektualno sodelovanje med znanstveniki. Glavna mesta objavljanja v letu 2000 so bila *Venture Capital*, *Journal of Business Venturing* ter *Entrepreneurship Theory and Practice*, kjer je bila objavljena velika večina vplivnih člankov. V letu 2000 opazamo širjenje šestih različnih skupin znanja: (a) podcenjena vloga poslovnega angela, (b) lokalni oblikovalci politik in čezmejni vlagatelji tveganega kapitala, (c) teorija zastopstva in upravljanje podjetij, (d)

geografski pogledi na financiranje poslovnih angelov, (e) merjenje naložbene dejavnosti poslovnih angelov ter (f) etnično in priseljsko podjetništvo. Tretji interval akademskih prispevkov v letu 2000 je najpomembnejši z vidika moči odnosov socitiranja. Večina empiričnih študij v tem intervalu se pogosto citira skupaj. Poleg tega se pojavijo prvi formalni pregledi literature, raziskave poslovnih angelov pa se konceptualno pomikajo k bolj interdisciplinarnim raziskavam (tj. konceptualni vpliv financ, prava in sociologije).

Na podlagi te analize socitiranja vidimo gostoto intelektualnih prispevkov. Ugotavljamo, da se področje odločanja poslovnih angelov v zgodnjih fazah raziskave opira na prvega možnega primerjalca - vlagatelje tveganega kapitala. Čeprav je cilj njihovega odločanja enak, obstajajo med tema dvema vrstama vlagateljev bistvene razlike. Razlike temeljijo predvsem na bolj hevrističnem odločanju na trgu poslovnih angelov in bolj formaliziranih naložbah na trgu vlagateljev tveganega kapitala. Zgodnje raziskave na področju odločanja poslovnih angelov jasno razlikujejo med tema dvema vrstama vlagateljev in spodbujajo raziskave o bolj personaliziranih procesih odločanja. Drugič, zgodnja prevlada raziskav posebnosti poslovnih angelov (tj. značilnosti, ozadje, naložbeni vzorci) spodbuja organsko rast znanja na tem področju. Poleg tega psihološke značilnosti poslovnih angelov pri odločanju poslovnih angelov predstavljajo diado med podjetništvom in socialno psihologijo, s čimer povečujemo nabor razpoložljivih teoretičnih podlag za prihodnje raziskave.

*Raziskovalni cilj 3: Ogle dati si intelektualno strukturo nastajajoče literature in izpostaviti meje raziskovanja literature o odločanju poslovnih angelov.*

Tretji raziskovalni cilj dosežemo z analizo bibliografskih povezav v okviru bibliometrične študije. V 2. poglavju svojo raziskavo uskladimo z merili znanstvene pomembnosti prek bližine povezav spajanja med dokumenti v bibliometrični mreži in se osredotočimo na posebnosti teh diad. Zajemamo znanstvene članke, objavljene med januarjem 2015 in decembrom 2019, pri čemer vključujemo vse članke ne glede na njihovo citiranost, saj skušamo prikazati meje trenutnih raziskav (tj. nekateri članki, objavljeni v času analize, morda še niso bili citirani). Pri analizi smo izhajali iz 174 znanstvenih člankov in naleteli na to, da so prispevki s tega področja od leta 2015 dosegli 53-odstotno stopnjo rasti.

Med publikacijami z največjo močjo povezav najdemo *Venture Capital* z 22 % celotne moči povezav na tem področju, sledijo *Handbook of Research on Business Angels* (10 %), *Foundations and Trends in Entrepreneurship* (6 %) in *International Small Business Journal - Researching Entrepreneurship* (6 %). Z analizo bibliografskih povezav smo opredelili sedem sklopov nastajajočega znanja, v katerih zagotavljamo vpogled v neraziskano področje raziskav odločanja poslovnih angelov. To so (a) odločanje v skupini poslovnih angelov, (b) raziskovalna agenda poslovnih angelov, (c) narava odločanja poslovnih angelov, (d) množično financiranje kot prva alternativa financiranju poslovnih angelov, (e) financiranje etničnega podjetništva in podjetništva priseljencev, (f) vprašanja spola pri financiranju poslovnih angelov in (g) utemeljitev financiranja tveganega kapitala.

Meje raziskovanja na področju odločanja poslovnih angelov se premikajo proti novim trendom, ki jih opažamo v praksi. kot pomembni se kažejo skupinske naložbe poslovnih angelov ter medsebojni vpliv socialnopsiholoških dejavnikov in finančnih meril pri sprejemanju končnih odločitev. Pojavljajo se alternativne možnosti financiranja, ki močno vplivajo na samo področje. V raziskavah o množičnem financiranju se pojavljajo trendi vrednotenja naložb, predlagana pa so tudi spremenjena finančna merila. Poleg tega jasno prevladujejo dinamične raziskave čustev in upravljanje vtisov, pri čemer koncepti, kot so zaupanje, intuicija in strast, določajo meje raziskav.

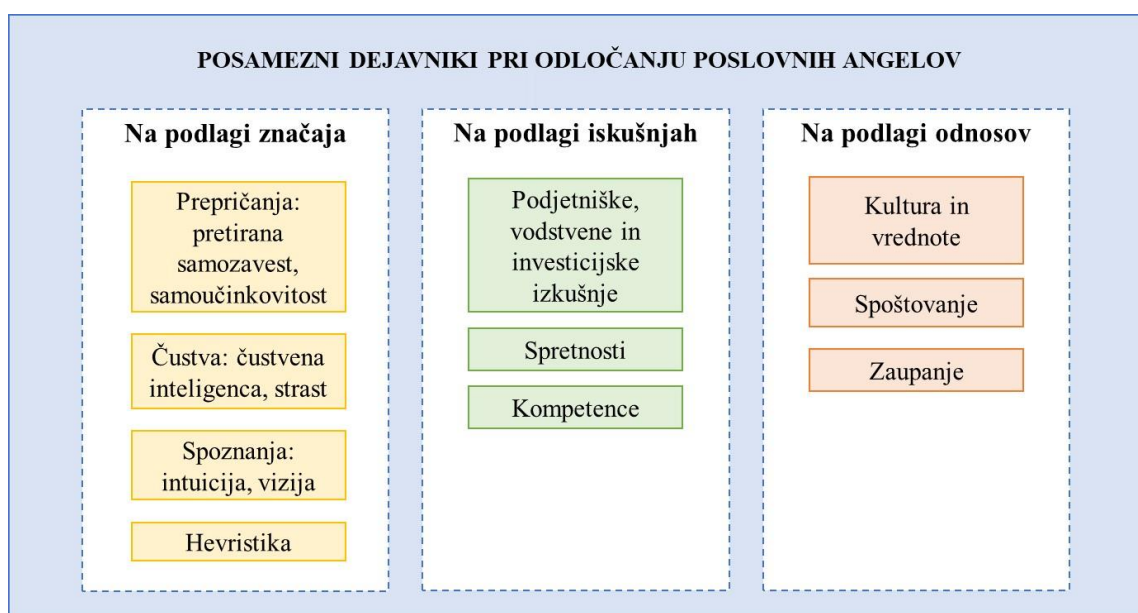
Ugotavljamo, da imajo pri odločanju o poslovnih angelih običajno pomembno vlogo finančno usmerjena merila in da se pri odločanju pojavljajo nove teme, ki temeljijo na osebnostnih dejavnikih. Zlasti to usmerja naš naslednji raziskovalni cilj 4, v katerem bomo raziskali, kako so dejavniki na ravni posameznika vidni pri odločanju poslovnih angelov in kako lahko vplivajo na odločanje o naložbah.

*Raziskovalni cilj 4: Raziskati in podrobneje razumeti življenjske izkušnje in subjektivne perspektive poslovnih angelov, ki so imeli izkušnje z vlaganjem v podjetniške podjeme, ter odkriti temeljne pomene in bistvo njihovih izkušenj.*

Ta cilj smo dosegli s poglobljeno fenomenološko kvalitativno študijo, ki temelji na intervjujih s 16 evropskimi poslovnimi angeli, kot je opisano v poglavju 3. Dopolnjujemo prejšnje akademske ugotovitve, da poslovni angeli strogo analizirajo finančne napovedi, tržne pogoje in poslovne načrte da bi ocenili potencialne donose (Capizzi, 2015; Granz et al., 2020; Gregson et al., 2017) in smo ugotovili, da imajo pri njihovem odločanju ključno vlogo dejavniki na individualni ravni. Ugotavljamo, da poslovni angeli svoje naložbe v podjetniške podjeme pogosto doživljajo kot osebne podvige, pri katerih je njihovo odločanje občutljivo ravnovesje med ocenjevanjem finančne upravičenosti in dejavniki na njihovi individualni ravni. Naša študija potrjuje, da poslovni angeli svoje odločanje oblikujejo na podlagi kognitivnih konstruktov (Franić, 2014) in ne uporabljajo popolnoma kompenzacijskega pristopa k odločanju (Maxwell et al., 2011; Van Osnabrugge in Robinson, 2000).

