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Business angels and early stage decision making criteria: empirical evidence from an emerging market

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ABSTRACT

How do business angels assess a prospective entrepreneurial firm when they make an investment decision? This article examines a central question that informal venture capitalists have been struggling with for decades: What early stage decision making criteria do investors define and apply to reduce the volume of potential deals to a more manageable size? Based on semi-structured interviews with business angels in an emerging market, we show that investors are focused on the industry structure and product features, on the other side, our results also suggest a very strong support for the personality of the entrepreneur and management team. More specifically, entrepreneur trustworthiness is an essential element affecting an investor's decision to close a deal. Business angels set requirements in terms of the entrepreneur's equity stake in the start-up and monitoring tools to prevent the failure of investee firms. Our findings suggest that if there are warning signs that the project is in an existential crisis, most of the investors will reject their participation. We believe that our empirical results support both researchers and practitioners to establish a better understanding between the well-developed financial theories and the underresearched informal venture capital market in a Central and Eastern European country.

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1. Introduction

The presence and willingness of business angels (BAs), representing a specific segment of the financial market, to seek out and finance projects, which are frequently only in the conceptual phase, is a prerequisite for establishing and developing prospective entrepreneurial firms. Departing from prior studies, Grilli (2019), White and Dumay (2017), Mason and Harrison (2004, 2008), and Mason et al. (2019) conclude that BAs' activities contribute to accelerating the economic development of a country

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or region by supporting projects dominating high-tech innovative industries with low initial demand on the amount of invested capital. The risks faced by investors are usually significant, which makes this type of projects difficult to accept in terms of conventional forms of corporate funding. A higher level of risk is not necessarily related only to the specific business plan; the issue may also include its contractual security (or its absence), the organisational structure, etc.

Most research on BAs has been conducted in countries with efficient private and public capital markets, predominantly in the USA, UK, and Western Europe. White and Dumay (2017) report that 73% of 84 research articles on non-institutionalized private investors were conducted in North America, the UK, and/or Europe and that only a minor share of the studies delivers empirical evidence for BAs' activity outside these countries. There is little empirical evidence on angel investing activities within the Central and Eastern Europe ('CEE') in particular. The OECD (2011) study 'Financing High-Growth Firms' surveyed individuals in 32 countries to uncover local business angel markets, but neither of the interviews was held in the CEE region. Similarly, the research by May and Liu (2015), who analysed the BA market in 26 countries, does not shed light on these countries. Therefore, the issue of BAs' activities in Central and Eastern Europe is seldom touched in the academic literature, although many studies highlight that the degree of dependency on foreign capital might be critical for the future economic growth of these countries making the availability of financial alternatives essential from the long-term perspective (see, e.g., Karsai, 2018; Łapińska et al., 2019; Meluzín et al., 2018, 2021; Nölke & Vliegenthart, 2009; Skalicka et al., 2019; Zinecker & Bolf, 2015).

Most of the prior studies tackle a wide variety of issues in terms of the angels´ investment decision making (see, e.g., Landström, 1998; Maxwell et al., 2011; Miloud et al., 2012; Parga-Montoya & Cuevas-Vargas, 2019; Riding, 2008; Tyebjee & Bruno, 1984; Van Osnabrugge & Robinson, 2001; Zinecker et al., 2021a, 2021b). To our knowledge, however, there has been a paucity of empirical works that consider 'investment as a process in which decision making may vary in the course of time' as proposed by Landström (1998). Therefore, in this study, we are concerned with the early stage investment process in the Czech informal venture capital market that can be described as underdeveloped and underresearched while adopting the process approach. The question has been addressed in particular what screening criteria and procedures do angel investors define and apply to reduce the volume of potential contracts to a more manageable size?

We deal with this knowledge gap by conducting a survey among angel investors having headquarters in Czech Republic. Thirty-one semi-structured interviews were conducted to uncover the attitudes and practices of this so far unknown segment of private investors. Our findings suggest that the screening criteria that are considered critical in the initial investment decision stage include a range of attributes linked to both external and intra-firm environments such as industrial structures, markets, products, and the personality of entrepreneurs and their management team. Moreover, we show what modifications the BAs use to assess investment projects in order to reduce the volume of investment opportunities looking for investments.

We contribute to the literature two-fold. First, we deliver a unique data set on the BA market in the Czech Republic. We argue that obtaining primary data on BA investment approaches is difficult due to the 'fragmented and individualistic nature' of the Czech informal venture capital market (World Bank Group, 2018). Although the Czech Business Angel Association has been operating in the country since 2019, access to respondents remains an issue. Second, there has been no empirical work analysing the specific feature of angel investments, namely, the issue of early stage screening criteria. For entrepreneurs seeking to attract an investor, it is essential to know the processes and criteria on the basis of which BAs make investment decisions. The awareness of the requirements and the capacity to adapt the parameters, which may be influenced by the entrepreneur, can lead to a significant increase in the attractiveness of the project for BAs, and thus increase the likelihood of its implementation. The knowledge of project selection processes and criteria is also important from the perspective of the economic policy of the government funding landscape, the institutions of which (e.g., government seed funds, incubators and accelerators), in association with the identified best practices, actively influence and support innovative entrepreneurship.

The remainder of the paper is structured as follows. In the first part, a theoretical framework on BAs' investment decision-making process and selection and rejection criteria is developed. Next, the paper presents the methodological framework including the survey design and selection of data processing. Third, we deliver empirical evidence on the surveyed issues. Finally, we provide a discussion of the survey and propose a new agenda for the upcoming research.

2. Literature review

BA investors provide start-up capital to projects, whose potential of the rate of return significantly exceeds the initial investment. This potential is often derived from an innovative approach to meeting customer needs or ensuring the production process, i.e., the capacity of the solution to fundamentally change the existing market conditions (Le Trinh, 2019). Additionally, the transfer of experience, know-how and follow-on contacts is frequently crucial for the capacity of these projects to gain a foothold in the market (Aram, 1989; Bradley et al., 2002; Haar et al., 1988; Lumme et al., 1996; Mason, 2009; Nowak, 2021; Prokop et al., 2021; Sullivan & Miller, 1996; Wetzel, 1983). This indicates that BAs are unique in the private equity market in that they invest in projects avoided by 'mainstream' investors. As BAs invest mainly in the early stages of the business life cycle, they assume the greatest possible degree of investment risk, which emphasises the crucial importance of equity.

BAs consider a wide variety of criteria when assessing business opportunities. As shown in previous research, angel investors assess the macroeconomic environment, industry characteristics, as well as the intra-firm specifics, which concern mainly its development stage, human capital factors, and financial forecasts. There are many qualitative rather than quantitative factors and in the finance literature no general agreement on the weight of individual criteria exists. Some authors emphasise the influence of the external environment (e.g., Civelek et al., 2021; Cumming et al.,

2006; Gompers & Lerner, 1999; Gorączkowska, 2020; Kotlebova et al., 2020; Virglerova et al., 2020), others the industry and intra-firm characteristics (e.g., Belas et al., 2020; Dvorský et al., 2020; Ge et al., 2005; Ključnikov et al., 2021; Kobylińska & Lavios, 2020; Markauskas & Baliute, 2021; Miloud et al., 2012; Ondra et al., 2018; Sudek, 2004; Tyebjee & Bruno, 1984; Van Osnabrugge & Robinson, 2001). Significant uncertainty and risk are the reasons that make the candidate projects difficult to grasp from the perspective of conventional valuation methods. The explanation of this problem is straightforward. The future financial performance can only be determined on the basis of firm resources, external relations, and market opportunities. As these aspects are ex ante unknown, valuation and decision making must rely on alternative approaches (Miloud et al., 2012).

The empirical venture capital study by Miloud et al. (2012) is focused on the valuation of early-stage non-financial firms in France in the period between 1998 and 2007. The main contribution to the venture capital investment literature consists in introducing a systematic approach how venture capitalists (VCs) identify and evaluate early-stage candidate projects when standard valuation methods (e.g., discounted cash flow method, earning multiple method and net asset method, etc.) cannot be applied because of the lack of accounting data. The authors point out that the attractiveness of the industry, the qualitative aspects of the entrepreneur and top management teams, as well as the external links of a start-up firm significantly and positively affect its odds of obtaining entrepreneurial funds. Van Osnabrugge and Robinson (2001) surveyed institutionalized and independent venture capitalists in the UK to identify important aspects and investment criteria applied within the investment evaluation process. According to their results, independent VCs pay more attention to due diligence, are more focused on projects with higher expected financial returns, invest higher amounts of capital per contract, and emphasize the role of monitoring due to personal responsibility for investments.

