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# Venture Capitalists' Investment Criteria in Poland: Entrepreneurial Opportunities, Entrepreneurs, and Founding Teams

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**Abstract:** The aim of this article is to explore the decision-making policies by Polish Venture Capital (VC) firms, with special focus on the perception of entrepreneurs. This paper presents the results of a conjoint analysis and assessment of the importance of select characteristics among entrepreneurs and the qualities of a team of founders comprising managers of VC firms. The data were collected via face-to-face interviews with 26 Venture Capitalists. In the conjoint experiment, six attributes were presented, among which three represented characteristics of the entrepreneur (his/her passion and experience) and the management team (experience and completeness) alongside three characteristics of the opportunity (readiness of the product/service, growth rate of the market, and innovativeness of the whole project). VC managers ranked the importance of eight characteristics of the entrepreneurs related to their decisions and assessed the functional composition of the team of founders. The results of the experiment show that venture capitalists (VCs) most strongly appreciate the readiness of the product and entrepreneur's passion. However, their preferences varied across the sample. The results of the ranking also show that the VC managers highly value the honesty of the entrepreneur. VCs typically prefer a team of founders, rather than a single-person project, preferably consisting of persons at least familiar with the technology and the market. This study contributes significantly to the state-of-the-art, as research on VC investment policy (investment criteria) is relatively rare in Central and Eastern Europe, where the VC industry is starting to flourish.

**Keywords:** Venture Capital; entrepreneurship; entrepreneurs; entrepreneurial teams; investment criteria

## 1. Introduction

This paper is dedicated to decision-making policy by Venture Capital (VC) firms in Poland. This topic addresses the interception of entrepreneurship and finance research and is part of a new, rapidly growing stream of studies, referred to as entrepreneurial finance (Denis 2004; Cumming and Johan 2017). To build their firms, entrepreneurs must provide the necessary resources, as well as funding. Their dependence on external financing has been known for centuries and has been theoretically underscored since the inception of modern economics (Cantillon 1755; Smith 1776). VC firms emerged in the USA as a modern type of intermediary that specializes in the provision of funding to entrepreneurial ventures (Gompers and Lerner 2006). Recently, this model of financing entrepreneurship has started to expand in Central and Eastern European Countries (CEEC), as well as in Poland. Studies on VC decision-making have been carried out in the USA since the 1970s (Wells 1974) and then also commenced in Western Europe, together with implementation of the VC concept in that area (Muzyka et al. 1996; Leleux and Surlemont 2003). Venture capitalists' (VCs) investment policy, decision-making, and investment criteria have been thoroughly investigated on both sites of

the Atlantic (MacMillan et al. 1985; Croce et al. 2013) and in Asia (Cumming et al. 2008). However, this topic remains relatively unexplored in CEEC, mostly due to the delay in the development of the VC industry in this region. Although the first VC firms were active in Poland as early as in the 1990s (Węcławski 1997; Bliss 1999), their expansion accelerated in the second decade of the 21st century. Studies conducted all over the world show that the details of the investment policy and investment criteria applied by VCs to assess prospective projects vary across countries (Tyebjee and Bruno 1984; Muzyka et al. 1996; Silva 2004; Mishra 2004; Eisele et al. 2004). Partially, these differences may be attributed to local particularities (economic, legal (law enforcement, obedience to the rule of law, and details of commercial law), social, cultural, and more). Therefore, the inconsistency of the conclusions from international studies, particularity in Poland as an economic, legal, and cultural environment, offers a research opportunity. The few studies on VCs in Poland not devoted specifically to investment criteria provide evidence that the performance of these institutions is strongly influenced by their local context (Węcławski 1997; Bliss 1999; Klonowski 2007). This creates a research gap. Thus, the results from this study may extend the existing literature by providing insight into VCs' investment policy in the CEEC setting.