Naše ugotovitve pa so še daljše od prejšnjih študij, saj ugotavljamo, da je odločanje poslovnih angelov povezano tudi z njihovim značajem, izkušnjami in odnosi, ki jih poslovni angeli vzpostavijo s podjetniki. Zato dejavniki na ravni posameznika, ki jih ugotavljamo v naši študiji, spadajo v tri različne kategorije: na podlagi značaja, izkušenj in odnosov, kot prikazujemo na sliki A1.

*Slika A1: Posamezni dejavniki pri odločanju poslovnih angelov*



*Vir: Lastno delo.*

*Raziskovalni cilj 5: Odkriti nove dejavnike poslovnih angelov na individualni ravni, ki morda niso zajeti v sedanji literaturi, vendar so pomembni pri njihovem odločanju o naložbah.*

Ta raziskovalni cilj smo dosegli s poglobljeno fenomenološko študijo v 3. poglavju. Pri analizi naletimo na več dejavnikov poslovnih angelov na ravni posameznika, ki v dosedanji literaturi niso razkriti ali pa niso dovolj razkriti, da bi iz njih lahko izpeljali nadaljnje zaključke. Rezultati naše študije kažejo, da je intuicija bistvena sestavina značaja poslovnih angelov, saj odraža njihovo sposobnost, da se opirajo na svoje s časom izpopolnjene instinkte in predhodne izkušnje z intuitivnim sprejemanjem odločitev. Ugotavljamo tudi, da je intuicija poslovnih angelov tesno povezana s čustveno inteligenco, saj vključuje prepoznavanje in razlago subtilnih čustvenih namigov podjetnikov. Naša študija kaže, da visoka raven čustvene inteligence poslovnim angelom omogoča, da zaupajo svojim instinktom, za katere je pogosto značilno poglobljeno razumevanje trga tveganega kapitala in dinamike. Tako intuicija kot čustvena inteligenca sta v trenutni literaturi o odločanju poslovnih angelov zanemarjeni.

Poleg tega ugotavljamo, da so vrednote poslovnih angelov vodilo pri prepoznavanju in izbiri naložbenih priložnosti, saj vključujejo njihove temeljne vrednote in ideale. Odločitve o naložbah sprejemajo na podlagi tega, ali so podjetniki skladni z njihovimi vrednotami. Naši rezultati kažejo, da ima kultura pomembno vlogo pri oblikovanju teh vrednot. Pri odločanju poslovnih angelov naletimo na številne kulturne razlike, ki jih postavljamo v kontekst razdalje moči, da bi jih bolje poudarili. Ugotavljamo, da je vloga poslovnega angela v odnosu s podjetnikom v vseh naših podatkih na splošno enaka: mentor, svetovalec in vlagatelj. Kljub temu je hierarhija v našem vzorcu drugačna, kar se zdi, da vpliva na način, kako poslovni

angeli sprejemajo različne odločitve zaradi kulturnih razlik, in je povezano z osebno družbeno dinamiko, uokvirjeno okoli spoštovanja poslovnih angelov. Tako naša študija ugotavlja, da je spoštovanje poslovnih angelov tesno povezano s kulturo, saj ga oblikuje kulturni kontekst, v katerem poslovni angeli odraščajo in sodelujejo. Žal to vprašanje spoštovanja v dosedanjih študijah literature o poslovnih angelih ni bilo omenjeno, kar nam omogoča, da naredimo korak naprej pri odkrivanju in razumevanju novih dejavnikov na ravni posameznika, pomembnih pri odločanju o naložbah poslovnih angelov.

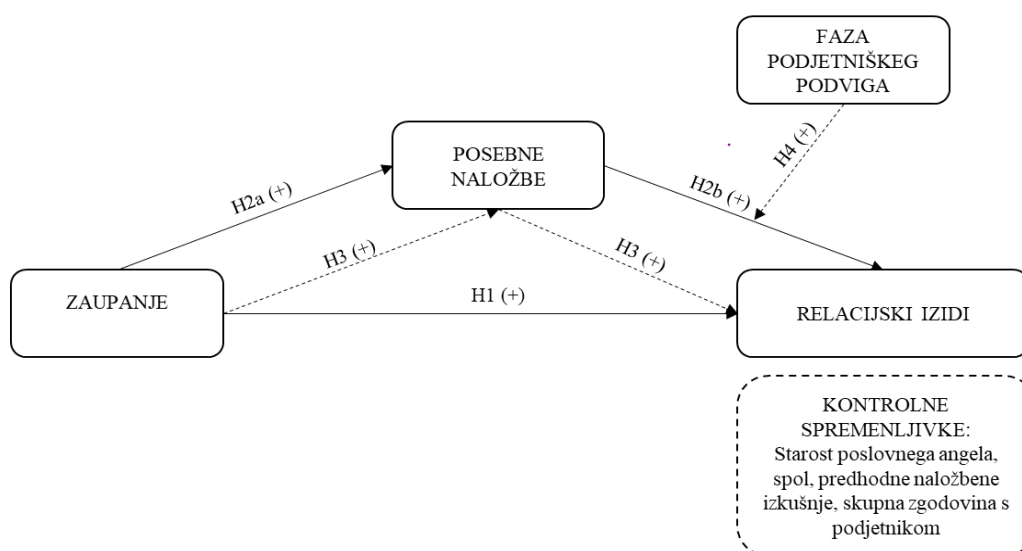
*Raziskovalni cilj 6: Opazovati, kako je zaupanje v odnosu med poslovnim angelom in podjetnikom povezano z ustvarjanjem relacijske rente.*

*Raziskovalni cilj 7: Odkriti potencial za odnos specifičnih naložb in njihovo posredniško vlogo.*

*Raziskovalni cilj 8: Ugotoviti, kako faza razvoja podjetja vpliva na posredni odnos med zaupanjem in relacijskimi rentami.*

Da bi dosegli zadnje tri cilje, empirično potrdimo model moderiranega posredovanja za razmerje med zaupanjem poslovnih angelov in vloženimi relacijskimi rentami podjetniškega podjetja, kot je prikazano v poglavju 4. Naš model temelji na predpostavki, da je zaveznitvo med poslovnim angelom in podjetnikom družbeno razmerje, v katerem obe strani razkrijeta svoje dejavnike na individualni ravni, naložba pa ni le finančna transakcija, temveč tudi manifestacija zaupanja. Stalno interakcijo in sodelovanje med poslovnim angelom in podjetnikom označujemo z ravnovesjem med prispevki in koristmi v obliki naložb, specifičnih za odnos. Zato ta model ponazarja naravo procesa družbene izmenjave na področju podjetniškega tveganega financiranja in mentorstva. Model je prikazan na sliki A2.

*Slika A2: Konceptualni model*



*Vir: Lastno delo.*

V tem okviru socialne izmenjave tako poslovni angel kot podjetnik prispevata sredstva in v zameno prejmeta koristi. poslovni angeli vlagajo finančni kapital, znanje o panogi in dragocene mreže, podjetniki pa zagotavljajo poslovni koncept, inovacije in predanost, da podjetje nadaljuje svojo dejavnost. Odnos med poslovnim angelom in podjetnikom, ki temelji na vzajemnih koristih in vzajemnosti, pojmujemo kot proces socialne izmenjave in ga umeščamo v središče teorije socialne izmenjave.

V naši študiji modeliramo odnos med poslovnimi angeli in podjetniki. Trdimo, da so poslovni angeli, ki zaupajo svojim podjetnikom, pripravljeni sodelovati pri določenih naložbah s tem podjetnikom. To pa vodi k boljši finančni uspešnosti zavezništva, ki jo imenujemo relacijske rente, zlasti ko je podjetniško podjetje zrelo za razširitev in izstop. Zaupanje je pomembno za doseganje finančne uspešnosti zavezništva, vendar se njegov učinek prenaša prek naložb, specifičnih za razmerje. Ta model empirično preverjamo na vzorcu 139 poslovnih angelov v Evropi. To dinamično razmerje je dokaz moči skupnega sodelovanja, kjer poslovni angel in podjetnik s skupnimi prizadevanji ne dosegeta le finančnega uspeha, temveč s sinergijami prispevata tudi k splošni odpornosti, iznajdljivosti in strateški prilagodljivosti podjetja.

### **Teoretične implikacije**

Razprava o ugotovitvah, kot je opisana prej, kaže, kako poglavja posledično dosegajo posebne raziskovalne cilje. Teoretični prispevki za posamezna poglavja pa so razdelani na naslednji način.