Increasingly, researchers also address the issue how the project evaluation process varies over time. It is believed that the decision making criteria and their weighting within individual stages fundamentally differ at different points (Dalal, 2022; Landström, 1998; Riding, 2008). The pioneering study by Tyebjee and Bruno (1984) defined a model of VCs' investment activity, which involves five steps. Within the deal organization stage, the investors are looking for prospective investment activities; various intermediaries are supporting them with contacts to potential candidates. The purpose of the second stage is to define and apply screening criteria, which reduce the volume of potential deals available only to such industries investors are familiar with or they are interested in. The evaluation stage consists of an assessment of the potential risk and return of a particular project. Due to the lack of an operating history, the evaluation procedure is based on a subjective assessment of a multidimensional set of characteristics. If the results of the assessment are favourable and the investor accepts the deal, the VC and the investee company have to structure an investment agreement that establishes the amount, form, and price of the investment. The last stage involves post-investment activities such as setting up a control and consultation mechanism, or exit strategies.

Maxwell et al. (2011) emphasize the complexity of the investment decision process and suggest to distinguish between the 'selection' stage (some other authors, e.g., Riding, 2008, use the term 'screening') and follow-up stages in order to identify the main attributes of decision making. Within the first stage, potential investors filter out a small share of candidate projects while within the second (post-selection) stage these candidate projects are assessed more thoroughly in order to negotiate and close a final contract. The authors found that the interactions between investors and entrepreneurs are less subjective at the selection stage than after the number of criteria is reduced, since BAs assess an initial opportunity rather from a third-person perspective, i.e. more objective. Evaluation becomes more subjective only at the moment if the initial screening is positive, i.e., the project has been accepted, and investors can reflect their personal experience in order to reduce the information asymmetry and tailor the post-contractual relationship. Maxwell et al. (2011) conclusions contradict the traditional view that angel investors use large lists of factors (criteria) that in a combination enter a weighting model. Rather, a shortcut decision making heuristic known as elimination-by-aspects is used in the selection stage resulting in the rejection of such candidate projects in which a 'fatal flaw' was identified.

Argerich (2014) documented the screening criteria applied by angel investors financing early stage business projects in Spain during the period between 2003 and 2010 while using primary data gathered from entrepreneurs and BAs by means of a questionnaire. According to the results of the study, the screening stage is critical for entrepreneurs looking for funding and can be described as a 'death valley', as nearly 50% of the candidates are rejected within an interview lasting between 15 and 20 minutes. The authors conclude that in the early stage screening 'most value can be created or destroyed'. The implications for candidate projects trying to address informal VCs are that entrepreneurs should aware the weight given to the evaluation of their presentation skills and business proposals seeking for financing as contrary to the generally held view, the assessment of the entrepreneur seems to affect the final decision in a rather indirect way.

Certhoux and Perrin (2013) address the issue of BA attitudes toward candidate projects in the pre-contractual stage when no formal relationship between the angel investor and the entrepreneur exists. The qualitative research deals with the question how angel investors formally and informally support entrepreneurs in the early stage of the investment process. The methodology is qualitative and grounded in the activity system allowing researchers to put value on the links between an 'investor's action and the resources employed to carry out these actions'. The main conclusion contributing to the existing body of literature is that entrepreneurs must be able to persuade investors through reasoning or arguments that are consistent with the BAs´ expectations. To be successfully moved beyond the early stage assessment, the candidates must learn about the structures they are going to get in touch, to know organizational aspects, to understand investors´ profiles and thus be better aware of their motivations and requirements in terms of entrepreneurial projects.

Some literature suggests that the reasons that lead BAs to reject business proposals 'are not simply the converse of the reasons' that encourage them to invest. Feeney et al. (1999) carried out a survey aimed at shedding light at the investment pattern of

angel investors in Canada. It was found that if investors perceived the management team of the candidate firm as poor, the project was immediately rejected (the authors used the term 'deal killer'). On the other hand, management ability is not the primary 'deal maker'. The most important aspect being evaluated is the profit potential of the candidate project and the entrepreneur's capability to 'realize the potential of the business'. However, having the ability to 'realize the potential' cannot be interpreted as the converse of 'bad management'. Additionally, common reasons that cause project rejection include concerns in terms of under-capitalization of the candidate business and weak personal qualities of entrepreneurs. Feeney et al. (1999) also find that it is essential to angel investors that the business opportunities they are considering to invest are growth and profit oriented and have owners with managerial capabilities.

Furthermore, a number of studies also address the issue of how to deal with the lack of data related to candidate projects or the market in which the investee company should operate (e.g., Festel et al., 2013; Miloud et al., 2012; Sanders & Boivie, 2004; Stankeviciene & Zinyte, 2011). The authors suggest that the lack of data can be substituted by certain project attributes, which are relevant in terms of their potential to impact the viability and sustainability of the business proposal. The identified project attributes are evaluated on the basis of a set of criteria, where each of the variables is assigned a certain weight. However, the weights in individual studies are arbitrarily or on the basis of expert estimates. Miloud et al. (2012) propose that the assessment should take into account factors that are essential from the firm performance perspective. The authors argue that this approach is more beneficial than a 'pure guess'. By using a sample of 184 early-stage financing rounds on 102 start-up projects, the authors conclude that informal venture capitalists consider attributes such as the founder, top management team, industry attractiveness, and relations with the external environment of the company in particular. External environment, including social networks of the start-up's founders and/or their key members, can have significant influence on projects development (Durda & Ključnikov, 2019). In relation to the founder, Miloud et al. (2012) emphasize three categories of expertise: (a) industrial competences, (b) top management experience, and (c) start-up or other entrepreneurial experience. Regarding the competences, experience and creative abilities of managers, these factors are considered as crucial for economic success with empirical evidence of their impact (Potjanajaruwit & Girdwichai, 2019; Samoliu et al., 2021). Two attributes of the top management team play an essential role according to Franke et al. (2008) and Muzyka et al. (1996): the completeness and balance (heterogeneity) of the team. Assessing the quantity and quality of external networks of a start-up complements the overall view of venture capitalists on firm abilities in searching for 'new opportunities, acquisition of resources, and gaining legitimacy' (Stuart et al., 1999). In terms of industry attractiveness, Miloud et al. (2012) argue that two 'key structural elements' could positively increase the performance of new ventures, the degree of product differentiation, and the industry growth rate.

The aforementioned studies are based on data from the U.S., U.K., and Western Europe, i.e., from countries with well-developed financial systems. The CEE region in general and the Czech angel market in particular have been neglected in academic

research so far. An exception is represented by recent studies on BA characteristics and external determinants affecting the angel market (Zinecker et al., 2021a, 2021b). In this paper, our aim is to extend the discussion on start-up valuation with a focus on an emerging market within the CEE region. The following research question has been raised: How do investors value a candidate project when it seeks financing from non-institutionalised venture capital funds under conditions of the Czech Republic? More specifically, we deal with the issue of what rejection criteria domestic BAs consider and what screening criteria are believed to be essential within the early stage in deciding to invest in a proposal.

3. Methodology

3.1. Data sources and case selection

We have surveyed business angels carrying out their investment activities mainly in the Czech Republic. Since the population of angel investors is unknown because their activities are usually unorganised and non-institutionalised and there has been no public or private database 'systematically collecting data' (World Bank Group, 2018), we turned to convenience sampling (for details see, e.g., Goodman, 1961; Krippendorff, 2013). There are some doubts about the size and structure of the core set of BAs. However, it is assumed that the population of the informal venture capitalists in the Czech Republic is significantly smaller than comparable populations in countries with well-developed private equity markets (Feeney et al., 1999; Månsson & Landström, 2006; Mason & Harrison, 2004; Reitan & Sörheim, 2000; Sullivan & Miller, 1996).

The snowball sampling method was used here. The selection of respondents was made by first contacting individuals who are known to belong to the examined population; in total three investors with whom pre-research contacts existed were subsequently asked to nominate other BAs they considered to belong to the group under study. Next, a local business angel network provided us with additional valuable contacts to the angel community. A database of 47 BAs was created, however, we could survey only 31 angel investors as some of the nominated respondents refused to take part in the research, mostly because of 'the desire to remain anonymous' or 'having very strong feelings regarding disclosing strategic information to competitors'.