Previous studies showed that decision-making constitutes a very important part of the whole investment process (Tyebjee and Bruno 1984; Fried and Hisrich 1994; Klonowski 2007). It has been observed that the vast majority of projects that seek financing are rejected in the preliminary stages of the decision-making process (screening), and among the few that manage to qualify during the next stages (evaluation and negotiations), only a handful eventually get funding (Franke et al. 2008). The results of previous studies show that a complete list of all possible criteria considered by VCs would be very long, but this group can be reduced into only a few general factors related to the management of the company (also entrepreneurs), products/services, the market, financial factors, and issues specific to the investor (MacMillan et al. 1985; Hall and Hofer 1993). This paper develops upon the heuristic offered by the previous studies (the metaphor of the 'jockey' and the 'horse'; Kaplan et al. 2009), which classifies all investment criteria into just two major groups: (1) those related to the entrepreneur and the managerial team and (2) those related to the opportunity (here: products/services, the market, and overall innovativeness). This division is in line with the entrepreneurship research paradigm, which clearly highlights the crucial role of the founder who explores a market opportunity (Shane and Venkataraman 2000).

The empirical part of the paper is aimed at exploring the decision-making policy by Polish VC managers and answering three research questions in the context of the Polish private capital market:

(1) What is the relative importance of selected investment criteria perceived by VCs?
(2) What is the relative importance of the identified entrepreneur's characteristics for VCs?
(3) How do VC managers perceive teams of entrepreneurs?

To answer these questions, the study was conducted using a sample of 26 VC managers in the form of a conjoint quasi-experiment design supported by a questionnaire and Individual In-Depth Interviews (IDIs) carried out by the author in the VCs' offices. The first research question was addressed by developing a conjoint quasi-experiment in which the respondents ordered eight hypothetical projects (representing six investment criteria) according to their attractiveness. To answer the second question, the respondents were asked to order eight characteristics of the entrepreneurs according to their importance in VC decision-making. The third question was addressed via an assessment of the advantages of the teams of founders over the investment propositions offered by single entrepreneurs. The study was conducted over the years 2015–2017.

This paper is organized as follows. In Section 2, the current state of knowledge on VC investing and investment criteria is presented. Based on the rich literature developed mostly in the USA and Western Europe (but also in Asia), nine previous international studies are investigated to specify the relevant investment criteria. Special attention is paid to the characteristics of entrepreneurs and socio-cultural backgrounds. In this section, a brief overview of the research carried out so far in Poland

is also offered. This section also provides theoretical arguments for the importance of entrepreneurs in VC decision-making policy, together with a brief overview of contracting policy. Section 3 presents the method used for this study with a detailed focus on the design of the conjoint experiment. This section also presents the characteristics of the sample and details on data collection. Section 4 contains the results of the study, including the outcome of the conjoint experiment, a ranking of the eight characteristics of the entrepreneurs, and the VCs' opinion on teams, with special attention paid to their functional composition. Section 5 provides a discussion of the results, organized according to the three research questions. Finally, the conclusion section offers practical recommendations for entrepreneurs and VC managers, as well as for policy makers and educators. Prospective directions for future studies and the limitations of this research are also presented in this section.

## 2. Literature Review

### 2.1. VC Investments

The VC industry has grown considerably in the USA since the end of the second world war (Gompers and Lerner 2006); subsequently, this financing model was applied in other countries. In Europe, VCs started their investments in the eighties—initially in the UK and then also in continental countries (Bruton et al. 2005). At present, VCs are important players in the capital markets of many developed European countries. Various classifications are used to categorize VCs. However, the most important one refers to their specialization in a given stage of the lifecycle of the firm. De Clercq and Sapienza in the USA (De Clercq and Sapienza 2005) distinguished between six stages: (1) seed; (2) start-up; (3) early stage; (4) expansion; (5) buy-in/buy-out; and (6) turnaround. Likewise, in Europe, Leleux and Surlemont (2003) classified these stages as (1) seed; (2) start-up; (3) expansion; (4) replacement; and (5) buyouts. VCs are intermediaries as they invest capital provided by investors. Therefore, their main objective is to bring returns on the capital. Outside of the USA, the VC industry is often supported by state funding. In such cases the VCs' objectives may also encompass enhancing innovativeness and supporting entrepreneurship (Leleux and Surlemont 2003). In general, the European VC market is believed to be more heterogeneous in terms of the variety of VCs operating (Croce et al. 2013). Corporate Venture Capital funds (CVCs) are funded not by financial or individual investors, as is the case with typical VCs, but instead by enterprises, usually large ones. CVCs' investment objectives are shifted toward utilizing their assets (their own competencies, staff, experience, know-how, and market) to support portfolio companies (Dushnitsky and Lenox 2006). Portfolio companies can more easily develop innovative projects as they are not burdened by bureaucratic organisational culture.

