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Entrepreneurs' network characteristics and their perceived success in raising equity: Evidence from the business angel market

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ABSTRACT

Objective: The article investigates the nexus between the characteristics of entrepreneurs' networks and their perceived success in attracting funding from business angels.

Research Design & Methods: The article is based on a quantitative study. The data source was a survey of 40 Polish early-stage ventures that had secured angel funding. The ventures were identified by searching the Crunchbase database and the websites of Polish business angel groups. Several methods were used in the article: the chi-square test of independence with correction for Yates' continuity, the one-tail Fisher exact test, and Spearman's rank correlation coefficient.

Findings: The research results indicate that network size, contact frequency, and relationship quality are associated with entrepreneurs' perceived success in raising capital from business angels. It was also found that there are differences in the potential of entrepreneurs' network ties to contribute to this success. The results prove that more experienced entrepreneurs, in particular, are able to use their networks to facilitate their success in attracting angel funding.

Implications & Recommendations: While networks are generally perceived as beneficial, the article shows that maintaining and developing relationships with specific actors, in particular with business advisors, mentors, external equity investors, as well as lawyers, can be important for the success of a venture when seeking external equity funding. This may provide an incentive for entrepreneurs to strategically build network relationships that are effective and useful when raising capital from business angels.

Contribution & Value Added: While previous studies have not quantified the role that entrepreneurial networks can play in securing angel funding, this article makes an important contribution by providing empirical evidence on how entrepreneurs perceive their networks as useful in meeting their needs when raising equity from business angels.

Article type: research article

Keywords: entrepreneur; networks; business angels; equity; Poland

JEL codes: L14, L26, G32

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INTRODUCTION

To overcome the liabilities associated with being new and small (Stinchcombe, 1965; Freeman *et al*., 1983), nascent entrepreneurs interact with others in their external environment to gain access to needed resources (Salancik & Pfeffer, 1978). Networks, understood as 'the set of relationships or contacts that an entrepreneur has' (Sullivan & Ford, 2014, p. 501), are thought to have an important influence on entrepreneurial success. However, previous literature has documented inconclusive findings in this area. On the one hand, there is broad agreement that networks mitigate the impact of

knowledge gaps in new venture development (Niyawanont, 2023), enhance entrepreneurial competencies such as opportunity refinement and resource acquisition (Rasmussen *et al.*, 2015), and facilitate the scale and pace of a company's internationalisation process (Maciejewski *et al.*, 2022). On the other hand, scholars suggest that networks can be costly to maintain (Gargiulo & Benassi, 2000), may involve a significant risk of knowledge leakage (Pahnke *et al.*, 2015), and may not improve competitive position in certain industries (Wierzbiński *et al.*, 2023).

Given the high uncertainty surrounding new ventures, one of the greatest challenges nascent entrepreneurs face is securing external funding (Shane & Cable, 2002). As several studies have shown, despite drawbacks, one cannot deny the role of networks in this process. Previous research has found networks to provide legitimacy to external stakeholders (Stam *et al.*, 2014), to help identify funding sources, and to act as intermediaries by connecting new ventures with funders (Heuven & Groen, 2012). Their role appears to be particularly important in the early-stage funding market, which, in many cases, is the only source of external finance available to new ventures seeking to grow. The limited empirical evidence that exists suggests that the closer the network distance between early-stage investors, such as venture capital firms or business angels, and the new ventures in their network of connections, the more valuable they are and the better the chances of the latter being funded (Pasquini *et al.*, 2019).

This study focuses on early-stage ventures that have secured funding from business angels. We focused on the angel market because, although its importance as a source of funding for new ventures is well established (Mason *et al.*, 2017; Cowling *et al.*, 2021), the relevance of networks in the match between ventures and angels has so far received limited attention from scholars. This is probably because this market is largely opaque and invisible (Avdeitchikova *et al.*, 2008), making it difficult to gather reliable data. Recently, a few related articles have shed some light on the role of networks in the matching process between ventures and angels, but most of them examine only the investor side. Previous research has shown that angels use their personal networks to reduce uncertainty and information asymmetry when evaluating entrepreneurs and their ventures (White & Dumay, 2017). They also build co-investment networks through syndication with other angels to optimise the risk of their investment portfolios, especially when validating information about new industries they are considering investing in (Antretter *et al.*, 2020). Moreover, scholars have found that angels pay considerable attention to the characteristics of the entrepreneur's network when making investment decisions, as this can significantly impact the flow of resources to the venture and, thus, its performance (Cowling *et al.*, 2021).

The research gap is particularly evident on the entrepreneur side, which is somewhat surprising given that entrepreneurs generally struggle with a lack of knowledge about how to access the angel market (Landström & Sørheim, 2019) and what attributes they and their ventures need to possess to receive angel funding (Svetek, 2022). Learning from others who have been through the process before and getting external advice or validation can help reduce the challenges of identifying and understanding the business angel market. While it appears that entrepreneurs who use their networks are in a better position when approaching business angels, scholars have rarely explored this issue. The limited empirical evidence to date focuses largely on angel industry networks and suggests that entrepreneurs pay attention to their strength and nature when choosing which angels to approach (Granz *et al.*, 2021), as these may strongly determine the contribution of angels to the value added to the venture. Less is known about the extent to which entrepreneurs perceive their network as favourable and helpful in securing funding from business angels. This deficiency has led to calls for research to explore the relevance of entrepreneurs' networks when approaching business angels (Landström & Sørheim, 2019). Our article aims to fill this gap by investigating the nexus between the characteristics of entrepreneurs' networks and their perceived success in attracting funding from business angels. To achieve the objective, we used the CATI (Computer-Assisted Telephone Interviewing) method based on a survey questionnaire among early-stage ventures that had secured angel funding. We used the chi-square test of independence with correction for Yates' continuity, the one-tail Fisher exact test, and Spearman's rank correlation coefficient as data analysis methods.