V drugem poglavju je predstavljena bibliometrična analiza raziskav odločanja poslovnih angelov, ki temelji na več tehnikah. Zato je prvi teoretični prispevek, ki ga dajemo v tej disertaciji, krovni pregled literature, ki na široko raziskuje glavne ključne besede na področju odločanja poslovnih angelov ter razkriva osrednja razmerja med ključnimi raziskovalnimi objavami in strukturo znanstvene skupnosti. Poleg tega prikazujemo razvoj raziskovalne strukture na področju odločanja poslovnih angelov skozi čas in dajemo vpogled v to, kam bi se raziskave lahko usmerile v prihodnosti.

Naša bibliometrična študija, predstavljena v poglavju 2, je pomemben teoretični prispevek, saj odkriva skrite vzorce znanstvenega komuniciranja, trende in odnose znotraj korpusa literature. Zato bogati naše razumevanje raziskav odločanja. Prvi teoretični prispevek namreč dajemo s sistematičnim preučevanjem vzorcev soprisotnosti v okviru naše bibliometrične študije. To pa razkriva dve skupini ključnih raziskovalnih izrazov. Prvi grozd ključnih izrazov razkriva pojme, ki večinoma izhajajo s področja ekonomije in poslovnih raziskav, drugi grozd pa se ukvarja s širšo pojmovno distribucijo poslovnih angelov v tehnološkem napredku in poslovne angele povezuje s področjem socialne psihologije. poslovni angeli kot ključni izraz močno temelji na "uspešnosti", ta dva izraza pa sta se začela pojavljati skupaj okoli leta 2014. Iz naše študije tudi vidimo, da je uspešnost prevladujoč kazalnik uspeha, kjer je močno povezana z merjenjem donosnosti naložb poslovnih angelov

prek širšega obsega finančnih meril, kot je interna stopnja donosa (Aernoudt, 2005; Freear et al., 1995; Gregson et al., 2017). V naši študiji naletimo tudi na uspešnost poslovnih angelov, ki je tesno povezana s poslovnimi angeli kot nosilci poslov, vključenimi v naložbe v podjetniške podjeme v okviru formalizirane mreže, kot so sindikati poslovnih angelov (Bonini et al., 2019). poslovni angeli svoj prispevek k podvigom, v katere vlagajo, izpostavijo s prispevkom svojih spretnosti, strokovnosti, znanja in stikov k podjetniškemu podvigom (Lumme et al., 1998). in izpostavljajo podjetniško usmerjenost kot pomemben predpogoj za svoje naložbene dejavnosti (Lindsay, 2004). Na tem področju obstaja tudi tok literature, ki "uspešnosti" daje bolj vedenjski vidik, kjer Capizzi (2015) opisuje, da večja uspešnost naložb poslovnih angelov določa učinkovitejši trg tveganega kapitala, kjer večjo uspešnost naložb določajo višje ravni poslovnih izkušenj poslovnih angelov in višje stopnje zavrnitve naložb (Capizzi, 2015).

V drugem sklopu ključnih izrazov vidimo, da so poslovni angeli v veliki meri povezani s "podjetništvom", saj s svojim podjetniškim ozadjem ali naložbami prispevajo k spodbujanju gospodarske rasti. To nam omogoča širšo opredelitev poslovnih angelov kot vlagateljev s podjetniško usmeritvijo, ki izpostavljajo svoje spretnosti, izkušnje, strokovno znanje, znanje in stike s tem, da izkoriščajo uspešnost poslovanja podjetniških podjetij, v katera vlagajo, in tako končno spodbujajo gospodarsko rast.

Drugi in najobsežnejši teoretični prispevek izhaja iz naše analize socitiranja glede tega, kako poteka konceptualni razvoj skozi čas. Opredelili smo štiri raziskovalne intervale znanstvenega razvoja odločanja o poslovnem kotu, ki jih na splošno predstavljamo na sliki 2 (glej poglavje 2). Ugotovili smo, da so raziskave odločanja poslovnih angelov začele konceptualni razvoj že v osemdesetih letih prejšnjega stoletja. Ena od nepričakovanih ugotovitev je bila, da čeprav je Wetzel objavil prvi članek o odločanju poslovnih angelov (Wetzel, 1983), so podlago za študije že pred 80. leti prejšnjega stoletja v glavnem spodbudile finančne in psihološke raziskave o naložbenem vedenju. V tem intervalu naletimo tudi na štiri sklope znanja, ki so večinoma utemeljeni na raziskavah preseka financ in psihologije, s podrobnejšimi razlagami, namenjenimi okolici poslovnih angelov. Na samem začetku se je odločanje poslovnih angelov opiralo na hevristično odločanje in povezave v referenčnih mrežah. Te ugotovitve so še dodatno podprle idejo, uveljavljeno v prejšnjih pregledih literature, da je odločanje poslovnih angelov zelo odvisno od kakovosti poslovne mreže, medtem ko so bile naložbene odločitve običajno izdane na podlagi kratkoročnega odločanja (Drover et al., 2017; Edelman et al., 2017; Harrison, 2017; Wallmeroth et al., 2018).

Drugi opazovani časovni interval razvoja raziskav odločanja poslovnih angelov so devetdeseta leta prejšnjega stoletja, kar nam omogoča raznolik pogled na naložbe poslovnih angelov. Glavno spoznanje, ki ga povzamemo iz tega intervala literature, je, da se poslovni angeli ne osredotočajo le na ideje, temveč tudi na njihovo ustrezno izvedbo. Zato je kakovost vodje (izvršnega direktorja ali lastnika) podjetja eno od najpomembnejših meril pri odločanju poslovnih angelov o naložbah. Za uspešno financiranje je ključnega pomena, da

se poslovni angel in vodstvo podjetja dobro ujemata v pričakovanjih. Torej ne gre za to, kdo je jezdec ALI konj. Za popolno ujemanje sta pomembna jezdec IN konj. V devetdesetih letih prejšnjega stoletja so se pojavili prvi dokazi, da razlike med poslovnimi angeli in nepodjetniškimi angeli niso tako pomembne glede uporabe formalne naložbe.

Še pomembneje pa je, da so se razlikovali v psiholoških dejavnikih, ki so vplivali na postopek odločanja in uspeh podjetja. Ta interval kaže tudi na močno uporabo psiholoških teorij, ki poudarjajo odločanje poslovnih angelov prek zaznane naložbene namere kot dejavnosti, povezane z zaupanjem. S psihološkega vidika imajo novi koncepti, kot je zaupanje, ključno vlogo v okolju odločanja poslovnih angelov. Hevristika pri odločanju oblikuje dinamiko na tem raziskovalnem področju.

Naša študija je pokazala tudi, da eden od glavnih raziskovalnih tokov na področju odločanja poslovnih angelov poudarja pomen geografske bližine za odločanje poslovnih angelov, kot je pozneje poudaril Drover in sodelavci (2017) in Edelman in sodelavci (2017). To v glavnem pomeni, da je geografska bližina eno od ključnih naložbenih meril poslovnih angelov, tako na ravni posameznika kot na ravni skupine. Naša analiza je pokazala, da je koncept "naložbene bližine" omejen v študijah iz devetdesetih, dvajsetih in dvajsetih let prejšnjega stoletja, kjer so geografski vidiki financiranja poslovnih angelov upoštevali tudi prakse čezmejnih vlagateljev tveganega kapitala in se uskladjali z lokalnimi naložbenimi politikami.

V letu 2010 so se pojavile prve empirične študije o sindikatih poslovnih angelov, naložbeni proces pa se je spremenil v bolj socialnopsihološko usmerjeno sklepanje poslov. Edelman in sodelavci (2017) so predhodno opisali sindikate in skupinske odločitve o financiranju kot eno od nastajajočih tipologij za naložbe poslovnih angelov. Čeprav v letu 2010 poslovni angeli ostajajo edini najzanesljivejši vir dobro vodenih in mentoriranih neformalnih kapitalskih naložb za podjetja v zgodnji fazi razvoja, so raziskave množičnega financiranja najnovejše podpodročje potencialnih raziskav.

Naše ugotovitve potrjujejo "spremembo podjetniške kulture", ki jo je opisal Harrison (2017), kjer je množično financiranje povezano s financiranjem v zgodnji fazi. Kljub temu pa to še vedno ni gosto povezano z odločanjem poslovnih angelov ali naložbami poslovnih angelov. Edelman in sodelavci (2017) so to prav tako poudarili kot potencialno raziskovalno pot, na kateri bi bilo treba dodatno raziskati vpliv množičnega financiranja na poslovne angele. V tej študiji najdemo tudi nove perspektive za prihodnje raziskave, kjer si avtorji prizadevajo za nadaljnje raziskovanje etničnega, manjšinskega in priseljenskega tveganega financiranja.