The VC industry is believed to play an important role in supporting innovation and entrepreneurship (Gompers and Lerner 2006). VCs took part in the technological revolution in the USA and to a lesser extent in Europe at the end of the 20th century (Hege et al. 2003; Bottazzi and Rin 2004). The performance of the VC industry in a given country depends on the particularities of the local context. VC firms seem to perform better in countries with common law than in civil law environments (like in Poland) (Leleux and Surlemont 2003), partially due to the better protection of minority shareholders in common law. VCs seem also to perform differently in various cultural and social settings (e.g., (Li and Zahra 2012)).

### 2.2. VC Industry in Poland

In CEEC, VCs commenced their activities with considerable delay compared to Western countries. For the most part, this delay can be attributed to a prolonged transformation that started in the early 1990s. Poland is a good example of this process. The first decade of the Polish transformation, starting in the year 1989, was marked by a restoration of the free market framework, reshaping the rule of law and social changes. By this time, the public market was restored, with the central role played by the Warsaw Stock Exchange. This exchange was established in the year 1817, closed

during the second world war, remained close in the era of socialism, and finally reopened in the year 1991. Initially, this exchange served mostly as a mechanism for enabling the privatization of state-owned companies. Investment funds of foreign origins that operated in the private market were also interested in investing in some of these privatized companies. Poland attempted mass privatization based on the private market framework (15 National Investment Funds, created in the year 1995) (Błaszczyk et al. 2001). First, VC firms in Poland were created as early as the year 1990, with subsidies from public funding that were provided by both domestic and international bodies (e.g., Polish-American Entrepreneurship-Fund, 1990; Danish Investment Fund for Central and Eastern Europe; Polish Private Equity Fund, 1992). The growth of the VC industry in Poland accelerated in the second decade of the 21 century. According to a recent estimate, there were 130 funds in the year 2019 (Krzysztofiak-Szopa and Wisłowska 2019). It should be underlined that the development of the VC industry was recently strongly supported by the state, with a substantial amount of capital provided by the Polish Development Fund (Krzysztofiak-Szopa and Wisłowska 2019). Noticeably, the earlier inception of the VC industry in Western European countries was also supported by public money. The present growth of the VC industry in Poland is enabled not only by the active role played by state agencies but also by improvements in the quality of legal institutions; fast economic growth; the evolution of the economy from a labour intensive model to an innovation-based one; and the country's relatively large public capital market, with primary (WSE) and alternative (NewConnect) markets serving as potential exit routs for the funds. The important role of a public market in the development of a private market has been highlighted in the literature (Black and Gilson 1998; Jeng and Wells 2000).