Existing empirical studies have not quantified the role that entrepreneurial networks can play in securing angel funding. The answer to this question is important, given that less than 3-4% of ventures successfully attract angel funding (Mason *et al.*, 2017). The novelty and originality of our research lies

in revealing that network characteristics such as size, contact frequency and relationship quality can be associated with perceived success in raising capital from business angels. We shed light on which particular network ties facilitate this success, as we found that they are not equally important. We add to the entrepreneurial literature by clarifying how network involvement can influence an entrepreneur's ability to successfully raise capital from business angels, and should therefore be useful to entrepreneurs and policymakers. In particular, while the role of mentors and advisors in providing early-stage entrepreneurs with knowledge-based resources, identifying new opportunities and expanding their networks has been widely acknowledged (Sullivan, 2000; Ozgen & Baron, 2007), we contribute to the literature on the role of networks in early-stage venture financing by showing that, in the business angel market, their importance in raising equity capital may depend on certain characteristics of entrepreneurs' human capital and increases with their age and entrepreneurial experience. Our research also extends the knowledge on the extent to which the size of the entrepreneur's network matters for the valuation and the amount of capital from business angels that the entrepreneur is satisfied with. According to the literature, entrepreneurs can benefit from the expanded network when approaching investors (Shane & Cable, 2002) and subsequently increase their success rate in raising capital (Zhang *et al*., 2008). However, our research suggests that when it comes to attracting angel funding, it is particularly important for those entrepreneurs who have been through the process once before. Another contribution of our study is to extend research on the business angel market to a new geographical and market development context. While previous research on the business angel market has largely focused on mature markets, particularly in the UK and the US (Mason *et al.*, 2017; White & Dumay, 2017), the Polish market provides an interesting context due to its youth and its position as one of the markets with a higher angel investment to GDP ratio compared to more mature markets (EBAN, 2017).

The rest of the article is structured as follows. In the following section, the literature is reviewed and the research hypotheses are developed. Next, the research methodology is described and the results and discussion are presented. The final section provides concluding remarks and future research suggestions.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Most early-stage, high-growth, innovative ventures (Zygmunt, 2022) face financial constraints and challenges in raising external capital. While the successful raising of this capital is seen as critical to the development and survival of these ventures (Bilau & Sarkar, 2016), only a limited number of types of investors are willing to provide it due to the high level of ambiguity and uncertainty, and thus the likely high failure rate (Capizzi, 2015). One of these is business angels, wealthy individuals who make equity investments in unlisted companies to which they have no family ties (Mason & Harrison, 2008).

Previous research examining the success in attracting angel funding has largely focused on the investor side. In general, researchers suggest that what matters in the angels' decision to invest in a venture is that the entrepreneur/management team has certain characteristics, such as openness, honesty and trustworthiness, and a realistic approach to valuation and equity stake (Mason *et al.*, 2017). Scholars have also found that market potential and product readiness with a realistic route to market constitute important factors for angels when deciding whether to invest in an early-stage venture (Scott *et al.*, 2016). Moreover, according to the literature, even if the venture does not initially match their preferences, angels are more likely to invest in it if it has been recommended to them by another party whom they trust (Paul *et al.*, 2007). Recent research has enriched this perspective by providing evidence that the decision to invest in a venture may also depend on angels' human capital and cognition, such as previous professional and investment experience and decision-making style (Bonnet *et al.*, 2022).

While previous studies have looked mainly at the process of raising external capital from the investor side, issues related to the entrepreneur's perspective on the success factors in this process remain less explored. Our article is, therefore, positioned differently as we focus on how entrepreneurs perceive the characteristics of their networks as relevant to their success in attracting funding from business angels. In doing so, we draw on network theory, which suggests that involvement in networks can enhance the success of a venture (Rasmussen *et al.*, 2015), and on the evidence that one way in which entrepreneurs can compensate for a scarcity of financial resources is through networking (Heuven & Groen, 2012).

Scholars have found that networks influence venture financing decisions and help to overcome information asymmetries between entrepreneurs and potential investors (Shane & Cable, 2002). Furthermore, literature observes that entrepreneurs are likely to establish new network links in search of contacts who can act as intermediaries in accessing external finance (Jones & Jayawarna, 2010) and tend to use the legitimacy and reputation of their networks to enhance this access (Semrau & Werner, 2014).

Given that the business angel market is largely anonymous and invisible (Antretter *et al.*, 2020), it can be a challenge for entrepreneurs to understand the mechanisms that drive this market, in particular, how to properly prepare the funding proposal or how to deal with angels during the funding process. This may explain why as many as 73% of funding proposals are rejected outright by angels, and only a small proportion of those that make it past the pitch deck stage receive funding (Grilli, 2019). Therefore, we argue that networks are essential for entrepreneurs when they are constrained by a lack of, or limited, knowledge of how the business angel market works, how to assess the value of their ventures and how to negotiate the amount of capital the business angel will invest in the venture in return for equity.

Research on social embeddedness and social capital has accumulated strong evidence justifying the need to develop and maintain networks (McKeever *et al.*, 2014), and it is now widely accepted that entrepreneurship is embedded in networks of various kinds (Davidsson & Honig, 2003; Stuart & Sorenson, 2005). Building on previous research, which indicates that networks provide competencies, seen as knowledge and skills (Hayton & Kelley, 2006), that most entrepreneurs lack and need to build as they develop their ventures, we suggest that participation in networks can help overcome information asymmetries. Indeed, there is a strong emphasis on the importance of social ties in funding early-stage ventures (Shane & Cable, 2002). Lim and Cu (2012) argue that social ties help to alleviate issues arising from asymmetric information between early-stage equity investors and entrepreneurs, particularly when such ties are formed at the pre-funding stage. Networks may act as a primary source of knowledge useful in identifying and approaching business angels and providing valuable feedback (Drencheva *et al.*, 2022) and validation that entrepreneurs may need to increase their bargaining power when negotiating deals with angels. We suggest that network characteristics such as size and diversity, contact frequency and relationship quality, and the relevance and reliability of information from the network may be important for perceived success in raising external capital (Shane & Cable, 2002; Sullivan & Ford, 2014).

We may assume that the larger the networks, the greater the entrepreneur's chances of attracting angel funding, as larger networks are thought to increase the entrepreneur's access to various resources, including financial capital (Heuven & Groen, 2012). Indeed, as noted by Mollick (2014), the number of a founder's social network ties is positively associated with the amount of capital raised from investors. However, there is no consensus on whether such a relationship is linear. While some scholars claim that network expansion is beneficial as it limits dependence on particular network ties (Reagans & Zuckerman, 2008), others argue that increasing network size and relationship quality may lead to diminishing marginal returns in accessing financial capital (Semrau & Werner, 2014). We then suggest that an extensive network may not necessarily facilitate positive outcomes for entrepreneurs raising capital in the early-stage funding market. The rationale for this is grounded in the previous studies that prove that only a narrow set of ties are useful for new ventures (Zhang *et al.*, 2008). Therefore, the ability to access knowledge from the network and use it to leverage the chances of attracting funds from business angels may be severely limited, as there may not be many ties in the network who have been through the process before and could share experiences, provide feedback or, as observed by Heuven and Groen (2012), act as referrers, making it easier to approach an investor. Thus, we hypothesised:

H1: The network size is associated with the perceived success in attracting funding from business angels.