To se ujema z našimi prejšnjimi opažanji, ki so pokazala, da je bilo etnično podjetništvo prva nova tema v naših intervalnih raziskavah v osemdesetih letih prejšnjega stoletja in se je še naprej pojavljalo skozi večino naših študijskih intervalov. Čeprav se pojavlja neprekinjeno, so raziskovalni prispevki nekoliko redki in heterogeni. Razlaga za to bi lahko bila, da je etnično podjetništvo, podjetništvo manjšin in priseljencev pod drobnogledom glede dostopa

do naložb poslovnih angelov in "ima za posledico manj zaželenih finančnih rezultatov" (Drover et al., 2017).

Naš tretji teoretični prispevek izhaja iz analize bibliografskih povezav, ki kaže, da je področje odločanja o poslovnih angelih precej homogeno, organsko raste, avtorji si v trenutnih raziskavah delijo podobne ideje in še vedno premikajo meje raziskav. Raziskovalne meje na področju odločanja poslovnih angelov gredo v smeri novih trendov, ki jih opažamo v praksi - zelo pomembne se zdijo skupinske naložbe poslovnih angelov ter prepletanje socialnopsiholoških dejavnikov in finančnih meril pri končnem odločanju. Ugotovitve analize bibliografskih povezav razkrivajo nepokrita raziskovalna področja, kot so množično financiranje, podjetništvo priseljencev in vprašanja spola. Poleg tega prevladujejo dinamične raziskave čustvovanja in spoznavanja ter upravljanje vtisov, pri čemer so koncepti, kot so zanesljivost, intuicija in strast, vodilni na področju raziskav.

Poleg tega ugotavljamo, da ni dokazov o sodelovanju poslovnih angelov pri poslih množičnega financiranja, čeprav se množično financiranje pojavlja kot pomembno raziskovalno področje, zato bi bilo zanimivo raziskati, kako se lahko odločanje drugih vlagateljev pri množičnem financiranju razlikuje od odločanja poslovnih angelov. To bi lahko privedlo do bolj poglobljene opredelitve ocene tveganja v strukturah sklepanja poslov poslovnih angelov. Pomanjkljivosti v literaturi usmerjajo raziskave odločanja poslovnih angelov k podjetništvu priseljencev, ki se zdi premalo raziskano področje. Vprašanje, ki pride prav, je, ali bi moral biti poslovni angel bolj izpostavljen trgu ali pa v odnosu med poslovnim angelom in podjetnikom priseljencem obstajajo določene pristranskosti. Vidimo, da se priseljenci in etnični podjetniki izogibajo naložbam poslovnih angelov, vprašanje, ki ostaja neodgovorjeno, pa je, zakaj.

Poleg tega naša analiza opozarja na očitne pomanjkljivosti v raziskavah o vprašanih spola na področju poslovnih angelov. Vprašanje, ki ostaja odprto, je, kako poslovni angeli pri sprejemanju odločitev še vedno upoštevajo spolno pristranskost, medtem ko delujejo v svetu človeškega in tehnološkega razvoja. Prav tako bi potrebovali odgovor na vprašanje, katere so točno te pristranskosti. Študije kažejo, da imajo moški poslovni angeli pri sprejemanju odločitev pristranskost glede na spol, kaj pa poslovni angeli ženskega spola? Poznamo obstoj društev poslovnih angelov, ki so namenjena samo ženskam. Ali lahko s pomočjo feministične teorije opazujemo (Elliott in Orser, 2018; Greer in Greene, 2003; Hurley, 1999; Orser et al., 2011) odločanje v teh ekskluzivnih društvih ženskih poslovnih angelov in kako bi se njihovo odločanje razlikovalo od odločanja moških poslovnih angelov? Iz objektivov teoretičnega okvira je dovolj dokazov, da bi se lahko še bolj poglobili v to spodbudno temo.

Nazadnje, hevristično odločanje se zdi premalo raziskano in v veliki meri zahteva nove raziskave. Študija kaže na pojavne teme pri odločanju poslovnih angelov na podlagi osebnostnih dejavnikov, pri čemer ostaja neodgovorjeno, katere osebnostne značilnosti in ravni osebnosti (tj. kot so lastnosti, čustva, občutki in stališča) so pogoste pri odločanju poslovnih angelov in kako potencialno vplivajo na odločitev o naložbi.

Iz naše fenomenološke kvalitativne študije izhajajo nadaljnji teoretični prispevki, ki jih predstavljamo v poglavju 3. Naša študija omogoča začetno raziskovanje dejavnikov na ravni posameznika, ki vplivajo na odločanje o poslovnih angelih. Četrty teoretični prispevek izhaja iz razkritja več novih ali premalo raziskanih dejavnikov na individualni ravni, ki jih poslovni angeli izpostavijo pri sprejemanju odločitev o naložbah v tvegana podjetja: intuicija, čustvena inteligenca in spoštovanje. V širšem smislu ugotavljamo, da je intuicija poslovnih angelov pomemben predhodnik tega, kako osmišljajo svoje odločanje, in kaže, kako in ali bodo v prihodnosti sploh funkcionalno sodelovali s podjetniki. intuicija poslovnih angelov izhaja iz njihovega značaja in se opira na njihove predhodne izkušnje.

Drugi odkrit dejavnik na ravni posameznika je čustvena inteligenca. Ta ima pomembno vlogo pri odločanju poslovnih angelov, predvsem zaradi njihove sposobnosti obvladovanja čustev v odnosu s podjetniki, kar lahko vpliva na njihova naložbena merila in učenje iz izkušenj. Tretji razkriti dejavnik na ravni posameznika je spoštovanje, ki lahko škoduje odločanju poslovnih angelov. To pomeni, da če spoštovanje poslovnih angelov ni usklajeno s spoštovanjem, ki ga izpostavljajo podjetniki, obstaja velika verjetnost, da naložba ne bo izvedena.

Kot peti teoretični prispevek te disertacije vidimo povezovanje razdrobljenih dejavnikov na ravni posameznika, opredeljenih v prejšnji literaturi, in na novo opredeljenih dejavnikov v naši kvalitativni študiji v tri sklope dejavnikov na ravni posameznika, ki jih poslovni angeli uporabljajo ali upoštevajo pri odločanju o naložbi v podjetniški podvig: a) dejavniki, ki temeljijo na značaju in se nanašajo na intuicijo, čustveno inteligenco in vizijo poslovnega angela; b) dejavniki, ki temeljijo na izkušnjah in upoštevajo izkušnje, veščine in kompetence poslovnega angela ter c) dejavniki, ki temeljijo na odnosih in ki upoštevajo stališča poslovnega angela o skupni kulturi in vrednotah, spoštovanju in zaupanju s podjetniki, ki iščejo naložbo.

Ugotovitve naše študije so v skladu z Banduro (1999) in kažejo, da so dejavniki na ravni posameznika pomemben del odločanja poslovnih angelov. Ugotavljamo, da ti dejavniki v resnici prihajajo "od znotraj" poslovnih angelov, od tega, kdo v resnici so. Z našim okvirom dejavnikov na ravni posameznika želimo spodbuditi prihodnje raziskave, da bi se poglobile in zagotovile empirične dokaze o dejavnikih na ravni posameznika pri odločanju poslovnih angelov. Poleg tega pozivamo širšo znanstveno skupnost, naj še bolj raziskuje nove dejavnike na individualni ravni, ki izhajajo iz naše študije, in preuči njihove predhodnike. Več kvalitativnih prispevkov bi bilo na tem področju v veliki meri koristnih. Poleg tega smo oblikovali niz osemnajstih temeljnih predlogov, okoli katerih lahko znanstveniki strukturirajo nadaljnje, obsežnejše raziskave, o čemer obširno razpravljamo v poglavju 3.

Kot šesti teoretični prispevek v 4. poglavju predstavljamo našo kvantitativno študijo, ki dopolnjuje literaturo o poslovnih angelih s premikom perspektive z odnosa agent-principal, ki temelji na dejavnostih spremljanja in lastniških spodbudah (tj. perspektiva teorije zastopanja), na sinergijsko perspektivo diad, ki temelji na vzajemnosti in zaupanju (tj. teorija

socialne izmenjave) pri preučevanju dejavnikov ustvarjanja relacijske rente v odnosu poslovni angel-podjetnik. Na ta način zagotavljamo nov vpogled v nastanek sinergijskih odnosov med poslovnimi angeli in podjetniki.

Poglavje 4 vsebuje tudi naš sedmi teoretični prispevek. V naši kvantitativni študiji uporabljamo odnosno perspektivo, da bi poudarili sinergijsko diadično perspektivo vzajemnosti in zaupanja ter preučili dejavnike uspeha podjetja v smislu doseganja odnosne rente z vidika poslovnega angela. Zaupanje je temelj tega sodelovanja, saj ustvarja globoko povezavo med poslovnim angelom in podjetnikom. To zaupanje se izraža z naložbami, ki so prilagojene podjetnikovi viziji in posebnim potrebam podjetja. Delitev materialnih in nematerialnih sredstev, od finančnih virov do strateških spoznanj in mrež, poudarja trdnost tega partnerstva in njegovo sposobnost premagovanja zapletenosti podjetniškega terena. Potrjujemo, da so naložbe, povezane s posameznimi odnosi, v veliki meri odvisne od zaupanja (Bammens in Collewaert, 2014; Ding et al., 2015; Sørheim, 2003), zato se poslovni angeli, kadar zaupajo svojim podjetnikom, bolj verjetno zavežejo, da se bodo prilagodili specifičnim naložbam s tem podjetnikom.