### 2.3. VC Investment Process

The VC investment process has multiple stages. In one of the first conceptualisations, Fried and Hisrich proposed six characteristic stages of the VC decision process: (1) origination; (2) VCs' firm-specific screening; (3) generic screening; (4) first-phase evaluation; (5) second-phase evaluation; (6) closing. It should be underscored that in more general models of the VC investment process, decision-making usually consumes several of the initial stages of the whole process. Thus, in the five-stage model by Tyebjee and Bruno (1984), three stages are directly linked to decision-making (origination, screening, and evaluation), while the fourth is linked indirectly (structuring) with only one stage left for the post-investment period (post-investment activities). In the follow-up elaborations, the exit stage is also usually considered, as it enables one to close the whole investment process. In the screening stage, investment propositions are briefly assessed; upon the results of this examination, some of them may qualify for the evaluation stage. The screening stage is short, superficial, and aimed at quickly determining unpromising propositions. Typically, the majority of projects are rejected at this stage. More prospective projects are qualified at the evaluation stage, which is more systematic, encompasses a larger number of more detailed criteria, and also consults external entities. Hence, this assessment is costly and time consuming. Klonowski (2007) revised these models to adjust them to the particular context of CEEC (also Poland). Klonowski's model defines nine stages, and most of the newly proposed ones relate to the decision-making process (in total, seven stages). The great complexity of the investment process in Poland was also observed earlier by Bliss (1999). Clearly, decision-making constitutes a sensitive, or even decisive, element of the VC business model. The decision-making process is simplified in most studies. However, more detailed studies show that VCs vary considerably in terms of the strategies used for evaluating their investment propositions. In this vein, Smart (1999) proposed seven types of strategies used by VC managers to assess entrepreneurs, whereas Petty and Gruber (2011) presented evidence that some elements of the procedure are iterative, rather than linear. In the literature, a long-standing dispute has been carried out over the importance of the two most important VCs' roles as investors. This dispute originated as an attempt to establish the relative significance of a VC firm as a decision-maker or a nurturer (metaphorically expressed as "scouting" and "coaching" (Hellman and Puri 2002; Dimov and Shepherd 2005; Colombo and Grilli 2010; Jackson et al. 2012; Croce et al. 2013).

Although this debate is not yet resolved, its tone clearly reflects the reality: decision-making (selection) is extremely important, if not crucial, for VCs' performance.

### 2.4. VCs' Investment Criteria

Research on investment criteria has been carried out for over 40 years (Wells 1974), but it is still not clear what truly matters to VC managers and how they act in the decision-making process. This process of evaluating investment criteria is, therefore, very obscure. Moreover, the importance of the criteria in particular cases is conditioned by several factors, and the inconsistent terminology used by authors inhibits an analysis.

#### 2.4.1. Investment Criteria

A list of all possible detailed investment criteria set out in the literature would be very long. In some research, this list can have as many as nearly 100 items (e.g., 95 in (Guild and Bachher 1996)). Therefore, investment criteria are usually classified into several subcategories, but such groupings proposed by the researchers differ. For this study, a set of previous papers was chosen to present the current state of knowledge in the literature. This set comprises two classical American studies by Tyebjee and Bruno (1984) and MacMillan et al. (1985), followed by a ground-breaking study that used conjoint analysis for the first time (Riquelme and Rickards 1992); qualitative studies by Hall and Hofer (1993) (verbal protocols) and by Petty and Gruber (2011) (analysis of the VC firm's database); one Indian study by Mishra (2004) (which appears to be inspired by (MacMillan et al. 1985)); and the first influential pan-European study by Muzyka et al. (1996) (encompassing seven countries based on conjoint analysis). The studies by Franke et al. (2008) (Germany, Austria, Italy) and Streletzki and Schulte (2013) (Germany) reflect the recent shift of European research towards interest in the importance of start-ups for VC decision-making.

Typically, these major categories encompass factors related to (1) the characteristics of the entrepreneurs and managers; (2) the product; (3) the market; (4) financials; and (5) specific requirements of the VCs (e.g., (Tyebjee and Bruno 1984; MacMillan et al. 1985; Riquelme and Rickards 1992; Muzyka et al. 1996; Petty and Gruber 2011; Streletzki and Schulte 2013)). In an early attempt, Tyebjee and Bruno (1984) tried to model investment criteria using the framework of the Capital Asset Pricing Model (Sharpe 1964; Lintner 1965). In the following papers, such systematic modelling was abandoned, usually in favour of the general categorization of factors and items representing investment criteria.

Table 1 presents the general groups of criteria defined in the consecutive studies. This compilation hides the specific names used in this research to address the relevant factors. The human capital (entrepreneurs/managerial team) factor is described as "managerial skills" (Tyebjee and Bruno 1984); "the personality of the entrepreneur" and "the entrepreneur's experience" (MacMillan et al. 1985); "the managerial team" (MacMillan et al. 1985); "management risk" and "leadership risk" (Riquelme and Rickards 1992); "managerial team competences" (Muzyka et al. 1996); and "the characteristics of the venture management team" (Mishra 2004). Details on the importance of the entrepreneurs' characteristics are presented below (both in Table 2 and in the following discussion).