Access to a wide range of resources is also more likely when networks are diverse (Jones & Jayawarna, 2010). The use of different network contacts can contribute to the acquisition of diverse knowledge and feedback. It may be beneficial in closing the distance between equity investors and entrepreneurs (Pasquini *et al.*, 2019), thereby increasing the chances of securing funding. Stam *et al.* (2014) suggest that network diversity helps entrepreneurs manage their knowledge deficits by providing access to more diverse knowledge sets. Other scholars also argue that diverse networks improve

the reliability of information because the same information can be received by entrepreneurs from different sides (Heuven & Groen, 2012), allowing for its validation and relevancy assessment. Thus, we argue that entrepreneurs with a more diverse network appear to be better equipped to approach business angels and more successful in attracting their funding, and we hypothesised:

H2: The diversity of the network is associated with the perceived success in attracting funding from business angels.

The evidence is inconclusive as to whether the frequency of contact with the network is important for venture success. On the one hand, it is argued that it positively affects knowledge sharing and information asymmetry between ties (Florida & Kenney, 1988). According to previous research, contact frequency increases trust and commitment and is significant for high relationship quality (Semrau & Werner, 2014). This can greatly facilitate the exchange of information, which can be crucial in raising funds from business angels, including sensitive issues, in particular those concerning negotiated valuations or the amount of equity allocated in an angel round. On the other hand, while it is understandable that entrepreneurs may need to spend some time building their network, there are claims that they should be careful who they allocate their time to, as this may prevent them from developing contacts with valuable ties (Gargiulo & Benassi, 2000). Thus, we hypothesised:

H3: The frequency of contact with the network is associated with the perceived success in attracting business angel funding.

Network quality has been observed to be an intrinsic driver for early-stage ventures in the fundraising process (Huynh, 2016). Therefore, we expect that the quality of the relationship with the network is associated with success when raising funds from business angels. We draw on Drencheva *et al.* (2022), who argue that the venture's success strongly depends on the extent to which entrepreneurs approach the appropriate ties that can provide the necessary feedback of good quality. Relationship quality also involves trust, which facilitates the flow of information (Jaiswal-Dale *et al.*, 2022) and its use by entrepreneurs in their financial decisions. It also determines the accuracy and timing of information received from the network (Borgatti & Cross, 2003). Hence, we expect that establishing and maintaining a quality relationship with the tie is one of the keys to making use of the network and gaining knowledge about how the business angel market works, how to prepare for the funding process, and even when seeking introductions to early-stage equity investors (Lim & Cu, 2012), especially when one cannot access them directly and needs to develop trust-building mechanisms to increase legitimacy to obtain funding (Heuven & Groen, 2012). Therefore, we hypothesised:

H4: The relationship quality with the network is associated with the perceived success in attracting business angel funding.

The quality of business-relevant and reliable information that the network can provide is crucial for entrepreneurs (Huynh, 2016). The relevance of information should strongly influence the success in attracting angel funding. Indeed, it has been found that network's size and diversity do not protect against knowledge shortcomings, as knowledge of network ties comes from the individual experience of such ties (Sullivan & Ford, 2014). Thus, entrepreneurs who lack relevant knowledge about the angel market are likely to seek it within the current network and, if necessary, develop their network to manage information asymmetries to possess relevant knowledge (Kuhn & Galloway, 2015). Based on O'Reilly (1982), we also suggest that the reliability of information from the network may increase the likelihood of success in attracting angel funding, as it may provide a plausible basis for entrepreneurs to prepare adequately for business angel fundraising. The reliability and relevance of information seem to be fundamental in recognising how business angels work, how to successfully prepare a pitch deck and how to negotiate a deal with a business angel since entrepreneurs commonly face a lack of knowledge about how to access the angel market (Grilli, 2019). Therefore, we expect a link between network relevance, reliability, and funding success.

H5: The relevance and reliability of network information are associated with the perceived success in attracting business angel funding.

RESEARCH METHODOLOGY

Given the quantitative nature of the study, to investigate the nexus between the characteristics of entrepreneurs' networks and their perceived success in attracting funding from business angels, we chose a survey method using CATI among Polish early-stage ventures that had secured angel funding. The use of a quantitative approach allowed us to determine relationships (Stockemer, 2019) and is considered well-suited for providing information about the structure and patterns of social networks (Yousefi Nooraie *et al.*, 2020). It is widely employed in social network analysis. A recent review of studies on how entrepreneurs develop and use social networks demonstrated the dominance of the quantitative approach, with survey methods accounting for almost 70% of studies adopting this approach (van Burg *et al.*, 2012). We relied on CATI, which is well-suited when the question structure has many options (Choi, 2004).

We based the survey on the findings of the literature review. It consisted of several parts, which required the respondents' opinions on the following concepts: (1) key characteristics of the network, (2) the importance of networks in the business angel fundraising process, (3) approach to venture valuation, (4) networks after funding round, (5) the success in attracting angel funding, (6) general information about the respondent and the venture. We pre-tested the survey for clarity and layout (Collins, 2003) with two early-stage entrepreneurs. The Cronbach alpha is 0.791. Table 1 presents an overview of the variables used in the analysis. We measured success in attracting angel funding by three variables. Given the widely acknowledged difficulty of measuring success (Zajkowski *et al.*, 2022) and the fact that details of angel-entrepreneur contracts or negotiated valuations are, in most cases, confidential (Pasquini *et al.*, 2019), we followed Svetek (2022) and focused on entrepreneurs' perceptions. The variables included entrepreneurs' assessment of whether their expectations were met with respect to the following areas: (i) the valuation negotiated with the business angel, (ii) the equity stake taken out as a result of an angel round, (iii) the amount of capital invested in the venture by the business angels.