The survey itself was preceded by a preliminary research phase in which a limited number of respondents participated. The aim was to verify the relevance of interviewed topics based on relevant scientific studies (e.g., Festel et al., 2013; Franke et al., 2008; Groh et al., 2010; Johnson & Sohl, 2012; Månsson & Landström, 2006; Mason & Harrison, 2004; Maula et al., 2005; Miloud et al., 2012; Ramadani, 2012; Silva, 2004; Stankeviciene & Zinyte, 2011; Stedler & Peters, 2003; Wong & Ho, 2007; Zinecker & Bolf, 2015). With respect to the nature of the research as being explorative, the interviews were conducted in a semi-structured way and without any formal questionnaire as recommended by Opdenakker (2006) and Festel et al. (2013). Compared to other methods of data collection, the interviews represent a guarantee that interviewees can keep their privacy, which might be essential when considering

the participation in a survey. Within a pilot study, we partially modified the surveyed topics and tested the time requirements of interviewing.

The preliminary research was followed by the data collection phase. Open questions were asked regarding the decision-making of the BAs on the submitted projects. Emphasis was placed on screening criteria, defined for the purposes of this study as critical success factors fulfilment of which may either move the project past the selection phase or cause rejection of the investment opportunity a priori, i.e. non-inclusion of submissions among the candidate projects. Most of the interviews were held between April 2018 and May 2019. The interactions lasted between 45 and 90 minutes and all answers were recorded continuously per hand while using a structured response sheet (verbal protocol). The sheets were anonymised, i.e., no records contain any personal data.

3.2. Validity concerns

The use of the snowball sampling method raises specific questions. Despite the unique opportunity to access people whose populations are usually hidden, the convenience sampling is prone to bias, especially in the case of highly sensitive topics or when respondents may be exposed to the negative consequences of their statements (Waters, 2015). In addition, the identified BAs, either on the basis of their own claimed involvement in the activity or on the basis of their identification by an external researcher, may only represent a part of the surveyed population. This fact represents a significant limitation in terms of generalising the achieved results. The research sample may be affected not only by random sampling errors, which may be compensated when considering the population, for example, by the width of the reliability interval of some parameters, but also by systematic sampling errors (Hendl, 2015), the compensation of which might not be unambiguous.

3.3. Data analysis

Once the data collection was completed, it was cleaned up and checked for any errors. Firstly, the qualitative content analysis was applied here. This approach is based on the assumption that certain meanings and phrases which are most often repeated are also the most important components of a message. The respondents identified certain characteristics of projects which were categorized ('coded') in the protocols. The follow-up content analysis resulted in defining a set of factors (variables), each of which was assigned a significance level, and creating a data matrix. The quantitative data were subject to an exploratory analysis using mathematical and statistical methods. Descriptive statistics was used to assess survey findings for frequency, moreover correlation evaluates the strength of the relationship between selected factors (variables). The findings were reported to, and discussed with, the interviewed angel investors to verify their accuracy (e.g., Festel et al., 2013, recommended this procedure). Finally, the survey results on the Czech informal venture capital market are compared with those from other studies in terms of their consistency. Similarities

and reasons for possible differences are discussed with a focus on angel investors operating in well-developed markets.

4. Research findings

4.1. Sample description

Table 1 summarises the personal characteristics of the interviewed respondents. BAs are usually men; the most common is the age category from 40 to 60 years, yet the representation of respondents over 60 years is also strong. Non-institutionalised venture capitalists have above average education, having commonly completed MBA management courses. Very frequently, investors have experience in establishing and managing their own company, or experience in managing companies from the position of 'hired manager'. They commonly hold two to three job positions. In terms of sectors, experience in the areas of communications, computers, and electronics (ICT) is most frequently mentioned, while other sectors such as R&D, production, and services are less common. The respondents most often describe themselves as leaders (less often as managers), then also as entrepreneurs, former, entrepreneurs or investors (this designation predominates in the case of higher age categories in which investors are more often referred to as people with 'sufficient income and wealth'). In general, BAs perceive themselves as persons secured in terms of property, or at least as persons with above average income levels.

4.2. Why do investors reject funding? A categorization of data

The very first results of the content analysis imply that there are five factors that can be described as fatal in terms of assessing a candidate project in the early stage. The most common reason for rejecting a project consists in the lack of trust in the entrepreneur's personality. However, this mistrust, supported by a lack of any experience with the entrepreneur, is very often linked to an absence of willingness of the

Table 1. Survey results – the sample characteristics.

Age category/experience (Position)	Executive		Manager		Ex-entrepreneur		Investor		In total	
	n	% of *n*	*n*	% of *n*	*n*	% of *n*	*n*	% of *n*	*n*	% of *n*
< 30	1	3.23	1	3.23	0	0.00	0	0.00	2	6.45
30–40	1	3.23	1	3.23	0	0	1	3.23	3	9.68
40–50	5	16.13	0	0	1	3.23	1	3.23	7	22.58
50–60	7	22.58	4	12.90	1	3.23	0	0.00	12	38.71
> 60	4	12.90	0	0	1	3.23	2	6.45	7	22.58
In total	18	58.06	6	19.35	3	9.68	4	12.90	31	100.0
Age Category/Experience (Industry)	IT and telecommu-nications		R&D		Production		Services		In Total	
	n	% of *n*	*n*	% of *n*	*n*	% of *n*	*n*	% of *n*	*n*	% of *n*
< 30	1	3.23	1	3.23	0	0.00	0	0.00	2	6.45
30–40	2	6.45	0	0.00	1	3.23	0	0.00	3	9.68
40–50	5	16.13	1	3.23	0	0.00	1	3.23	7	22.58
50–60	4	12.90	4	12.90	3	9.68	1	3.23	12	38.71
> 60	5	16.13	1	3.23	1	3.23	0	0.00	7	22.58
In total	17	54.84	7	22.58	5	16.13	2	6.45	31	100.0

Source: Own research.

Table 2. Survey results – Why do BAs reject funding within early stage assessment?

Project rejection criteria ('fatal flaws')	*n*	% of *n*
The investor does not trust the entrepreneur (lack of any prior experience)	26	83.87
Insufficient financial participation of the entrepreneur	24	77.42
The project is perceived as ill-conceived	18	58.06
The investor does not understand the project / industry	16	51.61
The project is facing existential problems	10	32.26

Note: Multiple-choice possible.
Source: Own research.

candidate to participate in the project in the form of an equity stake. Other reasons used by BAs to reject include an 'ill-conceived project proposal', 'misunderstanding of the project idea', 'unfamiliarity with the project industry' and 'project assessment implying its non-viability'. The individual factors and the relative frequency of their occurrence are shown in Table 2. It is worth noting that that the majority of the respondents list several criteria at once.

Our next step was to investigate the correlations between the identified factors. Table 3 shows that apart from the relationship between the project rejection due to reluctance to participate financially (E) and the lack of trust in the entrepreneur (A), the relationship between the ill-conceived nature of the project (C) and the lack of trust in the entrepreneur (A) and the relationship between existential problems (D) and reluctance of financial participation (E) proved to be statistically significant. Other relationships are statistically insignificant.

The findings suggest that the reluctance of the entrepreneur to participate financially in the project leads to the overall lack of trust in the entrepreneur's personality (the opposite direction, i.e., the assumption that BA's lack of trust leads to the entrepreneur's reluctance to participate, is not probable, as the BA's attitude is not a priori known to the entrepreneur). This lack of trust is also reinforced by the ill-conceived nature of the project. However, the existential problems of the project are probably not a direct source of the lack of trust in the entrepreneur's personality (the mutual correlation is positive, and yet it is not statistically significant). The positive value is likely to be mediated by the relationship between the existential problems of the project and the entrepreneur's reluctance to further increase their financial participation. This reluctance may be a reaction to previous unsatisfactory business development, which weakens the entrepreneur's willingness to become more financially involved in the project. The very reluctance of BAs to enter into projects with existential problems is therefore probably not directly related to the lack of trust in the entrepreneur, but to the urgency of the situation, the potential solution of which requires considerable financial and other resources.

Furthermore, we were focused on a more accurate categorization of early stage screening criteria. In sum, our research results indicate six categories. A large part of investors is focused only on certain industries, refusing to invest in other sectors. Another group of investors conditions the investment on a certain degree of project progress, i.e., its life stage with regard to the potential for commercialization. The participation of entrepreneurs and their top management teams in financing the project seems to be essential. BAs define (albeit different) requirements on the characteristics of the product which the entrepreneur is going to launch to the market, as well

Table 3. Correlation matrix – correlations between the reasons for proposal rejection.

Factors	A	B	C	D	E
A – The investor does not trust the entrepreneur (lack of any prior experience)	1.00	0.10	**0.52***	0.30	**0.60***
B – The investor does not understand the project / industry		1.00	0.09	−0.02	−0.21
C – The project is perceived as ill-conceived			1.00	0.17	0.32
D – The project is facing existential problems				1.00	**0.37***
E – Insufficient financial participation of the entrepreneur					1.00

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

as on the characteristics of the market itself. The requirements in relation to the pay-back period and the required rate on return, the time horizon, and the possibilities of monitoring and control are repeatedly emphasised.