**Table 1.** Major Venture Capitalists' (VCs')decision criteria in selected international studies.

| VCs' Decision Criteria | (Tyebjee and Bruno 1984) | (MacMillan et al. 1985) | (Riquelme and Rickards 1992) | (Muzyka et al. 1996) | (Hall and Hofer 1993) | (Mishra 2004) | (Franke et al. 2008) | (Petty and Gruber 2011) | (Streletzki and Schulte 2013) |
|---|---|---|---|---|---|---|---|---|---|
| Entrepreneurs/managerial team | • | ••• | •• | •• | • | ••• | • | • | • |
| Products/services | • | • | • | • | • | • | • | • | • |
| Market | • | • | • | • | • | • | • | • | • |
| Financials | • | • | •• | •• | • | • | • | • | • |
| Particular factors related to the fund | | | | • | • | | | | |
| Other | • | | | | •• | | | | • |

Source: own study. Each symbol '•' represents one usage of the item of a given type in the research. Thus, e.g., '•••' in MacMillan et al. (1985) means that in the study three items were used to capture 'entrepreneurs/ managerial team'.

**Table 2.** Characteristics of entrepreneurs and management as VCs' decision criteria in selected international studies.

| Characteristics of Entrepreneurs | (Tyebjee and Bruno 1984) | (MacMillan et al. 1985) | (Riquelme and Rickards 1992) | (Muzyka et al. 1996) | (Hall and Hofer 1993) | (Mishra 2004) | (Franke et al. 2008) | (Petty and Gruber 2011) | (Streletzki and Schulte 2013) |
|---|---|---|---|---|---|---|---|---|---|
| Personality | | | | | | | | | |
| Perseverance | | • | | | | • | | | |
| Managing risk | | • | | | | • | | | |
| Presenting venture | | • | | | | | | • | |
| Attends to detail | | • | | | | • | | | |
| Personality compatible with venture capital (VC) manager | | • | | | • | • | | | |
| Other personality | | | | | | •••• | | | |
| **Experience** | | | | | | | | | |
| General experience | | | | • | • | | | • | ••• |
| Industry experience | | •• | | • | | ••• | • | | |
| Management experience | | | | | | | | | •••• |
| Entrepreneurial experience | | | | | • | | | | • |
| **Skills** | | | | | | | | | |
| Management skills | • | | • | | | • | • | | |
| Financial skills | • | | | • | | • | | | |
| Marketing skills | • | | | • | | • | | | |

**Table 2.** *Cont.*

| Characteristics of Entrepreneurs | (Tyebjee and Bruno 1984) | (MacMillan et al. 1985) | (Riquelme and Rickards 1992) | (Muzyka et al. 1996) | (Hall and Hofer 1993) | (Mishra 2004) | (Franke et al. 2008) | (Petty and Gruber 2011) | (Streletzki and Schulte 2013) |
|---|---|---|---|---|---|---|---|---|---|
| Production skills | • | | • | • | | • | | | |
| Leadership skills | | • | | • | | • | • | • | |
| Organizational skills | | | | • | | | | | |
| **Education** | | | | | | | | | |
| Engineering | | | | | | | • | | • |
| Management | | | | | | | • | | • |
| University degree | | | | | | | • | | |
| Finance | | | | | | | | | • |
| Marketing/sales | | | | | | | | | • |
| **Trust** | | | | | | | | | |
| Trustworthiness | | • | | | | •• | | | |
| Reputation | • | • | | | | • | | • | |
| **Other** | | | | | | | | | |
| Age | | | | | | | • | | |
| Balanced team | | | | | | • | | | |

Source: own study. Each symbol '•' represents one usage of the item of a given type in the research. Thus, e.g., '••••' in Mishra (2004) means that in the study four items were used to capture 'personality'.