To characterise the network, we selected structural, relational, and information quality variables. Items included a set of listed network members, adapted from Kuhn and Galloway (2015) and Gao *et al.* (2023), with an option for respondents to insert a network member if not included in the previous items. We found the items complete, as none of the respondents used the option to add a source. For the structural dimension of the network, we considered the size of the network and its diversity. To operationalise network size, we followed Sullivan and Ford (2014) and asked respondents to rate the number of people they interacted with for business-related purposes over the past year. We measured diversity as the variety of contacts (Stam *et al.*, 2014). For the relational dimension of the network, we considered contact frequency and relationship quality. To measure contact frequency, we followed Heuven and Groen (2012) and asked respondents how often they interacted with network members for business-related purposes over the past year. We measured relationship quality by the regularity of contact with network members (business or otherwise) over the past year. For the quality of information within the network, we drew upon O'Reilly (1982) and Huynh (2016) and considered the perceived relevance and reliability of the network by the entrepreneur. We included several control variables. We controlled for age, as previous research suggests that people tend to have more contacts as they get older (Semrau & Werner, 2014). We also controlled for human capital, as entrepreneurs' previous work experience and education may indicate differences in skills and expertise. Following Manolova *et al.* (2006), we measured general human capital as the level of education. In line with prior studies, we measured task-specific human capital by the following variables: entrepreneurial experience, managerial experience, and industry experience. Based on Morris *et al.* (2012), we measured entrepreneurial experience as the number of years of being involved in previous venturing activities. Managerial experience was measured by the number of years of experience in senior management positions (Klyver & Arenius, 2022), while we measured industry experience by the number of years of experience in the sector in which the venture operated (Stam *et al.*, 2014). Consistent with Falik *et al.* (2016), we also controlled for entrepreneurs' experience in approaching business angels for funding, as we expect more experienced entrepreneurs to make less use of their network in this regard.

Table 1. Variables and items

Variables	Items
Perceived success variables	
Valuation	The valuation of the venture negotiated with the business angel was in line with what I had expected [5-point scale, anchored '1 = Definitely not' to '5 = Definitely yes']
Equity stake	The equity stake taken out as a result of an angel round was in line with what I had expected [5-point scale, anchored '1 = Definitely not' to '5 = Definitely yes']
Capital invested	The amount of capital invested in the venture by the business angels was in line with what I had expected [5-point scale, anchored '1 = Definitely not' to '5 = Definitely yes']
Network variables	
Network size	The number of people in the network relevant to my business in the last year [1 = up to five people; 2 = 6-10 people; 3 = 11-20 people; 4 = 21-30 people; 5 = more than 30 people]
Network diversity	The number of various business-relevant contacts in my network in the last year [1 = 1; 2 = 2-3; 3 = 4-6; 4 = 7-9; 5 = 10 and above]
Contact frequency	The frequency of contacting the network for business-related purposes in the last year [1 = none; 2 = less than once a month; 3 = once a month; 4 = several times a month; 5 = several times a week]
Relationship quality	The regularity of contact with network members (business or otherwise) in the last year [1 = none; 2 = less than once a month; 3 = once a month; 4 = several times a month; 5 = several times a week]
Information relevance	The relevance of business-related information from your network [5-point scale, anchored '1 = Definitely not relevant' to '5 = Definitely relevant']
Information reliability	The reliability of business-related information from your network [5-point scale, anchored '1 = Definitely not reliable' to '5 = Definitely reliable']
Controls	
Age	How old are you? [1 = 18-25 years old; 2 = 26-35 years old; 3 = 36-45 years old; 4 = 46-55 years old; 5 = 56 years old and more]
General human capital	
Level of education	What is your highest education level? [1 = primary school; 2 = lower secondary school; 3 = secondary school; 4 = uncompleted university degree; 5 = university degree]
Task-specific human capital	
Entrepreneurial experience	What is your experience in previous venturing activities? [metric, in years]
Managerial experience	What is your experience in senior management functions? [metric, in years]
Industry experience	What is your experience in the sector in which the venture operates? [1 = one year or less; 2 = two to five years; 3 = six to ten years; 4 = eleven to fifteen years; 5 = over fifteen years]
Experience in approaching business angels for funding	What is your experience in approaching business angels for funding? [1 = once; 2 = two to four times; 3 = five times or more]

Source: own study.

To select the appropriate method of data analysis, we first considered the nature of the data distribution. This approach arose from the growing debate about whether Likert items should be interpreted as interval or ordinal (Norman, 2010; South *et al.*, 2022). In turn, this determines the use of non-parametric or parametric tests. We performed the Shapiro-Wilk test and found that the data did not follow a normal distribution, so we turned to non-parametric tests (Kuzon *et al.*, 1996). Given the nature of the data and the sample size, we followed the methodological approach adopted in previous studies (Bilau & Sarkar, 2016). To compensate for deviations from the theoretical probability distribution if the total N assessed in the contingency tables is less than 40, we used the chi-square test of independence with correction for Yates' continuity to explore the relationship between two variables (with two or more categories). When expected cell frequencies were low (<5), we used the one-tail Fisher exact test (Sobel, 1995). In line with previous studies (Daszkiewicz, 2019; Klyver & Arenius, 2022), we used Spearman's

rank correlation coefficient (r_s) to determine the strength and direction of the association between variables. In line with the literature, we assumed that $0 \leq |rs| \leq 0.4$ indicates a weak relationship, $0.4 < |rs| \leq 0.7$ shows a moderate relationship, and $0.7 < |rs| \leq 1$ represents a strong relationship.

We based our research in Poland because it is an interesting research context. First, because it is a transitional economy. For a long time, it was centrally planned, and entrepreneurial activity was severely hampered. At the end of the 1980s, Poland began the transition to a market economy, which entailed radical changes in its structure. This lowered barriers to entry for the private sector (Zygmunt, 2018) and improved access to external finance, creating conditions for the development of entrepreneurial activity. Nowadays, the business environment in Poland is said to have grown rapidly over the last decade (Dość & Pattarin, 2024) but still lags behind more developed Western Europe (Lisowska, 2016). Second, focusing on the Polish business angel market offers an interesting context due to its relatively early stage, as it is claimed to have evolved significantly only following Poland's accession to the European Union in 2004 (Brzozowska, 2008). However, despite being small compared to older markets, it is gradually growing, with a reported 185% year-on-year increase in angel investment in 2021 (EBAN, 2022). According to the European Business Angels Network, between 2016 and 2020, the visible part of this market consisted of 500 business angels. It was worth an average of 14.7 million EUR, with an average of 48 funding rounds per year, including both initial and follow-on angel investments in ventures. Compared to other Central and Eastern European countries, the Polish visible market has the highest total business angel investment activity, both by amount and number of investments (EBAN, 2022).