Naš osmi teoretični prispevek izhaja iz razvoja teoretičnega razumevanja uspešnosti zavezništva poslovnih angelov in podjetnikov kot vrednosti skupnih prizadevanj (sinergij). Pojasnjujemo, da je uspešnost zavezništva relacijska najemnina, in predlagamo, da je soodvisno razmerje med poslovnimi angeli in podjetniki uokvirjeno v zaupanju in spremembah, ki so potrebne za vzdrževanje naložb (znanih kot naložbe, specifične za razmerje). Še vedno pa dodajamo utemeljitev, da je ta odnos odvisen od faze rasti podjetja. Z razvojem podjetniškega podjema postane strateška narava teh za odnos specifičnih naložb ključnega pomena, saj vodijo podjetje skozi fazo razširljivosti in morebitnega izstopa. Ugotavljamo, da so višje relacijske rente še posebej očitne v podjetjih v fazah skalabilnosti in izstopa v primerjavi z naložbami v podjetjih v začetnih fazah.

### **Metodološke implikacije**

Prvi metodološki prispevek v tej disertaciji so bibliometrične metode, ki jih uporabljamo za pregled obstoječe znanstvene literature na področju odločanja o poslovnih angelih. Kolikor nam je znano, nobena študija na področju odločanja poslovnih angelov ne uporablja bibliometrične metode, ki za pregled obstoječe literature na področju raziskovanja poslovnih angelov uporablja tri različne analize. Čeprav obstaja nekaj kvantitativnih pregledov literature na področju poslovnih angelov na splošno (Arora et al., 2023; Capizzi et al., 2022; Cumming et al., 2023; Tenca et al., 2018), namreč nobena od obstoječih ne pripravlja tako podrobnega kvantitativnega pregleda področja poslovnih angelov. Natančneje, svobodno lahko rečemo, da je to prvo delo, ki omogoča razumevanje znanstvenega komuniciranja in dinamike intelektualnih prispevkov na področju odločanja o poslovnih angelih in raziskovanja poslovnih angelov na splošno. Objektivno vrednotenje znanstvenih prispevkov na tem področju analiziramo in širše obravnavamo v našem 2. poglavju. Z bibliometričnimi

analizami razkrivamo mreže sodelovanja in spremljamo pretok znanja prek vzorcev citiranja, prikazujemo grozde znanja in sledimo razvoju znanja skozi čas.

Druga metodološka implikacija, ki jo obravnavamo, je robustnost in razložljivost rezultatov teh bibliometričnih študij, ki jih predstavljamo v poglavju 2. Pri izvajanju analiz soobjavljanja, socitiranja in bibliografskega povezovanja je bila metodološka natančnost bistvenega pomena za pridobitev smiselnega vpogleda v znanstveno okolje. Izbira Web of Science kot podatkovne zbirke zagotavlja celovito predstavitev znanstvene produkcije v vseh disciplinah. Razvili smo sistematično strategijo iskanja, ki vključuje ustrezne ključne besede, nadzorovani besednjak in logične iskalne izraze za prepoznavanje ustreznih dokumentov. Merila za vključitev smo skrbno opredelili, da bi zajeli publikacije, ki neposredno prispevajo k našim raziskovalnim ciljem. Izvedeni so bili strogi postopki čiščenja podatkov za odpravo nedoslednosti v bibliografskih informacijah, za izboljšanje točnosti podatkov pa so bili izvedeni tudi validacijski pregledi. Analiza sočasnega pojavljanja osvetljuje tematska razmerja z ugotavljanjem pogosto parnih izrazov v naslovih ali povzetkih dokumentov, razkriva nastajajoče trende in raziskovalne teme ter odkriva meje raziskovanja na področju odločanja o poslovnih angelih. Analiza socitiranja razkriva intelektualno strukturo področja, saj ugotavljamo pogosto citirane reference, medtem ko naša analiza bibliografskega povezovanja razkriva sorodnost med dokumenti na podlagi skupnih referenc v raziskavah odločanja o poslovnih angelih. Ocenjujemo časovno dinamiko teh omrežij, da bi ugotovili spreminjajoče se vzorce skozi čas in grozde, v katerih se ključni prispevki združujejo. Za zmanjšanje disciplinarnih razlik uporabljamo tehnike normalizacije, kot so citati na dokument. Kot orodje za vizualizacijo uporabljamo VOSviewer, ki nam omogoča prikaz grafov omrežij in toplotnih zemljevidov. Z njim lahko bistveno izboljšamo razlago zapletenih bibliometričnih vzorcev in določimo najpomembnejše znanstvene članke, ključne besede, publikacije ali avtorje. Na splošno ta metodološko strog pristop omogoča niansirano raziskovanje znanstvenega komuniciranja ter odkriva ključne teme, vplivna dela in dinamično prepletanje idej na raziskovalnem področju odločanja o poslovnih angelih.

Tretji metodološki prispevek je uporaba fenomenološkega okvira na področju raziskovanja poslovnih angelov. V številnih študijah je bila raziskana uporaba fenomenologije pri raziskovanju podjetništva, s poudarkom na metodoloških in teoretičnih temeljih tega pristopa (Abebrese, 2014; Cope, 2005). To je bilo razširjeno na področje mednarodnega podjetništva, kjer je bila hermenevitična fenomenologija predlagana kot ustrezna raziskovalna paradigma (Seymour, 2006). Vendar pa je v tem primeru treba poudariti, da je v tem primeru treba upoštevati tudi temeljno teorijo, tj. Freear in sodelavci (2002, str. 279) opozarjajo na potrebo po bolj sistematičnih in longitudinalnih študijah na področju raziskav poslovnih angelov, ki bi jim uporaba fenomenoloških metod lahko koristila. Na žalost so po našem vedenju le Snellman in Cacciotti (2019) uporabljata metodo interpretativne fenomenološke analize za analizo "procesa vrednotenja naložbenih priložnosti na ravni življenjskih izkušenj poslovnih angelov". Zato je fenomenološka študija v tej disertaciji ena

prvih študij na področju raziskovanja poslovnih angelov, ki uporablja fenomenologijo kot raziskovalni okvir.

Četrta metodološka implikacija, ki jo poudarjamo, je uporaba celovite in poglobljene analize fenomenoloških intervjujev v 3. poglavju. Ta fenomenološka študija uporablja metodo interpretativne fenomenološke analize, ki metodološko prispeva k razumevanju dejavnikov na ravni posameznika, ki usmerjajo naložbene odločitve poslovnih angelov. Uporabljamo kvalitativni pristop s fenomenološkimi poglobljenimi intervjuji s 16 poslovnimi angeli, da bi raziskali niansirane in subjektivne vidike njihovih izkušenj pri odločanju. Študija se je posebej osredotočila na odkrivanje dejavnikov na individualni ravni, ki vplivajo na naložbene odločitve poslovnih angelov. V tej študiji uporabljamo vzorčenje s snežno kepo, pri katerem smo z izpopolnjevanjem prvotnih meril za izbor udeležencev prispevali metodološki prispevek. To omogoča dinamičen pristop k pridobivanju udeležencev med celotnim raziskovalnim procesom, s čimer se poveča raznolikost vzorca. Poleg tega pri izbiri udeležencev upoštevamo tudi etične vidike. Pri izbiri začetnih udeležencev zagotavljamo, da so raznoliki tako z geografskega vidika kot glede na njihovo ozadje in izkušnje v skupnosti poslovnih angelov. Študija iz 3. poglavja tudi kaže, da je bil postopek izbire udeležencev pregleden. V zvezi z udeleženci obravnavamo tudi etične vidike, saj menimo, da je primerno, da imen udeležencev ne razkrijemo v celoti, temveč jih v naši študiji identificiramo s psevdonimi. Naše zbiranje podatkov v študiji vključuje polstrukturirane intervjuje, ki udeležencem omogočajo, da delijo svoje osebne pripovedi in spoznanja o sprejemanju odločitev v kontekstu poslovnih angelov. Analiza podatkov poteka po načelih interpretativne fenomenološke analize, ki poudarja iterativni proces zbiranja podatkov, kodiranja in razvijanja tem. Na podlagi tega sklepamo o bogatih življenjskih izkušnjah, ki jih imajo poslovni angeli pri sprejemanju odločitev o naložbah v podjetniške podjeme. Z raziskovanjem njihovih dejavnikov na individualni ravni in kombiniranjem naših osebnih zapiskov o njihovem dejanskem vedenju med vsakim intervjujem smo podrobno razvili celovito in bogato analizo vsake teme, ki se je pojavila v podatkih. Zato je ta študija metodološki prispevek, saj omogoča podrobno in kontekstualno bogato razumevanje zapletenega procesa odločanja o naložbah poslovnih angelov.