General factors addressing the features of a product considered differentiation (Tyebjee and Bruno 1984), "the risk of implementation" (Riquelme and Rickards 1992), and the strategy (Hall and Hofer 1993). The two most important characteristics of a product/service relate to its readiness (also its existence) or time left to completion, as well as its tested acceptance by the market. Less important features include its technological nature, innovativeness, legal protection, and ability to address the existing needs of customers.

General factors related to the market encompass attractiveness (Tyebjee and Bruno 1984) and competition risk (Riquelme and Rickards 1992). The two most important features of the market that were highlighted in this research are the market's size and growth rate (Tyebjee and Bruno 1984; MacMillan et al. 1985). Less important characteristics are the potential of the firm to enter new markets or create new markets and the cyclicality of the market.

The general financial factors presented in Table 1 include exit potential (Tyebjee and Bruno 1984), investment risk (Riquelme and Rickards 1992), time to break even, time to payback, and expected rate of return (Muzyka et al. 1996). The two most important financial factors are the exit potential and expected profitability of the firm and the investment. Less important items include the necessity of the next investment rounds, finding co-investors, sharing in equity, leverage, valuation, the break event point, and yielding dividends. VCs face difficulties when applying financial criteria to assess the investment proposition. The earlier the stage of the project's development is, the more difficult it will be to assess its future profitability and cash flow. Moreover, Hall and Hofer (1993, p. 39) speculated that the relationship between risk and award might be expressed by other (non-financial) factors.

General factors related to VCs themselves include adherence of the investment proposition to the existing portfolio of the fund, the costs of monitoring, and the potential of the investor to add value to the project. The remaining factors presented in Table 1 (as 'other') take into account "threats to the environment" (Tyebjee and Bruno 1984), "the characteristics of the opportunity" (Hall and Hofer 1993), "the nature of the business" (Hall and Hofer 1993), and "the firm" (Streletzki and Schulte 2013).

Some theoretical attempts reduced the large number of VCs' investment criteria into just two basic dimensions: human capital (entrepreneurs, managers, and teams) and the others (opportunity, firm, etc.). Accordingly, the metaphor of a 'jockey' and a 'horse' is used to simplify VCs' decision problems (Kaplan et al. 2009). Despite anecdotal opinions on the superiority of human related factors for VC decision-making (e.g., (Zacharakis and Meyer 1998)), the debate on the supremacy of a 'jockey' or a 'horse' seems to remain unresolved.

The classification presented in Table 2 is somewhat subjective, as the authors have used various words to describe the researched phenomena. Therefore, exact quotations from selected papers are used below to address the relevant details.

#### 2.4.2. Personality

Personality is a complex phenomenon. In the VC decision-making studies, personality was addressed by several traits and behaviours that can reflect the entrepreneur's fit with the challenge of the venture creation process. Entrepreneurial endeavours require a substantial amount of endurance and effort. In research by MacMillan et al. (1985), this factor was expressed as "capable of sustained intense effort". As elaborated in Section 2.5, the relationship between entrepreneurs and VCs can be modelled with the framework of agency theory, which indicates that VCs could bear the consequences of risky decisions made by the founders. This concern was addressed in the research as the "ability to evaluate and react to risk" (MacMillan et al. 1985; Mishra 2004). VCs likely obtain a general impression of the entrepreneur's personality on the basis of his/her presentations and meetings with him/her, which was expressed in the studies as "articulate in discussing venture" (Mishra 2004) and "lack of confidence" (Petty and Gruber 2011). Once the VC deal has been made, further cooperation of the VC firm with the entrepreneur is necessary. Therefore, a fit between the personalities of the VC manager and the entrepreneur might be desired. This concern was addressed in some studies as "management must be willing to work with venture partners" (Hall and Hofer 1993) and "compatible personality"

(Mishra 2004). Surprisingly, passion, which was clearly highlighted in studies devoted to business angel decision-making (e.g., Mitteness et al. 2012), seems to be rarely addressed directly in the VC context. In a comparative study by Hsu et al. (2014), VCs were shown to place less emphasis on entrepreneur's passion than angels do. In a recent paper, Warnick et al. (2018) proposed to divide passion into two detailed subcategories: passion for entrepreneurship and passion for the product. More detailed personality traits were addressed by Mishra (2004), who was interested in "long term vision", "the urge to grow", "commercial orientation", and "being amenable to suggestion and criticism". The personality of the entrepreneur was usually addressed in studies without a more careful psychological reflection, mostly based on casual language.