The difficulty of sampling the market of business angels and their portfolio companies is well known (Mason & Harrison, 2008; Bilau & Sarkar, 2016) due to its large invisibility (Avdeitchikova *et al.*, 2008). This meant that we relied on non-probability sampling, which is in line with previous studies (Bonini *et al.*, 2018; Mason *et al.*, 2017). We used two sources to collect the sample for this study. Firstly, we identified ventures by searching the Crunchbase database. Crunchbase provides a comprehensive global database of companies, investors, funding rounds and more and is increasingly used as a data source for research on entrepreneurship, including the angel market (Alexy *et al.*, 2012; Dalle *et al.*, 2017). We filtered records by the company's location (Poland) and investor type (individual/angel, angel group). We then carefully analysed each company's records, eliminating those where the company was no longer active or funded solely by the owner(s), as Crunchbase's 'individual/angel' filter may also include such situations. As a second source of data, we subsequently searched the websites of Polish business angel groups for information on their portfolio of companies, based on previous observations (White & Dumay, 2017; Cowling *et al.*, 2021) that business angels tend to invest geographically close to their investee companies.

In total, we identified 110 ventures that had secured only an initial angel investment, as well as those that had also secured follow-on rounds. Firstly, an email invitation to all these ventures to participate in the study was sent with a cover letter. Next, it was followed with telephone calls to check their willingness to participate in the research. The data was collected between April and May 2023. The number of respondents from both sources was 40, giving an overall response rate of 36%. Whilst a higher response rate would be preferable, this is comparable to previous research on the markets of early-stage investing, even these highly mature (Wright *et al.*, 2004; Bonnet *et al.*, 2022). Given the specificity of the business angel market, it is not possible to assess representativeness as it is impossible to identify the entire population (Capizzi, 2015). However, regarding the characteristics of the Polish business angel market, the sample size could be assessed as large.

The respondents were 83% men, 48% under the age of 35 and 88% of university graduates with varying levels of experience in raising angel funding. The sample distribution reflects trends in early-stage entrepreneurial activity in Poland, with low levels of women entrepreneurship (GEM, 2023). The ventures were from the IT and automation industry (48%), services and trade (35%), and other industries (medical, food industry, furniture industry). 55% of them secured at least one follow-on round. The vast majority of ventures (70%) were no more than two years old when they received their first round of funding from business angels. Approximately 58% were developing products or services and were not generating revenue at the time.

RESULTS AND DISCUSSION

Table 2 shows the descriptive statistics of the variables used in the analysis.

Table 2. Descriptive statistics

Variables	Median	Mode	Range	Skewness	Kurtosis
Valuation	5	5	1	-1.05	-0.95
Equity stake	5	5	4	-2.71	8.35
Capital invested	5	5	4	-2.37	5.44
Network size	2	2	4	1.53	2.51
Network diversity	3	3	3	0.92	1.24
Contact frequency	2	1	4	0.51	-0.60
Relationship quality	2	2	4	0.22	0.36
Information relevance	3	1	4	0.25	-0.53
Information reliability	4	1	4	0.51	0.27
Age	3	3	3	0.24	-0.21
Level of education	5	5	1	-2.36	3.74
Entrepreneurial experience	7	7	13	0.78	0.07
Managerial experience	7	5	18	1.04	0.95
Industry experience	2	2	3	0.25	-0.74
Experience in approaching business angels for funding	2	2	2	0.18	-1.02

Source: own study.

For the perceived success variables, there is no variation in the median and mode, indicating that the middle and the most frequent response was 5 ('definitely yes'). This means that, for the most part, respondents perceived the equity stake taken out as a result of an angel round, the amount of capital invested in the venture by the business angels and the valuation of the venture negotiated with the business angel to be in line with their expectations. However, the range for 'equity stake' and 'capital invested' shows the diversity of respondents' answers (range 4), with a fairly homogeneous view on valuation (range 1). For the network variables, the descriptive statistics give a more varied picture. In particular, most respondents' network size was 6-10, and the number of various business-relevant contacts in their network was 4-6 (mode 2 and 3, respectively). Half of the respondents considered the information reliability of their network to be reliable, while the information relevance was rated less highly (median 4 and 3 respectively). Regarding task-specific human capital, most respondents had seven years of entrepreneurial experience, five years of managerial experience and two to five years of industry experience (mode 7, 5, and 2, respectively).

We examined the correlations and found evidence of a strong relationship between some of them (Table 3). Among the perceived success variables, we found a high correlation between the variables expressing the entrepreneurs' assessment of whether their expectations were met in terms of the equity stake taken out as a result of an angel round ('equity stake') and the amount of capital invested in the venture by the business angels ('capital invested'). In the group of network variables, we found a strong relationship between the size of the network and its diversity. We also found evidence of a high correlation between information relevance and relationship quality, as well as between information reliability, contact frequency, and information relevance. In the controls, we detected a strong relationship between industry experience, age and managerial experience. Therefore, we excluded the following variables from further analysis: equity stake, network diversity, information relevance, information reliability, and industry experience.

As there are several ways to capture perceived success in attracting business angels, hypotheses were independently tested for (i) the valuation negotiated with the business angel and (ii) the amount of capital invested in the venture by the business angels. Table 4 shows the results of the hypothesis testing concerning the contact frequency and relationship quality.

Table 3. Correlation matrix (Spearman's rank correlation)

Variables															
Valuation	1.00														
Equity stake	0.72*	1.00													
Capital invested	0.65*	0.82*	1.00												
Network size	0.53*	0.42*	0.48*	1.00											
Network diversity	0.25	0.20	0.19	0.70*	1.00										
Contact frequency	0.20	0.06	0.06	0.36*	0.53*	1.00									
Relationship quality	0.22	0.18	0.28	0.56*	0.55*	0.32*	1.00								
Information relevance	0.21	0.13	0.10	0.23	0.42*	0.82*	0.33*	1.00							
Information reliability	0.19	0.21	0.13	0.20	0.42*	0.71*	0.35*	0.94*	1.00						
Age	-0.05	-0.10	0.03	0.23	0.19	0.28	0.21	0.13	0.16	1.00					
Level of education	0.11	0.00	0.12	0.17	0.11	0.05	-0.11	-0.10	-0.12	0.23	1.00				
Entrepreneurial experience	-0.28	-0.30	-0.21	0.03	0.03	0.23	0.20	0.14	0.16	0.43*	-0.07	1.00			
Managerial experience	-0.23	-0.29	-0.22	-0.04	-0.24	0.07	0.12	0.03	0.04	0.49*	-0.06	0.64*	1.00		
Industry experience	-0.23	-0.26	-0.15	-0.01	-0.04	0.23	0.13	0.07	0.11	0.76*	0.13	0.66*	0.79*	1.00	
Experience in approaching business angels for funding	0.56*	0.39*	0.31	0.23	0.19	0.08	0.22	0.07	0.11	0.00	-0.03	-0.20	-0.17	-0.12	1.00

Note: *p<0.05
Source: own study.