Peto metodološko implikacijo vidimo v kompleksnosti empirično preizkušenega modela moderiranega posredovanja v poglavju 4. Predstavljena kvantitativna študija uporablja modeliranje strukturnih enačb za empirično preverjanje predlaganega teoretičnega modela in uporablja empirično potrjene lestvice za latentne konstrukte z ustrezno zanesljivostjo, kot kaže koeficient Cronbachove alfa ( $\alpha \geq 0,70$ ). (Peterson in Kim, 2013). Študija zagotavlja podatke s 136 anketami, ki so bile izvedene s samoprijavo, kar je v okviru raziskav poslovnih angelov velik dosežek, zlasti če upoštevamo, da so anketiranci težko dosegljivi in običajno skriti člani investicijske družbe (Farrell et al., 2008; Wetzel, 1983). To kaže tudi na skrben raziskovalni proces in poudarja pozornost do podrobnosti pri izbiri vzorca in zbiranju podatkov. Razmeroma velik vzorec v primerjavi z nekaterimi prejšnjimi vzorci v znanstvenih delih s tega področja (Avdeitchikova et al., 2008; Capizzi et al., 2022; Cardon

et al., 2009; Franić in Drnovšek, 2019; Mason, 2016) zagotavlja zanesljiv in reprezentativen vzorec. Skrbna izbira in potrditev merilnega instrumenta dodatno zagotavljata metodološko strogost. Ocenjujemo konvergentno in diskriminantno veljavnost našega merilnega instrumenta, kar prispeva k zanesljivosti in veljavnosti latentnih konstruktov v našem modelu. Uporaba modeliranja strukturnih enačb nam olajša raziskovanje zapletenih teoretičnih odnosov v modelu relacijskih rent in nam omogoča razumevanje moderiranih-posredovalnih učinkov v našem modelu. Poleg tega zagotavlja metodološko napredno mrežo za prihodnje raziskave na področju odločanja o poslovnih angelih. Z metodološkega vidika prispevamo tudi k širšemu akademskemu diskurzu z uporabo kombinacije empirično potrjenih lestvic, dobro strukturiranega anketnega instrumenta in izpopolnjenih statističnih postopkov, ki povečujejo verodostojnost in posplošljivost ugotovitev naše študije.

### **Praktične implikacije**

Ta disertacija ima več praktičnih prispevkov. Prvič, poslovnim angelom spoznanja iz te disertacije ponujajo praktični vodnik za izboljšanje njihove učinkovitosti na področju tveganih naložb. poslovnim angelom lahko koristijo naše ugotovitve o dejavnikih na individualni ravni, ki vplivajo na njihovo odločanje, zlasti ko obravnavamo njihove dejavnike na individualni ravni, ki temeljijo na značaju in vključujejo njihove značajske lastnosti, zlasti prepričanja, čustva, kognicije in hevrstike. S prepoznavanjem morebitnih pristranskosti, ki izhajajo iz prevelike samozvesti in samoučinkovitosti, lahko poslovni angeli premislijo in sprejmejo dodatne ukrepe za uravnoteženje svojega odločanja in po potrebi zagotovijo bolj objektivno oceno naložbenih priložnosti. Poleg tega lahko razumevanje vpliva čustvene inteligence in strasti poslovnim angelom pomaga pri vzpostavljanju trdnjših odnosov s podjetniki, saj poudarja potrebo po empatiji in učinkoviti komunikaciji. Spoznanja, kot sta intuicija in vizija, je treba skrbno uporabljati kot dopolnitev analitičnega pristopa za celovitejše odločanje. Kot vidimo, imajo pri odločanju poslovnih angelov bistveno vlogo tudi hevrstične metode, zato bi morali k svojim odločitvam pristopiti s kritično miselnostjo, da bi zmanjšali tveganja, povezana z miselnimi bližnjicami.

Na podlagi te disertacije lahko podjetniki pridobijo dragocen vpogled v dejavnike, ki vplivajo na odločanje poslovnih angelov, da lahko prilagodijo svoje strategije za zagotavljanje naložb poslovnih angelov. S prepoznavanjem pomena dejavnikov na ravni posameznika, ki temeljijo na značaju poslovnih angelov, lahko svoje ponudbe prilagodijo željam poslovnih angelov. Poudarjanje skupnih vrednot, strasti in jasne vizije podjetja poveča privlačnost podjetniške ponudbe. Ko podjetniki razumejo vpliv kulturnih dejavnikov, lahko učinkoviteje upravljajo svoje odnose in uskladijo svoje podjeme s pričakovani potencialnih poslovnih angelov. Poleg tega priznavanje vloge zaupanja kot temelja v odnosih med poslovnimi angeli in podjetniki poudarja pomen pregledne komunikacije, integritete in zavezanosti skupnim vrednotam. Podjetniki lahko to razumevanje izkoristijo za spodbujanje dolgoročnih partnerstev, ki temeljijo na sodelovanju in presegajo finančno podporo.

Naše ugotovitve so tudi podlaga za izobraževalne pobude, namenjene poslovnim angelom in podjetnikom. Izobraževalni programi so lahko zasnovani tako, da izboljšajo finančno pismenost poslovnih angelov in njihove spretnosti odločanja ter se osredotočijo na zmanjševanje pristranskosti, ki jo povzročajo prepričanja, čustva, kognicije in hevratika. Za podjetnike lahko izobraževalni moduli poudarjajo pomen razumevanja dejavnikov na individualni ravni poslovnih angelov kot potencialnih vlagateljev in ustreznega prilagajanja

predstavitev. Poleg tega lahko izobraževalne ustanove vključijo module kulturne inteligence, ki spodbujajo spoštovanje različnih stališč in pripravljajo podjetnike na učinkovito komunikacijo s poslovnimi angeli iz različnih okolij. Poleg tega lahko izobraževalne pobude poudarjajo vlogo zaupanja v odnosih med poslovnimi angeli in podjetniki ter zagotavljajo smernice za vzpostavljanje in vzdrževanje preglednih in zaupanja vrednih delovnih odnosov. Z vključitvijo teh spoznanj v učne načrte bodo bodoči poslovni angeli in podjetniki usposobljeni za uspešno obvladovanje zapletenosti naložb poslovnih angelov.

### **Omejitve in prihodnje raziskave**

Kljub prispevku študije v tej disertaciji niso brez omejitev. Za razliko od specifičnih omejitev, ki jih navajamo v vsaki študiji (poglavja 2-4), se tukaj osredotočamo na omejitve, ki izhajajo iz splošnega pristopa k raziskavi v okviru disertacije, ki ga predstavljamo v poglavju 1. V njem smo opisali raziskovalno pot v tej disertaciji in podajamo pregled, kako s študijo mešanih metod preučujemo konceptualno ozadje glavnega raziskovalnega problema, da bi dosegli boljše razumevanje odločanja o naložbah poslovnih angelov. Poleg tega v tem podpoglavju na kratko obravnavamo prihodnja raziskovalna področja.

Prvič, čeprav smo v tej disertaciji dosegli svoje raziskovalne cilje in uporabili različne raziskovalne metode, ki temeljijo na triangulaciji, še vedno vidimo pomembno omejitev v zasnovi naše študije. Za začetek smo se odločili, da bomo našo študijo o naložbenem vedenju in merilih poslovnih angelov izvedli s pregledom obstoječe literature na tem področju. Pri tem smo se odločili za kvantitativni pristop z bibliometrično študijo, da bi ugotovili, katere ključne besede so pomembne za študijo. Čeprav je ta bibliometrični pristop zanesljiv in je zagotovil pomemben znanstveni prispevek, ki smo ga uporabili v naših kvalitativnih in kvantitativnih študijah, ni bil posebej uporaben, ko smo morali ponovno pregledati literaturo, da bi določili naš teoretični okvir za nadaljnje študije.

Številne posebnosti, na katere smo naleteli pri preučevanju resničnih izkušenj poslovnih angelov, niso bile zajete v predhodno kvantitativno analizirani literaturi in so nas vodile na druga raziskovalna področja (npr. psihologijo). Razloga za to sta lahko dva. Prvič, podatki, ki jih uporabljamo v bibliometrični študiji, so lahko potencialno pristranski zaradi izbire samo Web of Science kot glavnega vira za našo bibliometrično analizo, ki po drugi strani potencialno izključuje pomembne publikacije ali pa spregleda nove trende v literaturi, ki

niso vključeni v Web of Science, obstaja pa tudi možnost skupne pristranskosti metode (Podsakoff et al., 2003).