For investors, meeting certain predetermined values of the defined criteria serves as a necessary condition for further consideration of the project to determine whether it could be moved beyond the early stage assessment. BAs, however, do not have the values of the criteria set identically and differ significantly in their requirements to meet them. Therefore, if there is agreement among all respondents that a factor is critical (fatal) and certain minimal requirements in terms of their characteristics should be defined, we marked this fact with the symbol **. Conversely, if there are some criteria for which minimum requirements have not been defined, then these are marked with the symbol *. For details see Table 4.

4.3. Market potential

Nearly two-thirds of angel investors expect that the market in which the candidate firm should operate is 'fast growing' and more than half of them require that a clearly identifiable market for the product has been established. Moreover, we found that one-third of BAs believe that a large market potential is linked only to the possibility of international expansion. Summing up, the results suggest that the interviewed BAs can be categorised into two basic yet at the same time intertwining groups. The first emphasises the potential for market growth and the expansion of the project on an international scale. The investors in the second group require that there is evidence that potential customers have already expressed their interest in the product.

The frequencies of the responses and their correlations are shown in Table 5. The results indicate that BAs looking for the possibility to expand abroad usually also require a rapid market growth. Most investors demanding that the product market should be already established also pay great attention to competitors, i.e., their number, size, position, etc. An essential aspect consists in the issue of whether there is a strong competition or not in the market, and whether the entrepreneur has at least a certain advantage over the other competitors that can be maintained for a sufficiently long time.

The probability that an entrepreneur will not be immediately excluded from further consideration if a specific combination of the market growth condition with another factor occurs is shown in Table 6. Our calculations suggest that meeting two or more conditions related to the characteristics of the market at the same

Table 4. Survey results – categorization of early stage screening criteria.

Category	Early stage screening criteria
Market potential	Is there a clearly identifiable target market for the product?**
	Market size (Can a large international market be established or does it already exist?)**
	Market growth (a fast growing market)**
	No significant competition*
Investors' preferences	Industry*
	Project (life) stage*
	No fundamental problems hindering the project implementation*
Entrepreneur and quality of management team	Formal education*
	Start-up experience*
	Experience in the industry*
	Management experience*
	Complexity of the management team*
	Project progress to date*
	Perceptions and attitudes of the entrepreneur*
Product	Value added (a consumer perspective)**
	Uniqueness (compared to the competition)**
	Protectability (potential patent protection)*
	Growth potential of the project/market**
Financial criteria	Clear payback period**
	Clear return on investment**
	Exit perspective (time horizon of the investment/ payback period)*
	Co-financing (equity stake of the entrepreneur)**
Investor control and monitoring	Proactive rather than reactive management attitude (It is expected that BAs will take senior management positions in the investee firm and/or become involved as consultants)**

Note: The symbol** means that the criteria are critical (fatal), i.e. minimal requirements in terms of their characteristics are defined to determine whether a project could be moved beyond the early stage assessment. The symbol* means that the criteria are NOT critical, i.e. no minimal requirements in terms of their characteristics are defined.
Source: Own research.

Table 5. Survey results – market characteristics.

Factors	A	B	C	D
A – Market size (an international market exists or can be established)	1.00	**0.41***	−0.33	−0.22
B – Market growth (a fast growing market)		1.00	**−0.36***	−0.35
C – Target market can be clearly identified			1.00	**0.45***
D – No significant competition				1.00
	A	B	C	D
Frequency *n* (% of *n*)	11 (35.48)	20 (64.52)	18 (58.06)	10 (32.26)

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

time increases the likelihood of business proposal acceptance within the early stage assessment.

4.4. Investors' preferences

From the perspective of the industry, some BAs state that they focus only on certain branches, while at the same time the distribution of invested funds is not uniform. The IT projects are preferred by 61% of the respondents, while 29% of the angel investors focus on telecommunications and 26% on services. Some BAs state that

Table 6. Probabilities of not being immediately rejected if specific conditions in terms of the market characteristics are met (in per cent).

	No additional requirements	An international market	A fast growing market	A clearly identifiable market	No significant competition
No additional requirements		3	16	13	3
An international market + a fast growing market	39			68	42
An international market + a clearly identifiable market	16		68		35
An international market + a competitive advantage	6		42	35	
A fast growing market + a clearly identifiable market	39	68			65
A fast growing market + a competitive advantage	19	42		65	
A clearly identifiable market + a competitive advantage	32	35	65		
All requirements are met	100				

Source: Own calculations.

they are involved in multiple industries at a time. There are 48% of investors who explicitly engage in non-ICT industries, and 45% of those who indirectly admit other industries. The correlation coefficients suggest that those investors who invest in IT at the same time prefer telecommunications and avoid other industries. The same applies to investors in telecommunications, as their second preferred industry is IT (in this case, however, the relationship is much weaker). The BAs who do not rule out investments in other industries also emphasise other criteria in their investment decisions, such as the person of the entrepreneur (for details see Table 7).

Table 8 shows that in terms of the project life stage, most investors prefer the seed and start-up financing. At the same time, more than a fifth of the BAs refuse to enter into projects in serious existential difficulties (e.g., due to an acute lack of financial resources, serious organisational and personnel shortcomings, or ambiguous project direction). There are less than half of the investors who admit to investing in a project in the seed stage. At the same time, however, this group shows a greater willingness to enter into projects which have found themselves in existential problems. This may be due to the investor's specific approach to risk (tendency to be risk friendly) or the nature of this category of investments representing a professional challenge.

Within a further data analysis, we assumed only three project life stages: Seed and start-up projects, emerging projects and expansion projects. The first category of projects can be moved beyond the early stage assessment only by the A-investors, the second one by the A- and B-investors, and the third category of business proposals can be acceptable to B-, C- and D-venture capitalists. A specific category is represented by projects in an existential crisis. Table 9 shows the probabilities that a proposal will be considered by investors within individual project life stages. Not surprisingly, our findings suggest that emerging projects can obtain resources most

Table 7. Survey results – investors' preferences in terms of the industry.

Factors	A	B	C	D	E
A – IT	1.00	0.22	−0.29	**−0.42***	0.08
B – Telecommunications		1.00	−0.05	−0.19	0.13
C – Services			1.00	0.31	0.06
D – Investors who do not exclude another industries				1.00	**0.42***
E – It comes to people and other factors					1.00
	A	B	C	D	E
Frequency *n* (% of *n*)	19 (61.29)	9 (29.03)	8 (25.81)	15 (48.39)	14 (45.16)

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

Table 8. Survey results – investors' preferences in terms of the project life stage.

Factors	A	B	C	D	E
A – Seed	1.00	−0.22	−0.21	−0.25	**0.40***
B – Start up		1.00	−0.32	−0.16	0.01
C – Emerging stage			1.00	0.18	−0.29
D – Expansion				1.00	−0.24
E – Not in an existence crisis					1.00
	A	B	C	D	E
Frequency *n* (% of *n*)	15 (48.39)	18 (58.06)	7 (22.58)	5 (16.13)	7 (22.58)

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

Table 9. Probability that a project can be moved beyond the early stage assessment depending on the project life stage (in per cent).

Project life stage	Seed and start-up	Emerging stage	Expansion
General acceptability of projects	48	84	77
Acceptability of projects in an existence crisis	19	23	13
Share of crisis financing on funds invested	40	27	17

Source: Own calculations.

often while slightly lower success rates can be assigned to expansion projects. Seed and start-up projects are typically related to a significantly lower success rate. If a project has been facing an existential crisis, the situation changes substantially. Seed and start-up investors are willing to have greater risk tolerance compared to their more conservative peers focused on emerging and expansion project life stages. We explain this result not only by a different risk attitude but also by different amounts of funds typically required in individual project life stages.

4.5. Entrepreneur and the quality of the top management team

The most important factor considered consists in the progress achieved so far in the candidate project implementation. The assessment of 'progress' by the investors is ambiguous. In some cases, what is mentioned as a criterion is the comparison of the evaluated project with other projects in the investor's portfolio, while in others the respondents emphasise the initial conditions of the evaluated project as a comparison basis. Most often, however, the investors deal with the issue of whether the entrepreneur and their team have already done 'everything that could be done' for the success of the project. It is therefore an evaluation of the success so far, although the manners of perceiving this aspect differ.

Table 10. Survey results – entrepreneur and the management quality.