The results presented in Table 4 are heterogeneous in support of the proposed association hypothesised in H3 and H4. Of all the network ties analysed, we found no evidence of significant associations for network ties such as suppliers, customers and accountants. The results for the remaining ties vary, as do the strength and direction of the relationships. In particular, the results show that hypotheses H3 and H4 are supported when examining the frequency of contacts and relationship quality with network ties such as family members, external investors (business angels, venture capital funds, and other external investors) and lawyers. However, the results indicate that these associations seem significant only for certain human capital characteristics of entrepreneurs. In particular, we found that age, university degree, and managerial experience tend to be important when it comes to the association of the contact frequency and relationship quality of the network with the perceived success in attracting angel funding. Moderate, positive Spearman's rank correlation coefficients suggest that perceived success in attracting angel funding increases with a higher contact frequency and relationship quality with equity investors. We found that contact frequency and relationship quality are especially significant for entrepreneurs who are older ($rs = 0.42$, $p<0.01$ and $rs = 0.40$, $p<0.01$, respectively in terms of perceived success in the valuation negotiated with the business angel), and have high entrepreneurial ($rs = 0.62$, $p<0.10$ and $rs = 0.66$, $p<0.10$ respectively) and managerial experience ($rs = 0.51$, $p<0.05$ and $rs = 0.54$, $p<0.10$ respectively) when it comes to whether the amount of capital raised from the business angel met their expectations. For family members, results are inconclusive. Specifically, we found that contact frequency is associated with lower perceived success in attracting angel funding for angel-backed ventures, while relationship quality seems to have the opposite effect. We found this to be

Table 4. The results of hypothesis testing for contact frequency and relationship quality (the chi-square test of independence with correction for Yates' continuity, the one-tail Fisher exact test, Spearman's rank correlation coefficient)

Variables	Valuation		Capital invested	
	Contact frequency	Relationship quality	Contact frequency	Relationship quality
Family members	(1) #** -0.57 rs** (2) 5.99 a** -0.51 rs* (3) # -0.54 rs** (4) #* -0.50 rs**	(3) #** 0.56 rs** (4) # 0.35 rs*** (5) # 0.40 rs***	(1) #*** -0.57 rs** (2) 4.14 a** -0.45* (3) #*** -0.41 rs*** (4) #*** -0.45 rs** (5) #*** -0.49 rs**	(3) #*** 0.66 rs* (4) #*** 0.39 rs*** (5) #*** 0.57 rs**
Non-business friends	(1) #*** -0.57 rs** (2) #*** -0.30 rs***		(1) #*** -0.57 rs**	
Entrepreneurs from the same industry	(1) # 0.41 rs*** (3) # 0.45 rs***	(1) # -0.39 rs*** (5) # -0.46 rs**	(1) #*** 0.48 rs*** (3) 3.43 a*** 0.59 rs** (4) # 0.51 rs***	
Entrepreneurs outside the industry		(1) # -0.39 rs*** (5) # -0.46 rs**		
Business advisors, mentors		(1) 3.15 a*** 0.50 rs** (2) #** 0.35 rs** (3) 2.80 a*** 0.46 rs**	(1) #*** 0.47 rs**	(1) 4.84 a** 0.60 rs* (2) 3.10 a*** 0.39 rs** (3) 3.30 a*** 0.52 rs** (5) # 0.44 rs***
Business angels, venture capital funds, and other external investors	(1) #*** 0.42 rs*** (3) 3.67 a*** 0.54 rs** (4) #*** 0.41 rs**	(1) #*** 0.40 rs*** (3) 3.79 a*** 0.52 rs** (4) #*** 0.40 rs** (5) #*** 0.44 rs***	(1) 3.06 a*** 0.52 rs** (3) 4.75 a** 0.63 rs* (4) 3.62 a*** 0.51 rs**	(1) 3.58*** 0.53 rs** (2) #*** 0.31 rs*** (3) 6.24 a** 0.66 rs* (4) 4.85 a** 0.54 rs* (5) #** 0.52 rs**
Lawyers	(1) 6.38 a** 0.70 rs*		(1) 5.24 a** 0.68 rs*	

Note: *p<0.10, **p<0.05, ***p<0.01. a the chi-square test of independence with correction for Yates' continuity, # the one-tail Fisher exact test, rs Spearman's rank correlation coefficient. Controls: (1) age; (2) level of education; (3) entrepreneurial experience; (4) managerial experience; (5) experience in approaching business angels for funding.
Source: own study.

particularly significant for younger and less managerially experienced entrepreneurs in respect of contact frequency and for those with less entrepreneurial experience regarding relationship quality. Frequency of contact with lawyers was found significant ($p<0.05$), which supports hypothesis H3. The results provide evidence of a positive, moderate relationship between frequency of contact with lawyers and perceived success in raising external equity for younger entrepreneurs ($rs = 0.6$, $p<0.10$ and $rs = 0.68$, $p<0.10$ for valuation and capital invested, respectively).

The results show no association between the quality of relationships with non-business friends and perceived success in attracting funding from business angels. Therefore, hypothesis H4 is not supported for this particular tie. However, we found a significant association for contact frequency with this tie ($p<0.01$). Spearman's rank correlation coefficients indicate a negative relationship ($rs = -0.57$, $p<0.05$) between the frequency referred to and the perceived success in securing business angel funding for younger entrepreneurs. In contrast, the results suggest that contact frequency with entrepreneurs from the same industry and other industries was not significantly related to perceived success given the valuation negotiated with the business angels. Thus, there is no support for hypothesis H3. Similarly, when perceived success in attracting angel funding was conceptualised as the amount of capital invested in the venture by the business angels, the results of the hypothesis tested show that the quality of the relationship with entrepreneurs from both the same and different industries does not seem to play a role in this success. We found no support for hypothesis H4 for these network ties. The Spearman's rank correlation coefficients are significant for younger entrepreneurs and those with less experience in approaching business angels for funding. Contrary to our expectations that contacts with business advisors and mentors would benefit entrepreneurs in raising external capital, results for the valuations proved to be significant only for relationship quality ($p<0.10$), supporting hypothesis H4.

Table 5 shows the results of hypothesis testing for the network size.