Drugič, našo bibliometrično študijo smo omejili na določene iskalne izraze, ki so bili nekoliko izključujoči za našo prvotno zamisel študije. Vendar so naše misli in prispevki iz intervjujev dodatno razvili naše razumevanje naložbenih odločitev in meril poslovnih angelov ter nam približali odločanje pred naložbo in po njej. Pri tem moramo poudariti, da je omejitev naše večmetodne bibliometrične študije predvsem vzorec, ki odraža dinamično naravo znanstvenega raziskovanja, ki lahko povzroči časovne omejitve, saj naše analize zajemajo posnetek raziskovalnega prostora v določenem trenutku. Tako se zdi, da je naša bibliometrična študija zastarela, saj so bili do takrat na raziskovalno področje odločanja o poslovnih angelih dodani novi znanstveni prispevki. Zato je treba v smislu tristranskega pristopa vse študije izvesti v istem obdobju, morda v enem letu. Pri tem bi bila poleg zaporedne, raziskovalne zasnove, za katero smo se odločili, koristna tudi konvergentna, vzporedna zasnova študije z mešanimi metodami. To bi morali upoštevati v prihodnosti, ko bomo izvajali trikotno zasnovo študije z bibliometrično študijo kot glavnim pristopom za pregled literature.

Druga težava, na katero smo naleteli, je povezana s strategijami vzorčenja, ki smo jih uporabili v kvalitativni študiji v poglavju 3 in kvantitativni študiji v poglavju 4. V naši raziskovalni zasnovi raziskovanja z raziskovalnimi sekvenčnimi mešanimi metodami smo najprej izvedli kvalitativno študijo, v kateri je naš končni vzorec vključeval 16 poslovnih angelov iz Hrvaške, Slovenije, Italije, Španije in Portugalske. Čeprav menimo, da je to ustrezen vzorec, ki omogoča razumevanje njihovih naložbenih odločitev med državami, mu morda manjka kulturna raznolikost, ki jo izbrane države predstavljajo v naših fenomenoloških intervjujih. Čeprav so ti intervjuji zagotovili dragocen vpogled v izkušnje poslovnih angelov pri sprejemanju predinvesticijskih odločitev, rezultati niso zajeli celotnega spektra kulturnih razlik, ki bi jih lahko opazili, če bi že na začetku vključili bolj raznolik vzorec. Enako težavo smo ugotovili tudi pri naši kvantitativni študiji. Čeprav podatki iz ankete, ki smo jih zbrali od 136 poslovnih angelov iz Evrope, predstavljajo razumno velikost vzorca glede na dejstvo, da je poslovne angele težko doseči (Farrell et al., 2008; Wetzel, 1983), morda ne zajema celotne raznolikosti pogledov in izkušenj, ki bi se lahko pokazale pri obsežnejšem in bolj raznolikem naboru anketirancev. Ta omejitev vzorca bi lahko vplivala na posplošljivost ugotovitev naše študije, zato morajo biti raziskovalci previdni pri razširjanju naših rezultatov na bolj raznoliko populacijo.

Prihodnje raziskave bi si zato morale prizadevati za razširitev geografskega obsega in kulturne raznolikosti udeležencev, da bi povečale zunanjo veljavnost študij v tej disertaciji (poglavji 3 in 4) in zagotovile celovitejše razumevanje odločanja poslovnih angelov v predinvesticijski in poinvesticijski fazi. To bi pomenilo, da bi lahko raziskovalci razmislili o preučitvi izkušenj poslovnih angelov iz različnih družbenoekonomskih okolij ali demografskih skupin, kar bi lahko zagotovilo celovitejše razumevanje pojava odločanja poslovnih angelov. Prihodnje študije bi zato lahko vključile kvantitativne ukrepe, ki bi

dopolnili druga kvalitativna spoznanja, pridobljena iz naših fenomenoloških intervjujev. Poglobljeno raziskovanje čustvene inteligence in intuicije poslovnih angelov, kot smo ju razkrili v naši fenomenološki študiji, bi nam lahko zagotovilo novo, celovitejšo opredelitev poslovnih angelov in omogočilo celovitejše raziskovanje dejavnikov na ravni posameznika, ki vplivajo na ustvarjanje relacijske rente v odnosu poslovni angel-podjetnik.

Poleg tega lahko prihodnje študije, ki bodo temeljile na naložbah poslovnih angelov, upoštevajo relacijski pristop, kot smo to storili v 4. poglavju, da bi dodatno raziskali, kako zaveznitvo med poslovnim angelom in podjetnikom ustvarja vrednost za obe strani. Še posebej koristno bi bilo potrditi ta pogled z empiričnim preverjanjem teoretičnega modela ustvarjanja relacijske rente v diadi vlagatelj-podjetnik, ki sta ga predlagala De Clercq in Sapienza (2001) za poseben kontekst zaveznitva med poslovnim angelom in podjetnikom.

To bi dodalo nov zorni kot na pogled na naložbe poslovnih angelov z vidika izmenjave znanja, zlasti ko se lahko relacijske rente obravnavajo kot rezultat interakcije med prekrivanjem znanja med poslovnim angelom in podjetnikom ter rutinami izmenjave znanja.

V povezavi z našo študijo v 4. poglavju pozivamo znanstvenike, naj ponovijo naš model za vzorec podjetnikov, da bi videli obe strani odločanja in pridobili širše razumevanje naložb poslovnih angelov.

## Appendix 2: Interview questions for qualitative study

### *Which individual-level factors do business angels use in their investment decision making?*

#### **Part A: About the business angel and their identity**

**Q1:** As a starting question, just to get a warm-up, how would you define yourself?

Prompts:

- Do you define yourself as an entrepreneur or investor? Or both? Why?
- What is your background?
- Why did you start investing as a business angel?

**Q2:** Do you have some specific personal philosophy in making investments?

Prompts:

- Are there any specific skills and abilities that help you make investment decisions (commitment, passion, emotions, organizational skills)? Why?
- What does investment mean to you? Why?
- Do you prefer choosing the “horse or the jockey”? Why?
- Do you believe it is better to invest in the business or in the owner? Why?
- In your experience, which is a better base for such a decision? Why?

#### **Part B: Business angel's views on the investment decision making; criteria and personal factors**

**Q3:** Can you tell me about your investment experiences?

Prompts:

- What kind of investments you usually take? Some specific industries? Why?
- What does it mean for you to have a good »investment fit«?
- Do you prefer investing in female or male businesses? Why?
- Have you so far invested in female-owned businesses?
  - If YES, why?
    - While having female business investment, do you believe there is usually homophily present in investing? Why?
    - Do you believe those female entrepreneurs you invested in are different in their daily operations? Why?
  - If NOT, why?
- What kind of requirements did you have for investing? Do you have some specific criteria venture has to carry out? Why?
- Do you follow some specific investment decision-making process? Why?
- Let us talk on your last investment experiences. How did you feel when you knew you have to make an investment decision? Why?
- How did you feel when you delivered an investment decision? Why?
- How did you feel when there was some good venture, but they did not comply with all your requirements/criteria? Why?

**Q4:** When you last time **watched venture pitches** or talked to potential investments, how did it make you feel?

Prompts:

- Are there some emotions you experience? Which?

- Is there some special first-glimpse feeling you experienced when you last time watched potential ventures? How did you feel? Why?
- When you last time watched good pitches and potential investments, how did you feel? Why?
- When you last time watched not so interesting pitches, how did you feel? Why?
- What was going on in your mind then when watching pitches last time? (thoughts/ associations/ fantasies).

**Q5:** When you **last time decided to invest**, can you tell me about how did you feel back then?

Prompts:

- How did you decide to go about your investment? Why?
- What was going on in your mind then? (thoughts/ associations/ fantasies)
- Did you listen to your heart or were you guided by your head in making an investment? Why?
- Did you seek some additional help in making a decision?
  - If YES - **Where** did you seek additional help? Why?
    - What did you think about the recommendations you received?
    - Were the recommendations similar or different in what you thought about your investment? Why?
    - How did the people that recommended you the investment outlook behave? How the people/person you referred to assess it? Did they request something in return?
  - If NOT – What stopped you from seeking external help?

**Q6:** Recall your last **BAD** investment decision. What do you think could help you make a better decision at that time, now you know that you were wrong?

- Do you think there is anything you could have done to overcome bad investment decision? Why?
- What do you think should have been done to help you overcome bad investment problem?
- How did you think the outcome would change if you had done nothing about it?

**Q7:** Could you describe your **favorite start-up investment**?

- Is this the one you are mostly personally attached with? Why?
- Do you believe this is in financial terms the best investment you made? Why?
- Would you today make the same decision on making the investment in this particular business? Why?

## Part C: Follow-up questions and information

**Q8:** Is there anything else in detail you can tell me about yourself or your venture investments?

- Any sort of thoughts/feelings you gain from investing in start-ups?