Factors	A	B	C	D	E	F	G
A – Formal education	1.00	−0.16	−0.10	−0.21	**−0.45***	**0.45***	−0.21
B – Start-up experience		1.00	0.18	0.23	0.21	−0.21	0.19
C – Management experience			1.00	**0.38***	0.07	−0.25	−0.09
D – Experience in the industry				1.00	0.09	−0.09	−0.12
E – Project progress to date					1.00	**−0.52***	**0.59***
F – Perceptions and attitudes of the entrepreneur						1.00	−0.22
G – Complexity of the management team							1.00
	A	B	C	D	E	F	G
Frequency *n* (% of *n*)	3 (9.68)	6 (19.35)	15 (48.39)	9 (29.03)	25 (80.65)	5 (16.13)	20 (64.52)

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

The second most important criterion is a certain balance (comprehensiveness) of the top management team. The BAs often wish to be the 'last link in the chain' which is missing to further develop the project (from the financial, professional, or business perspective). This is the reason why the 'completeness', 'balance' or 'a certain degree of readiness' of the management team is so frequently mentioned. Surprisingly, the respondents assessed the perceptions and attitudes of entrepreneurs to a much lesser extent than expected. In principle, two approaches are being considered. The first one consists in the focus on the evaluation of the personality characteristics of the entrepreneur (attitudes and perceptions), while the second focuses on the objective criteria related to the entrepreneur's history (i.e. the evaluation of experience, success and formal education).

The remaining results indicate that the requirements for formal education of the entrepreneur play a rather minor role in the decision-making process, yet the investors place more emphasis on the entrepreneur's previous experience with start-up projects, the industry and entrepreneurship or project management.

The categorisation of the requirements is provided in Table 10, which also includes the values of the correlation coefficients between the defined variables.

4.6. Product

When assessing the candidate product, angel investors most frequently focus on the uniqueness (novelty) of the solution compared to competitors and its value added from the consumer's perspective. The patent protection seems to them to be also important, however, the requirement for innovativeness of the product may be also considered as a weaker version of the uniqueness of the solution without patent protection (this requirement does not necessarily assume the duration of uniqueness into the future and thus indirectly allows for possible follow-up by competitors). The product expansion potential is perceived as essential, although this factor is not explicitly mentioned so frequently. This might be due to the fact that the potential of new solutions in existing markets is easier to estimate. The condition for the admissibility of the project from the BAs' perspective is therefore the fulfilment of the requirement for novelty of the solution or its value added for consumers. The values of the correlation coefficients between the requirements for expansion potential and the value

Table 11. Survey results – product.

Factors	A	B	C	D
A – A new solution (uniqueness compared to competitors)	1.00	0.35	0.11	−0.22
B – Protectability (a potential patent protection)		1.00	−0.18	−0.20
C – Product/project expansion potential			1.00	**0.37***
D – Value added from the consumer perspective				1.00
	A	B	C	C
Frequency *n* (% of *n*)	23 (74.19)	7 (22.58)	26 (83.87)	19 (61.29)

Note: Obs. = 31, critical value = 0.36, * indicates a statistically significant correlation at the 5% level (2-tailed).
Source: Own calculations.

added of the product for customers have been found statistically significant. For details, see Table 11.

The angel investors are focused on the product value added from the consumer perspective in particular. In such a case, they pay special attention to the expansion potential of the product. Two main indicators may be identified by which the BAs estimate the growth potential of business proposals under evaluation. Most frequently, it is the potential for substantial expansion of the product market, and to a lesser extent the potential for penetration abroad. Some investors do not define the requirement for growth of the market as a whole, but rather focus on the indicator of the growth of the market share, which can be achieved with a unique solution. The frequencies of the individual response categories are shown in Table 12.

4.7. Financial criteria and time horizon of investment

For the vast majority of investors, the issue of the entrepreneur's financial participation in the project seems to be crucial. The BAs expect that the candidates invest their own money in the project. The equity stake requirements aim in particular to ensure the motivation of the entrepreneur (and other key persons) to be engaged in the ongoing stages of the project, thus creating the necessary incentives in relation to fulfilling the investors' interests. Only 10% of the investors admit that under certain circumstances, they are willing to provide financing even without the financial participation of the project initiator.

Furthermore, investors most often focus on increasing the market value of the project over time. The value is usually defined from the perspective of a 'third party', i.e., a prospective buyer. This may be referred to as the subjective value, which means that the project does not necessarily have to be evaluated only on the basis of future cash flows, but also on whether the investment is associated with a certain synergy from the buyer's perspective. This result may be interpreted as complementing the prevailing view, namely, that the investors prefer the assessment of a project based on free cash flows (i.e., the project valuation based on objective value). The third most frequent financial criterion is the potential for sales growth, defined as one of the value drivers increasing the project value. The payback period indicator is relevant for 26% of the respondents. About 10% of the investors state that they do not follow exclusively the financial criteria in their decision-making, and even that these are not crucial. The relative frequencies of the response are shown in Table 13.

Table 12. Survey results – assessment of market potential of the product/project.

Factors	*n*	% of *n*
Only value added from the consumer perspective required	1	3.23
Only a new solution (uniqueness) required	4	12.90
Only fast growth potential required	1	3.23
Both value added and fast growth potential required	18	58.06
Both innovativeness and fast growth potential required	19	61.29
Both innovativeness and value added for consumers required	12	38.71
Innovativeness, value added and fast growth potential required	12	38.71

Source: Own calculations.

Table 13. Survey results – financial criteria.

Financial criteria	Financial participation of the entrepreneur	Market value growth	Sales growth	Payback period	Financial criteria are not crucial (other than financial criteria might play a role)
n	28	11	9	8	3
% of *n*	90.32	35.48	29.03	25.81	9.68

Source: Own calculations.

Table 14. Probabilities of not being immediately rejected if specific conditions in terms of the financial criteria are not met (in per cent).

	Financial criteria are not crucial	Payback period	Sales growth	An increase of the investee firm value
Financial criteria are not crucial	10	36	39	45
Payback period	36	36	65	71
Sales growth	39	65	39	84
Market value growth	45	71	74	45

Source: Own calculations.

In Table 14, the frequency distribution of individual requirements (on the diagonal) as well as the frequencies of meeting at least one of the two financial criteria are shown. We assume that achieving a specific combination of financial criteria might be used to estimate the probability that the investor will not reject the project. It is worth noting that nearly 10% of angel investors acknowledge that financial indicators are not essential within the early stage screening. This result suggests that other than purely financial criteria might play a role. A specific payback period can be considered a prerequisite for a future increase of the investee firm value. Similarly, a high percentage growth in sales might represent an important value driver in the upcoming period. The following hierarchical relationships between the identified indicators can be derived from our calculations: Financial criteria are not met < sales growth; a positive payback period < market value growth. There is no clear relationship between the sales growth and payback period. Both criteria, however, are supposed to be value drivers in the long-term.

The BAs were also asked about the importance of the requirements in terms of financial ratios. Most respondents consider the high return on investment (ROI) to be very important. A smaller part of the respondents considers this ratio important (it can therefore be assumed that they would probably be willing to lower their

Table 15. Survey results – requirements in terms of return on investment (ROI).

ROI requirements	High ROI is essential	High ROI is essential in the long term	Requirement in terms of a high ROI might be downsized
Frequency *n* (% of *n*)	25 (80.65)	2 (6.45)	4 (12.90)
Accepting the project because of a specific ROI value			
		n	% of *n*
ROI is expected to be very high		31	100.00
ROI is expected to be high (in long-term)		6	19.35
ROI is expected to be (just) positive		2	6.45
Zero or negative ROI		0	0.00

Source: Own calculations.

requirements under certain circumstances compared to the first group). The third group considers the high return on investment to be important in the long run (they would therefore be willing to lower the requirements in the short term, which means that they are willing to accept a longer payback period). A positive ROI value can therefore be interpreted as a *conditio sine qua non* to enter a project. Although the results presented in Table 15 do not set specific values (the requirements of individual BAs may vary significantly), they may be interpreted in relation to the return on alternative investments. Thus, we suggest that the investors in the vast majority of cases demand a higher rate of return compared to alternative investments (e.g., in mature companies or in companies with publicly traded shares), which is in line with the established financial theory (Bradley et al., 2002; Lumme et al., 1996; Mason, 2009).

Most investors consider an investment time horizon of up to 5 years. However, a significantly longer time horizon makes no exception. Some BAs even state that the time horizon is not essential to them. On the other hand, several investors mention investments in projects, which they have made or intend to make, and whose time horizon does not exceed one year. Additionally, we calculated the probability that of not being immediately rejected because of exceeding the time horizon of the investment (the calculations result from the difference between 100% and cumulative frequencies shown in the third row in the table). For details, see the categorisation of responses in Table 16.