Table 5. The results of hypothesis testing for the network size (the chi-square test of independence with correction for Yates' continuity, the one-tail Fisher exact test, Spearman's rank correlation coefficient)

Variable	Valuation	Capital invested
Network size	(1) #** 0.40 rs*** (2) #** 0.35 rs** (3) #*** 0.41 rs*** (5) #** 0.60 rs*	(1) 3.58 a*** 0.53 rs** (2) 3.85 a** 0.42 rs** (3) 3.30 a*** 0.52 rs** (4) #** 0.43 rs** (5) #** 0.67 rs*

Note. *p<0.10, **p<0.05, ***p<0.01. a the chi-square test of independence with correction for Yates' continuity, # the one-tail Fisher exact test, rs Spearman's rank correlation coefficient. Controls: (1) age; (2) level of education; (3) entrepreneurial experience; (4) managerial experience; (5) experience in approaching business angels for funding.
Source: own study.

We found network size to be significantly associated with entrepreneurs' perceptions that valuations and the amount of capital negotiated with business angels met their expectations, supporting hypothesis H1. Given the characteristics of the entrepreneurs, as expressed through their human capital, the analysis shows that respondents consider network size as enhancing their perceived success in attracting angel funding by these entrepreneurs from angel-backed ventures who are older ($rs = 0.4$, $p<0.01$ and $rs = 0.52$, $p<0.05$ for valuation and capital invested respectively), have more entrepreneurial experience ($rs = 0.41$, $p<0.01$ and $rs = 0.52$, $p<0.05$ for valuation and capital invested accordingly) and have a university degree ($rs = 0.35$, $p<0.05$ and $rs = 0.42$, $p<0.05$) for valuation and capital invested respectively). Managerial experience was not found to be significantly associated with the perception of success in raising capital from angels concerning the valuation agreed with them. However, we found that, in terms of the amount of capital secured from business angels, entrepreneurs with higher managerial experience regard network size as significant ($rs = 0.43$, $p<0.05$). Moreover, the analysis

also provides evidence that those entrepreneurs who have only one experience of approaching angels recognise the importance of network size in attracting business angel funding ($r_s = 0.60$, $p<0.10$ and $r_s = 0.67$, $p<0.10$ for valuation and capital invested respectively).

Our results provide evidence for the hypotheses that there is the nexus between the characteristics of entrepreneurs' networks and their perceived success in attracting funding from business angels. As previous studies have shown (Adler *et al.*, 2002; McKeever *et al.*, 2014), entrepreneurs' embeddedness differs by environment and community, and therefore the impact of each relationship on entrepreneurial behaviour is likely to vary (Shane & Cable, 2002). Our results support the general idea that entrepreneurs build large networks to access various resources (Sullivan & Ford, 2014). However, in line with Zhang *et al.* (2008), we argue that not all ties are equally important in early-stage fundraising. Consisted with Semrau and Werner (2014), we found that relationship quality affects access to financial capital. Indeed, we contribute to the network theory by finding that relationship quality matters for entrepreneurs' perceptions of whether their deal with business angels met their expectations. Specifically, we found that the relationship quality between entrepreneurs from early-stage angel-backed ventures and business advisors and mentors appears to significantly contribute to an increasing perceived success in raising equity, both in terms of the valuation negotiated with the business angel and the amount of capital secured from them.

Our results also contribute to the literature on the role of networks in early-stage venture financing by demonstrating that the frequency of contacts with entrepreneurs from the same industry is significantly associated with perceived success in attracting angel funding, while no such pattern was found for entrepreneurs outside the industry. We argue that it demonstrates trust in interactions with entrepreneurs from the same industry, which needs to be built to compensate for a lack of or limited knowledge about how the business angel market works. We suggest that entrepreneurs from the same industry are more likely to provide the most relevant knowledge, particularly regarding the angels' criteria for industry specificity in the funding process. This supports Kuhn and Galloway's (2015) observation that entrepreneurs from the same industry are highly capable of providing contextually specific knowledge and resources. This is also consistent with Huynh (2016), who argues that trust within a network supports sustainability and reduces risk. However, we were somewhat surprised by the diminishing effect of relationship quality with entrepreneurs from the same industry on the valuation negotiated with business angels. They appeared not to provide reliable information that might be relevant to such negotiations. We are not sure what mechanisms govern this result. It may be attributed to the general observation that valuation practices are confidential and not easily disclosed (Hordijk & van de Ridder, 2005). It may also be related to a common perception that the valuation of early-stage ventures by equity investors is more of an art than a science (Köhn, 2018), suggesting that the benchmark to the valuation previously negotiated by entrepreneurs in the same industry and their feedback on the valuations may not play a significant role when negotiating the valuation with business angels.

Our results for frequency of contact with family members and non-business friends seem to be consistent with the literature (Klyver & Arenius, 2022), which suggests that close social ties may reduce the likelihood of success in entrepreneurial actions, especially when entrepreneurs have low social skills. However, we found a positive effect of relationship quality with family members on entrepreneurs' perceptions of whether their deal with business angels met their expectations, both in terms of valuation and amount of capital raised. We attributed this to the observation that strong ties, into which the family is categorised, are mainly effective in providing motivation, while they alone do not facilitate access to finance unless reinforced by weak ties (Heuven & Groen, 2012), and therefore suggest that being encouraged by family is important in early stage equity fundraising. We also contribute to the entrepreneurship literature by providing evidence that the quality of the relationship with business advisors and mentors is related to the entrepreneurs' perception of whether the valuation agreed with business angels met their expectations, which was particularly evident for younger entrepreneurs. This confirms previous findings that using professionals to access resources mainly concerns younger founders (Jones & Jayawarna, 2010). However, our results suggest that the same applies to more experienced entrepreneurs, particularly those with high entrepreneurial experience. We argue that this is mainly due to the anonymity and invisibility of the angel market, which makes it necessary

even for experienced entrepreneurs to use their network to reduce information asymmetry and acquire knowledge about the mechanisms of the business angel market.

In terms of practical implications, our results suggest that the frequency of contacts with entrepreneurs from the same industry can be beneficial in attracting business angel funding. Therefore, we extend Davidsson and Honig's (2003) proposal that entrepreneurs should develop and foster networks of all kinds, especially intrafirm relations, by implying that entrepreneurs should seek advice, particularly, within their industry when raising external equity. Our results also suggest that relationships with external equity investors, business advisors and mentors, and lawyers may be particularly important when raising funds from business angels. While the business angel market in Poland is at a relatively early stage with high growth potential, we suggest that the quality of relationships with specific ties should be established and maintained by early-stage entrepreneurs seeking equity funding. In doing so, we highlight an important role for entrepreneurship policy, which should aim at creating effective conditions for the development of entrepreneurial networks that would support early-stage entrepreneurs in raising capital from equity investors.