**Q9:** Is there anything you would like to say to fellow business angels?

- Is there something you would like to find out about business angel decision-making?
- What do you think would be valuable to ask other participants during their interviews?

**Q10:** Was there anything missed that I should have asked you or you would like to share more of?

- Any questions or comments?

### Appendix 3: Cover letter for a quantitative study

E-mail subject:

**We invite you to a research survey on Business angels' and their entrepreneurs' relationships ∞**

Body text:

Dear business angel,

We invite you to participate in our survey on *business angels and their entrepreneurs' relationships*. In this survey, business angels from all over Europe will be asked to complete a survey that asks questions about specific business relationships with their entrepreneurs (i.e. investees).

**We invite you to recall the last exited investment you had in the entrepreneurial venture: the one you really can relate to, were fully involved and have the information of this joint venture success.** If you have not exited any investments yet, please respond for the most advanced investment in the entrepreneurial venture you have as a business angel.

It will take approximately 8 minutes to complete the survey, and responses are strictly anonymous.

As our appreciation to your participation in this study, we offer you vouchers for our **two free webinars** for your investees on “*How to understand the core finance in the entrepreneurial surrounding*” and “*How to understand what your investor wants from you*”. In case you would like to automatically receive these vouchers, you will be able to leave a contact e-mail at the end of the survey. Your e-mail will be protected under academic integrity regulations by authors and will not be shared in any way. Your information will be coded and will remain confidential.

If you have questions at any time about the survey or the procedures, you may contact me at +38599\*\*\*\*\* or by e-mail at [dina.vasic@gmail.com](mailto:dina.vasic@gmail.com).

[SURVEY LINK](#)

Thank you very much for your time and support.

Dina Vasic

Alenka Slavec Gomezel

## Appendix 4: Questionnaire for a quantitative study

### Business angels and their entrepreneurs' relationships



Dear business angel,

Thank you for participating in a study on business angels and their entrepreneurs' relationships. In this survey, we would like to learn more about the specific business relationship with your entrepreneur whose venture you invested in.

The survey takes approx. 8 minutes to complete, and responses are strictly anonymous. Data from this research will be reported only in the aggregate in research papers and shared in aggregate with interested business angels. If you would like to receive extra materials for your work (free webinar ticket for your entrepreneurs), you will be able to leave a contact e-mail at the end of the survey.

We invite you to recall the last exited investment you had in an entrepreneurial venture: the one you really can relate to. If you have not exited any investments yet, please respond for the most advanced investment in the entrepreneurial venture you have as a business angel. Questions in this survey will relate to this specific business relationship between you and this entrepreneur.

Thank you very much for your time and support. Please start with the survey now by clicking on the Start button below.

Dina Vasic & Alenka Slavec Gomezel

#### 1. YOUR INVESTMENT VIEWED AS A BUSINESS ALLIANCE

As a business angel, you gave money and nonmonetary inputs to this entrepreneur to grow. This is a business alliance. Please indicate your level of disagreement or agreement with the following statements about this formed business alliance with this entrepreneur, where 1 means that you strongly disagree and 5 means that you strongly agree with the statement.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1.1 The objectives for which this alliance was established are being met.	1	2	3	4	5
1.2 I am satisfied with the financial performance of this alliance.	1	2	3	4	5
1.3 The entrepreneur seems to be satisfied with the financial performance of this alliance.	1	2	3	4	5
1.4 I am satisfied with the overall performance of this alliance.	1	2	3	4	5
1.5 The entrepreneur seems to be satisfied with the overall performance of this alliance.	1	2	3	4	5

## 2. YOUR BUSINESS ADJUSTMENTS

Please indicate your level of disagreement or agreement with the following statements about the adjustments in your business because of the relationship with this entrepreneur. 1 means that you strongly disagree and 5 means that you strongly agree with the statement.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
2.1 I have made internal adjustments to deal effectively with this entrepreneur.	1	2	3	4	5
2.2 I committed time and money to be trained to deal with this entrepreneur.	1	2	3	4	5
2.3 I have made investments in assets or debt and capital dedicated to this relationship.	1	2	3	4	5
2.4 My administrative routines and procedures have been tailored to this entrepreneur.	1	2	3	4	5
2.5 I have adapted my organizational procedures to this entrepreneur.	1	2	3	4	5

## 3. TRUST

Think about the trust you had in the relationship with this entrepreneur. Please indicate your level of disagreement or agreement with the following statements about trust, where 1 means that you strongly disagree and 5 means that you strongly agree with the statement.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
3.1 While making important decisions, this entrepreneur was concerned about our alliance's welfare.	1	2	3	4	5
3.2 This entrepreneur would not knowingly do anything to hurt our alliance.	1	2	3	4	5
3.3 My personal business needs were important to this entrepreneur.	1	2	3	4	5
3.4 This entrepreneur looked out for what is important to our business in the alliance.	1	2	3	4	5
3.5 This entrepreneur went out of his way to help our alliance.	1	2	3	4	5

## 4. QUESTION FOR STATISTICAL PURPOSES

You are almost at the end of the survey. The next set of questions is not related to your relationship with this entrepreneur. It is for statistical purposes of data analysis and there are no right or wrong answers. Please consider your thoughts about the color blue and indicate

your level of disagreement or agreement with the following statements, where 1 means that you strongly disagree and 5 means that you strongly agree with the statement.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
4.1 Blue is a beautiful color.	1	2	3	4	5
4.2 Blue is a lovely color.	1	2	3	4	5
4.3 Blue is a pleasant color.	1	2	3	4	5
4.4 The color blue is wonderful.	1	2	3	4	5
4.5 Blue is a nice color.	1	2	3	4	5
4.6 I think blue is a pretty color.	1	2	3	4	5
4.7 I like the color blue.	1	2	3	4	5

## 5. ADDITIONAL QUESTIONS

At the very end, we would like to ask you some additional questions on the entrepreneur and you as a business angel.

5.1 How long has the relationship between you and this entrepreneur been going on?

\_\_\_\_\_ YEARS \_\_\_\_\_ MONTHS

**Please indicate the prior collaboration with this entrepreneur.**

5.2 With at least one of founding partners, I've already worked together before pursuing this investment.

☐ YES ☐ NO

5.3 With at least one of founding partners, I had a friendly relationship before pursuing this investment.

☐ YES ☐ NO

5.4 Please indicate your years of experience as a business angel.

\_\_\_\_\_

## 6. DEMOGRAPHIC QUESTIONS

6.1 When were you born? *Please indicate year, 19xx.* \_\_\_\_\_

6.2 Indicate your gender:

☐ male

☐ female

☐ other

6.3 Indicate your highest degree of education:

☐ High school

☐ Some college

☐ Trade/vocational/technical

☐ Associates

☐ Bachelors'

☐ Masters'

☐ Professional

☐ Doctorate

☐ Other

6.4 Your country of residence:

\_\_\_\_\_

## 7. THANK YOU...

Thank you for being part of this study.

If you would like to receive extra materials for your work, please leave a contact e-mail at the end of the survey. Over e-mail, you will receive vouchers for two free webinars for your investees on “*How to understand the core finance in the entrepreneurial surrounding*” and “*How to understand what your investor wants from you*”. Webinars will take place online in June and July 2022. Webinars will be video recorded, so you could also opt for a recorded session link.

If you leave your e-mail, we guarantee it will be protected under academic integrity regulations by authors and will not be shared in any way. Your information will be coded and will remain confidential.

Dina & Alenka

If you want to receive a voucher for two free webinars, please leave an e-mail address.

\_\_\_\_\_

*This survey is made for the purpose of obtaining the PhD title at the School of Economics and Business, University of Ljubljana. Your help is extremely appreciated. Dina Vasic*

## Appendix 5: Final scale items and standardized loadings based on confirmatory factor analysis

Scale	Loading
<b>Alliance financial performance</b> (Lambe et al., 2002)	
This alliance generated a lot of profits.	0.960
We have increased joint profits shared between us.	0.961
Relative to our competitors, this alliance allowed us to generate superior profits.	0.875
Both parties in this alliance have achieved greater profits than we could have with other potential alliance partners.	0.779
We have achieved a high level of joint profits between us.	0.897
<b>Benevolence based trust</b> (Muthusamy & White, 2005)	
While making important decisions, this entrepreneur was concerned about our alliance's welfare.	0.778
This entrepreneur would not knowingly do anything to hurt our alliance.	0.905
My personal business needs were important to this entrepreneur.	0.749
This entrepreneur looked out for what is important to our business in the alliance.	0.724
This entrepreneur went out of his way to help our alliance.	0.622
<b>Relation-specific investments</b> (Haugland et al., 2021)	
I have made internal adjustments to deal effectively with this entrepreneur.	0.548
I committed time and money to be trained to deal with this entrepreneur.	0.598
My administrative routines and procedures have been tailored to this entrepreneur.	0.949
I have adapted my organizational procedures to this entrepreneur.	0.864