4.8. Investor control and monitoring

The tools used by angel investors to monitor and supervise the projects vary as well as the extent to which these tools are used (also with respect to the personal involvement of the BAs in the investee firm). As shown in Table 17, some investors rely on regular meetings with the entrepreneur and reporting on the project development. Direct access to the operating results of the investee firm has been emphasized (usually on a monthly basis), which may be considered a higher form of supervision. In some cases, the BAs require the implementation of an enterprise information system (EIS). Another forms of investment supervision include hiring professional management team members in order to monitor the company's operations and, inter alia, make every effort to promote and protect the interests of investors, e.g., by ensuring

Table 16. Survey results – time horizon of the project/investment.

Time horizon of the investment/project	Up to 1 year	Between 1 and 3 years	Up to 5 years	Up to10 years	More than 10 years
n	2	9	9	8	3
% of *n*	6.45	29.03	29.03	25.81	9.68
Cumulative frequencies (in per cent)	6.45	35.48	64.51	90.32	100.00
Probabilities of not being immediately rejected because of exceeding the time horizon of the investment (in per cent)	100.00	93.55	64.25	35.22	12.41

Source: Own calculations.

Table 17. Survey results – control and monitoring tools.

Control and monitoring tools	*n*	% of *n*
Regular meetings with the entrepreneur and his/her management team	7	22.58
Access to accounting information and reports	6	19.35
Introduction of an enterprise information system (EIS)	11	35.48
Professional management team promoting and protecting the interests of investors	4	12.90
Control and monitoring of cash flows and assets of investee firm	3	9.68

Source: Own calculations.

that the hired accounting and consulting companies have access to the EIS. Cash flow supervision or restriction of the possibility of disposing of certain assets by entrepreneurs are considered as the most effective tools supporting BAs in their monitoring and control activities.

5. Discussion

Stemming from the theoretical background and prior empirical research, this study uses survey-based data from Czech angel investors, which has not been touched in the literature yet, to identify criteria essential to new entrepreneurial project assessment in the screening phase. We believe that new insights into early stage decision making nicely complement the already existing state of knowledge (see, e.g., Argerich, 2014; Certhoux & Perrin, 2013; Maxwell et al., 2011; Miloud et al., 2012; Van Osnabrugge & Robinson, 2001) and indicate several implications for BAs and prospective investee firms.

Firstly, our findings confirm the assumption that the Czech BAs evaluate business proposals separately depending on the stage of the investment life cycle. Angel investors systematically distinguish between the early stage, in which business opportunities must be screened and their number downsized to a more manageable number, and the follow-up phases, in which pre-selected candidate projects are assessed more thoroughly in order to negotiate and close a final contract. In this regard, the surveyed angel investors do not differ from their counterparts operating in well-developed informal venture capital markets (Argerich, 2014; Certhoux & Perrin, 2013; Maxwell et al., 2011).

Next, our results imply that 'deal making criteria are not simply the converse of deal breaking criteria' (Feeney et al., 1999). We have shown that BAs differentiate

between 'fatal flaws', which can cause immediate project rejection, and early stage screening criteria focused on turning down the number of potential deals available. If there is a mistrust in the entrepreneur's qualities supported by, e.g., an unwillingness to invest own money in the business, entrepreneurs or project are unlikely to receive funding.

The theory and empirical findings reported for mature informal VC markets (Argerich, 2014; Certhoux & Perrin, 2013; Maxwell et al., 2011; Miloud et al., 2012; Van Osnabrugge & Robinson, 2001) suggest that screening criteria determining angels´ decision making whether to continue the procedure may be classified into three categories. Argerich (2014) points out a positive evaluation of the entrepreneur and the quality of the top management team, the business opportunity, and presentational aspects. Our empirical evidence delivers support for the first two categories of criteria compromising a total of 21 variables. We show that angel investors are focused on the industry structure and product features on the one side, on the other side, our results also suggest a very strong support for the personality of the entrepreneur and his or her management team. More specifically, entrepreneur trustworthiness is an essential element affecting an investor's decision to negotiate and close a deal. Surprisingly, the presentational skills seem to be somehow neglected by the Czech BAs, although Argerich (2014) emphasizes the role of them and calls angel investors to 'be aware of the weight given to presentational aspects and question to what extent there may be entrepreneurial projects with a good business opportunity and sound management team that are not getting adequate attention due to presentational failings'. This leads us to conclude that this finding should be explored further and in a greater depth in upcoming studies as the presentation skills might be a factor that deserves more attention from the Czech angel investors.

Finally, we show how the BAs deal with the lack of data for primary screening of the assessed projects. Due to the fact that start-ups cannot usually be evaluated on the basis of output variables such as sales, cash flows, or profits, the real data must be substituted with certain input project attributes (e.g., industry, market, entrepreneur and top management team, product, financial criteria, etc.). Previous studies in the field report similar attitudes (for details, see in particular Festel et al., 2013; Miloud et al., 2012; Stankeviciene & Zinyte, 2011; Sanders & Boivie, 2004) and deserve our attention in the hereafter research.

As discussed earlier in the paper, the generalizability of our findings might be constrained by convenience sampling. An uncertainty in relation to the size and structure of the basic population can skew the accurate picture and our conclusions might therefore represent only a certain approximation to the existing state. In this context, Disman (2011) argues that the conclusions of sociological research are almost always probabilistic. It is extremely difficult to find correct proof of causality in social situations, or even impossible in the vast majority of cases. Another limitation stems from the fact that only Czech BAs were surveyed. Their manner of thinking and decision-making may be largely impacted by a country-specific historical experience and socio-economic context. The emphasis which they place on certain project characteristics may differ from the assessment of projects by foreign investors. Admittedly, some critical factors might not be considered. Non-negligible limitations also result

from the data interpretation methods. These may influence the main conclusions, for example, by prioritizing one category of criteria over another. The motives for such categorization may be subjective or arbitrary.

In spite of these limitations, we believe that the knowledge and application of early stage screening criteria might support BAs to improve the accuracy of their initial assessments and entrepreneurs seeking for finance to be better able to adapt their projects to the expectations of investors. The results will not only influence the investor's decision whether to advance the project to the next stages of evaluation (i.e., due diligence, negotiations, and actual investment; for details see, e.g., Miloud et al., 2012; Tyebjee & Bruno, 1984), but also, for example, whether another partner or other stakeholders are to be invited to implement it.

6. Conclusions

As indicated by a number of prior studies, the activity or the presence of angel investors is positively reflected in the economic development of the country, strengthening its competitiveness, increasing employment, and introducing scientific and technical knowledge into business practice. BAs play an important role in the early stages of entrepreneurial projects, which may have a long run impact on the organising business environment. However, the activity of these investors is often hidden and is not usually (even in other countries) captured by official statistics; thus, this financial industry remains under-researched in most countries.

In this research, we proceeded from the knowledge on BAs published in prior studies with specific emphasis on BAs' decision-making in the early (screening) stage. The literature review was used as a valuable source of information for developing a research concept of data gathering and evaluating on BAs operating mainly in the Czech Republic. As angel investors are mostly not formally organised entities, the procedure consisted in addressing several personally known venture capitalists and applying the 'snowball' sampling to get access to other respondents who may be described as BAs according to generally accepted criteria.

The research findings reveal the key characteristics of entrepreneurial project assessment from the perspective of interviewed BAs and confirm that the evaluation of start-ups (i.e., projects without any cash flow records or projects whose markets have not been established yet) is a specific task compared to business proposals represented by established companies. Based on the theoretical and empirical knowledge and interviewing angel investors, we identified key areas contributing to the rejection or acceptance of business proposals in the early stage. A set of screening evaluation criteria could be identified, indicating that BAs will apply various modifications of well-established assessment approaches. Not surprisingly, investors are mainly focused on the market potential and the management qualities of entrepreneurs. Deductive considerations about the relationship between input (resources or competitive advantages) and output variables (sales, profits, or market share) play a vital role in the process of creating the shareholder value. Modifications of standard procedures therefore find their focus in examining project prerequisites (materials, organisational, personnel, etc.).

We believe that the implications of this study are three-fold. For BAs, prospective investee firms, and public policy. Young and rather inexperienced angel investors can learn which best practices as a routine way of doing investments are adopted by their more skilled peers. The question for entrepreneurs is what requirements should be adopted within business proposals to significantly increase the chance of obtaining finance. Based on the survey results, we also argue that knowledge of project selection processes and criteria is also important for public administration and capital market participants. Fostering a formal and informal venture capital market can only succeed if incentives are introduced that significantly increase the supply of both debt and equity capital. However, such measures cannot be designed and introduced without prior knowledge of the best practices applied by angel investors.