CONCLUSIONS

In contrast to previous studies, which have mainly focused on the perspective of equity investors, in particular, their investment criteria (Paul *et al.*, 2007), reasons for declining to invest in an early-stage venture (Mason *et al.*, 2017) and syndication (Antretter *et al.*, 2020), this article addresses the other side of the external capital raising process. We aimed to examine whether and to what extent entrepreneurs perceive the characteristics of their networks as relevant to their success in attracting funding from business angels. As hypothesised, the characteristics of entrepreneurs' networks are associated with their perceived success in raising funding from business angels. Therefore, this study makes an important contribution by providing empirical evidence on how entrepreneurs perceive their networks to be useful in meeting their needs, which arise when they face a lack of knowledge about how the angel market works. However, we found differences in the potential of entrepreneurs' networks to contribute to this success, and that not all network ties are equally important. We also found that more experienced entrepreneurs, in particular, are able to use their networks to facilitate their success in attracting angel funding.

Developing a better understanding of how entrepreneurs perceive the characteristics of their networks as relevant to their success in raising funding from business angels is important from an academic and policy perspective. Despite the growth of network and business angel studies, there is still a paucity of research empirically examining the importance of networks for entrepreneurs in raising capital from business angels. Understanding the extent to which certain network ties can potentially be conducive to attracting business angel funds that entrepreneurs would be satisfied concerning valuation and amount of capital raised may incentivise entrepreneurs to strategically build network relationships to be effective and useful in securing capital from business angels. While networks are generally perceived as beneficial (Rasmussen *et al.*, 2015; Pasquini *et al.*, 2019), our findings show that maintaining and developing relationships with specific actors, in particular such as business advisors and mentors, external equity investors, as well as lawyers, can be important for the success of a venture when seeking external equity funding. As such, entrepreneurs should examine how they can best facilitate contact frequency and relationship quality among their networks. Developing entrepreneurial networks, especially those involving actors involved in early-stage equity funding, need to be promoted, so that entrepreneurs can enhance their knowledge of how the business angel market works to effectively raise funds from angels.

We acknowledge the limitations of study, which may provide avenues for future research. The first set of limitations relates to the characteristics of the sample. While the response rate is similar to that reported in previous studies of early-stage equity investment, the sample size might be perceived as modest, particularly when compared to studies of mature markets (Cowling *et al.*, 2021; Bonnet *et al.*, 2022). However, the sample size could be because the analysed market is emerging and still growing, and consequently, the number of angel-backed ventures is not yet large. The sample size could also result from sampling bias. Although we followed the approaches used in previous research to identify

angel-backed ventures (Blaseg & Hornuf, 2024), some studies have suggested that relying on data from Crunchbase or angel group websites does not allow for the full spectrum of business angels to be captured (Svetek, 2022) and therefore does not provide a picture of all ventures that angels have backed. As a result, sample may be biased by undercoverage and self-selection. We also recognise that study focuses on only some characteristics of entrepreneurs' networks. Our data also do not allow for assessing the absorptive capacity of entrepreneurs (Scutto *et al.,* 2017) and possible behavioural changes over time, which may, e.g., affect the ability of entrepreneurs to utilise feedback and advice (Wierzbiński *et al.*, 2023) from their networks when approaching business angels. Therefore, we encourage future studies to complement our findings by considering these dimensions related to networking in early-stage funding markets. It is also important to acknowledge that sample includes ventures from one specific country. Our research results are therefore anchored in a national context and may be heterogeneous depending on market maturity, entrepreneurial culture and ecosystem (Tenca *et al.*, 2018). Hence, we propose that future studies should uncover the extent to which the nexus between the characteristics of entrepreneurs' networks and their perceived success in attracting funding from business angels is likely to vary across countries. Moreover, while study focuses on early-stage ventures that have successfully raised funding from business angels, we suggest that a more complete picture could be obtained by examining ventures rejected by angels. However, given the challenges of identifying successful ventures (Avdeitchikova *et al.*, 2008; Bilau & Sarkar, 2016), it is extremely difficult to find reliable data on the latter, as such information is usually kept secret by ventures and would-be investors. Future research that could identify such ventures would be a step forward in understanding of the network effect in getting funded by business angels.

The second set of limitations is methodological. While survey research is considered an important technique for collecting information about individuals (Stockemer, 2019), it may not allow for a comprehensive portrayal of the relevance of entrepreneurs' networks in the equity funding process. We suggest that future research using other methodological approaches, such as, e.g., in-depth interviews (Brown *et al.*, 2018) or situated observations (Kaffka *et al.*, 2021), may help to provide additional insights on this topic. Furthermore, due to sample characteristics, we used Yates' correction and Fisher's exact test. However, we acknowledge that we may have failed to detect some associations and, therefore, suggest the use of other methods, notably when a larger sample size is available. Although we based the variables on the previous studies, it is important to note that there may be concerns about how we measured them, given the different approaches in the literature, e.g., in terms of network size or relationship quality (Semrau & Werner, 2014). This may suggest further testing of the proposed hypotheses using different sets of measures, particularly those from social and dynamic network analysis.

Finally, to improve the overall understanding of the challenges faced by entrepreneurs in raising capital from angel investors, we recognise the need for additional research. In particular, we suggest that further studies should investigate the extent to which the human capital of entrepreneurs has an impact at the stages of the fundraising process. Previous studies emphasise the importance of entrepreneurs' motivation (Naiki & Ogane, 2022) and industry and founding experience in fundraising (Ko & McKelvie, 2018). However, prior studies often overlook that different stages of the fundraising process may require certain human capital characteristics. Therefore, it would be interesting to assess whether entrepreneurs with certain characteristics use their networks differently at various stages of raising capital from business angels (e.g., when choosing which business angels to approach, or during the selection, evaluation, and deal negotiation processes). The latter appears to be particularly important, as deal terms and pricing affect the extent to which entrepreneurs pass control of their ventures to business angels (White & Dumay, 2017) and the expected profits at exit (Gornall & Strebulaev, 2020). It would also be interesting to recognise the degree of importance that entrepreneurs attach to their network in relation to other considerations when seeking funding from business angels, such as being affiliated with reputable investors (Denis, 2004) or the potential benefits that business angels may bring to their ventures (Granz *et al.*, 2021). Future studies can also uncover which factors moderate the effects of entrepreneurs' networks on their success in attracting angel funding, e.g. how entrepreneurs position themselves and manage their network relationships (Gargiulo & Benassi, 2000; Gao

et al., 2023) to increase the likelihood of passing through the pitch deck stage, which most ventures fail to get past (Grilli, 2019), to enter the next stages of the fundraising process.

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