There are several ways how to extend this strand of research on screening criteria. Firstly, it would be desirable to conduct an explanatory study to test our survey results while incorporating more cases/start-ups. Next, further research is needed to determine the early stage evaluation practices across Central and Eastern Europe. A key issue in comparative research is to identify country-specific approaches in terms of potential screening of candidate projects.

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References

Aram, J. D. (1989). Attitudes and behaviors of informal investors toward early-stage investments, technology-based ventures, and coinvestors. *Journal of Business Venturing*, *4*(5), 333–347. https://doi.org/10.1016/0883-9026(89)90005-0

Argerich, J. (2014). *Screening criteria for business angels investments* [Ph.D. thesis]. Universitat de Barcelona.

Belas, J., Gavurova, B., Cepel, M., & Kubak, M. (2020). Evaluation of economic potential of business environment development by comparing sector differences: perspective of SMEs in the Czech Republic and Slovakia. *Oeconomia Copernicana*, *11*(1), 135–159. https://doi.org/10.24136/oc.2020.006

Bradley, W. J., Benjamin, W., Margulis, J. B., & Benjamin, G. A. (2002). *Angel Capital: Enterprise 02.05*. Capstone.

Certhoux, G., & Perrin, A. (2013). Business Angels' practices in the screening stage: A study of knowledge transfer to the entrepreneur. IDEAS Working Paper Series from RePEc. http://search.proquest.com/docview/1698449571/

Civelek, M., Ključnikov, A., Fialova, V., Folvarčná, A., & Stoch, M. (2021). How innovativeness of family-owned SMEs differ depending on their characteristics? *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *16*(2), 413–428. https://doi.org/10.24136/eq.2021.015

Cumming, D., Fleming, G., & Schwienbacher, A. (2006). Legality and venture capital exits. *Journal of Corporate Finance (Amsterdam, Netherlands)*, *12*(2), 214–245. https://doi.org/10.1016/j.jcorpfin.2004.12.004

Dalal, A. (2022). Meta-analysis of determinants of venture capital activity. *Entrepreneurial Business and Economics Review*, *10*(1), 113–128. https://doi.org/10.15678/EBER.2022.100108

Disman, M. (2011). *Jak se vyrábí sociologická znalost (How sociological knowledge is produced)*. Karolinum Press.

Durda, L., & Ključnikov, A. (2019). Social networks in entrepreneurial startups development. *Economics & Sociology*, *12*(3), 192–208. https://doi.org/10.14254/2071-789X.2019/12-3/13

Dvorský, J., Petráková, Z., & Fialová, V. (2020). Perception of business risks by entrepreneurs according to experience with the business failure. *International Journal of Entrepreneurial Knowledge*, *8*(1), 76–88. https://doi.org/10.37335/ijek.v8i1.104

Feeney, L., Haines, G. H., & Riding, A. L. (1999). Private investors' investment criteria: Insights from qualitative data. *Venture Capital*, *1*(2), 121–145. https://doi.org/10.1080/136910699295938

Festel, G., Wuermseher, M., & Cattaneo, G. (2013). Valuation of early stage high-tech start-up companies. *International Journal of Business*, *18*(3), 216.

Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2008). Venture capitalists' evaluations of start–up teams: Trade–offs, knock–out criteria, and the impact of VC experience. *Entrepreneurship Theory and Practice*, *32*(3), 459–483. https://doi.org/10.1111/j.1540-6520.2008.00236.x

Ge, D., Mahoney, J. M., & Mahoney, J. T. (2005). New venture valuation by venture capitalists: An integrative approach. Working Papers, University of Illinois at Urbana-Champaign, College of Business.

Gompers, P., & Lerner, J. (1999). What drives venture capital fundraising? NBER Working Paper Series, *6906*. https://doi.org/10.3386/w6906

Goodman, L. A. (1961). Snowball sampling. *The Annals of Mathematical Statistics*, *32*(1), 148–170. https://doi.org/10.1214/aoms/1177705148

Gorączkowska, J. (2020). Enterprise innovation in technology incubators and university business incubators in the context of Polish industry. *Oeconomia Copernicana*, *11*(4), 799–817. https://doi.org/10.24136/oc.2020.032

Grilli, L. (2019). There must be an angel? Local financial markets, business angels and the financing of innovative start-ups. *Regional Studies*, *53*(5), 620–629. https://doi.org/10.1080/00343404.2018.1479524

Groh, A. P., Von Liechtenstein, H., & Lieser, K. (2010). The European Venture Capital and Private Equity country attractiveness indices. *Journal of Corporate Finance (Amsterdam, Netherlands)*, *16*(2), 205–224. https://doi.org/10.1016/j.jcorpfin.2009.09.003

Haar, N. E., Starr, J., & Macmillan, I. C. (1988). Informal risk capital investors: Investment patterns on the East Coast of the U.S.A. *Journal of Business Venturing*, *3*(1), 11–29. https://doi.org/10.1016/0883-9026(88)90027-4

Hendl, J. (2015). *Přehled statistických metod: analýza a metaanalýza dat (An overview of statistical methods: Data analysis and metaanalysis)*. Portál.

Johnson, W., & Sohl, J. (2012). Angels and venture capitalists in the initial public offering market. *Venture Capital*, *14*(1), 27–42. https://doi.org/10.1080/13691066.2012.660743

Karsai, J. (2018). Government venture capital in Central and Eastern Europe. *Venture Capital*, *20*(1), 73–102. https://doi.org/10.1080/13691066.2018.1411040

Ključnikov, A., Civelek, M., Fialova, V., & Folvarčná, A. (2021). Organizational, local, and global innovativeness of family-owned SMEs depending on firm-individual level characteristics: Evidence from the Czech Republic. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *16*(1), 169–184. https://doi.org/10.24136/eq.2021.006.

Kobylińska, U., & Lavios, J. J. (2020). Development of research on the university entrepreneurship ecosystem: trends and areas of interest of researchers based on a systematic review of literature. *Oeconomia Copernicana*, *11*(1), 117–133. https://doi.org/10.24136/oc.2020.005

Kotlebova, J., Arendas, P., & Chovancova, B. (2020). Government expenditures in the support of technological innovations and impact on stock market and real economy: The empirical evidence from the US and Germany. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *15*(4), 717–734. https://doi.org/10.24136/eq.2020.031

Krippendorff, K. (2013). *Content analysis: An introduction to its methodology*. SAGE.

Landström, H. (1998). Informal investors as entrepreneurs. *Technovation*, *18*(5), 363–365. https://doi.org/10.1016/S0166-4972(98)80029-1

Łapińska, J., Meluzínová, J., & Uhman, J. (2019). Country-specific determinants of intra-industry trade in pharmaceuticals: The case of Poland and its European Union Partners. *E + M Ekonomie a Management*, *22*(2), 188–202. https://doi.org/10.15240/tul/001/2019-2-013

Le Trinh, T. (2019). Factors affecting startup performance of small and medium-sized enterprises in Danang City. *Entrepreneurial Business and Economics Review*, *7*(3), 187–203. https://doi.org/10.15678/EBER.2019.070310

Lumme, A., Mason, C., & Suomi, M. (1996). The returns from informal venture capital investments: An exploratory study. *Journal of Entrepreneurial and Small Business Finance*, *5*(2), 139–158. http://search.proquest.com/docview/1704127339/

Månsson, N., & Landström, H. (2006). Business angels in a changing economy: The case of Sweden. *Venture Capital*, *8*(4), 281–301. https://doi.org/10.1080/13691060600836275

Markauskas, M., & Baliute, A. (2021). Technological progress spillover effect in Lithuanian manufacturing industry. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *16*(4), 783–806. https://doi.org/10.24136/eq.2021.029

Mason, C. M. (2009). Public policy support for the informal venture capital market in Europe: A critical review. *International Small Business Journal: Researching Entrepreneurship*, *27*(5), 536–556. https://doi.org/10.1177/0266242609338754

Mason, C., Botelho, T., & Harrison, R. (2019). The changing nature of angel investing: Some research implications. *Venture Capital*, *21*(2-3), 177–194. https://doi.org/10.1080/13691066.2019.1612921

Mason, C. M., & Harrison, R. T. (2004). Improving access to early stage venture capital in regional economies: A new approach to investment readiness. *Local Economy: The Journal of the Local Economy Policy Unit*, *19*(2), 159–173. https://doi.org/10.1080/0269094042000203090

Mason, C. M., & Harrison, R. T. (2008). Measuring business angel investment activity in the United Kingdom: A review of potential data sources. *Venture Capital*, *10*(4), 309–330. https://doi.org/10.1080/13691060802380098

Maula, M., Autio, E., & Arenius, P. (2005). What drives micro-angel investments? *Small Business Economics*, *25*(5), 459–475. https://doi.org/10.1007/s11187-004-2278-4

Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business angel early stage decision making. *Journal of Business Venturing*, *26*(2), 212–225. https://doi.org/10.1016/j.jbusvent.2009.09.002

May, J., & Liu, M. M. (Ed.). (2015). *Angels without borders: Trends and policies shaping angel investment worldwide*. World Scientific Publishing. https://doi.org/10.1142/9881

Meluzín, T., Zinecker, M., Balcerzak, A. P., & Pietrzak, M. B. (2018). Why do companies stay private? Determinants for IPO candidates to consider in Poland and the Czech Republic. *Eastern European Economics*, *56*(6), 471–503. https://doi.org/10.1080/00128775.2018.1496795

Meluzín, T., Zinecker, M., Balcerzak, A. P., Pietrzak, M. B., & Doubravský, K. (2021). Institutional settings and their impact on the IPO activity: An exploratory study based on

qualitative modelling. *Acta Polytechnica Hungarica*, *18*(2), 215–235. https://doi.org/10.12700/APH.18.2.2021.2.12

Miloud, T., Aspelund, A., & Cabrol, M. (2012). Startup valuation by venture capitalists: an empirical study. *Venture Capital (London)*, *14*(2-3), 151–174. https://doi.org/10.1080/13691066.2012.667907

Muzyka, D., Birley, S., & Leleux, B. (1996). Trade-offs in the investment decisions of European venture capitalists. *Journal of Business Venturing*, *11*(4), 273–287. https://doi.org/10.1016/0883-9026(95)00126-3

Nölke, A., & Vliegenthart, A. (2009). Enlarging the varieties of capitalism: The emergence of dependent market economies in East Central Europe. *World Politics*, *61*(4), 670–702. https://doi.org/10.1017/S0043887109990098

Nowak, P. (2021). Cooperation of enterprises in innovative activities on the example of Polish regions. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *16*(4), 839–857. https://doi.org/10.24136/eq.2021.031

OECD. (2011). *Financing high-growth firms: The role of angel investors*. OECD Publishing. https://doi.org/10.1787/9789264118782-en.

Ondra, P., Tuček, D., & Rajnoha, R. (2018). The empirical quality management practices study of industrial companies in the Czech Republic. *Polish Journal of Management Studies*, *17*(2), 180–196. https://doi.org/10.17512/pjms.2018.17.2.16

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. *Forum: Qualitative Social Research*, *7*(4) https://doi.org/10.17169/fqs-7.4.175

Parga-Montoya, N., & Cuevas-Vargas, H. (2019). Assessing the entrepreneurial orientation by opportunity/necessity dichotomy: An institutional perspective. *Polish Journal of Management Studies*, *19*(1), 298–308. https://doi.org/10.17512/pjms.2019.19.1.23

Potjanajaruwit, P., & Girdwichai, L. (2019). Creative innovation of startup businesses in Thailand 4.0 era. *Journal of International Studies*, *12*(3), 222–231. https://doi.org/10.14254/2071-8330.2019/12-3/18

Prokop, V., Kotkova Striteska, M., & Stejskal, J. (2021). Fostering Czech firms' innovation performance through efficient cooperation. *Oeconomia Copernicana*, *12*(3), 671–700. https://doi.org/10.24136/oc.2021.022

Ramadani, V. (2012). The importance of angel investors in financing the growth of small and medium sized enterprises. *International Journal of Academic Research in Business and Social Sciences*, *2*(7), 306–322.

Reitan, B., & Sörheim, R. (2000). The informal venture capital market in Norway? Investor characteristics, behaviour and investment preferences. *Venture Capital*, *2*(2), 129–141. https://doi.org/10.1080/136910600295747

Riding, A. L. (2008). Business angels and love money investors: segments of the informal market for risk capital. *Venture Capital (London)*, *10*(4), 355–369. https://doi.org/10.1080/13691060802351222

Samoliu, N., Bilan, Y., & Mishchuk, H. (2021). Vocational training costs and economic benefits: Exploring the interactions. *Journal of Business Economics and Management*, *22*(6), 1476–1491. https://doi.org/10.3846/jbem.2021.15571

Sanders, W. G., & Boivie, S. (2004). Sorting things out: Valuation of new firms in uncertain markets. *Strategic Management Journal*, *25*(2), 167–186. https://doi.org/10.1002/smj.370

Silva, J. (2004). Venture capitalists' decision-making in small equity markets: a case study using participant observation. *Venture Capital (London)*, *6*(2–3), 125–145. https://doi.org/10.1080/13691060410001675974

Skalicka, M., Zinecker, M., Balcerzak, A. P., & Meluzín, T. (2019). Why do companies go public? Evidence from the Prague stock exchange. *Entrepreneurial Business and Economics Review*, *7*(1), 181–199. https://doi.org/10.15678/EBER.2019.070110

Stankeviciene, J., & Zinyte, S. (2011). Valuation model of new start-up companies: Lithuanian case/Naujai isteigtu imoniu vertinimo metodai. *Business: Theory and Practice*, *12*(4), 379. https://doi.org/10.3846/btp.2011.39.

Stedler, H., & Peters, H. H. (2003). Business angels in Germany: An empirical study. *Venture Capital*, *5*(3), 269–276. https://doi.org/10.1080/1369106032000126596

Stuart, T. E., Hoang, H., & Hybels, R. C. (1999). Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, *44*(2), 315–349. https://doi.org/10.2307/2666998

Sudek, R. (2004). Angel Investment Criteria. *Journal of Small Business Strategy*, *17*(2), 89–103. http://search.proquest.com/docview/201470390/

Sullivan, M. K., & Miller, A. (1996). Segmenting the informal venture capital market: Economic, hedonistic, and altruistic investors. *Journal of Business Research*, *36*(1), 25–35. https://doi.org/10.1016/0148-2963(95)00160-3

Tyebjee, T. T., & Bruno, A. V. (1984). A model of venture capitalist investment activity. *Management Science*, *30*(9), 1051–1066. https://doi.org/10.1287/mnsc.30.9.1051

Van Osnabrugge, M., & Robinson, R. J. (2001). The influence of a venture capitalist's source of funds. *Venture Capital (London)*, *3*(1), 25–39. https://doi.org/10.1080/13691060117288

Virglerova, Z., Conte, F., Amoah, J., & Massaro, M. R. (2020). The perception of legal risk and its impact on the business of SMEs. *International Journal of Entrepreneurial Knowledge*, *8*(2), 1–13. https://doi.org/10.37335/ijek.v8i2.115

Waters, J. (2015). Snowball sampling: a cautionary tale involving a study of older drug users. *International Journal of Social Research Methodology*, *18*(4), 367–380. https://doi.org/10.1080/13645579.2014.953316

Wetzel, W. (1983). Angels and informal risk capital. *Sloan Management Review (Pre-1986)*, *24*(4), 23–24. http://search.proquest.com/docview/206801786/

White, B. A., & Dumay, J. (2017). Business angels: A research review and new agenda. *Venture Capital*, *19*(3), 183–216. https://doi.org/10.1080/13691066.2017.1290889

Wong, P. K., & Ho, Y. P. (2007). Characteristics and determinants of informal investment in Singapore. *Venture Capital (London)*, *9*(1), 43–70. https://doi.org/10.1080/13691060600996772

World Bank Group. (2018). *Stimulating business angels in the Czech Republic*. World Bank.

Zinecker, M., & Bolf, D. (2015). Venture capitalists' investment selection criteria in CEE countries and Russia. *Business: Theory and Practice*, *16*(1), 94–103. https://doi.org/10.3846/btp.2015.441

Zinecker, M., Skalická, M., Balcerzak, A. P., & Pietrzak, M. (2021a). Business angels in the Czech Republic: Characteristics and a classification with policy implications. *Economic Research-Ekonomska Istraživanja*, 1–26. https://doi.org/10.1080/1331677X.2021.1890179

Zinecker, M., Skalická, M., Balcerzak, A. P., & Pietrzak, M. (2021b). Identifying the impact of external environment on business angel activity. *Economic Research-Ekonomska Istraživanja*, 1–23. https://doi.org/10.1080/1331677X.2021.1888140