#### 2.4.3. Experience

Entrepreneurs' experience can be classified into three major categories: (1) experience related to the industry in which the venture operates (industry experience); (2) entrepreneurial experience, and (3) managerial experience. Industry experience was described as "thoroughly familiar with the market targeted by the venture" and "has a track record relevant to the venture" (MacMillan et al. 1985), as well as "critical competence vis-à-vis venture" (Mishra 2004). Managerial experience (or a lack thereof) was addressed as "no/incomplete management" (Petty and Gruber 2011); marketing/sales, finance, technical, management [functions—RM] (Streletzki and Schulte 2013); and "prior job experience—some large firms, some start-ups" (Franke et al. 2008). In general, entrepreneurial experience encompasses previous jobs in creating and developing new ventures, such as an "entrepreneur who has successfully started a previous business given special consideration" (Hall and Hofer 1993). The last group of factors related to experience was presented as general experience: "track record of being a lead entrepreneur" (Muzyka et al. 1996); "inexperience" (Petty and Gruber 2011); and "joint working" (Streletzki and Schulte 2013).

#### 2.4.4. Skills

To a point, skills are related to experience, but in Table 2, skills were presented separately to precisely outline their meanings in the referenced papers. As seen in Table 2, skills encompass several functional capabilities related to general management and, in more details, to production (engineering, technical issues), marketing/sale, finance, and organizational capabilities.

#### 2.4.5. Education

Factors related to education were rarely addressed in the relevant research. Franke et al. (2008) were interested in the "field of education—all engineering" and the "field of education—some engineering, some management".

#### 2.4.6. Trustworthiness

As elaborated below, due to the threat of agency costs and the inability of VCs to address these costs fully by writing complete contracts, entrepreneurs are expected to be trustworthy and reputable. Some knowledge about the trustworthiness of the entrepreneur might be obtained by VC decision-makers upon meetings with the person ("integrity", "competes against self-imposed standards" (Mishra 2004)), while some requires consulting external parties (assess reputation) "references of entrepreneur" ((Tyebjee and Bruno 1984); "the entrepreneur was referred to me by a trustworthy source" (MacMillan et al. 1985)).

#### 2.4.7. Others

Characteristics not included under previous groups include one demographic feature, age, which was addressed by Franke et al. (2008).

It is extremely difficult to generalize the conclusions from previous research, which addressed the relative importance of several characteristics of entrepreneurs for VCs' decisions. Studies vary considerably in their number of items, wording, and research techniques. Moreover, some characteristics that were found to be relatively important in one study were less important in another. For example, perseverance was the most important among the 24 items in the study by MacMillan et al. (1985) but only 9th out of 24 items in the study by Ramon-Llorens and Hernandez-Canovas (2010) (not presented in Table 2). Some characteristics, on the other hand, seem to be important almost universally. This is the case for honesty of the entrepreneur. Experience, skills, and competences seem to be slightly less important. Eisele et al. (2004) found education to be of relatively low importance (21st position among the 31 items used in their study).

#### 2.4.8. A Single Entrepreneur or a Team

In some studies, the team (entrepreneurial and/or managerial) was addressed as whole, e.g., as being "balanced" (Eisele et al. 2004; Mishra 2004). A striking element of the 'human capital' factor that stands out in the literature is that researchers do not always pay detailed attention to the difference between entrepreneurs and managers. However, in the tradition of entrepreneurship theory, this distinction is fundamental. In the seminal work by MacMillan et al. (1985), this distinction was clearly addressed, as the personality and experience of the entrepreneur were presented separately from those of the managerial team in this paper. In the history of economics, this division was clear for early theoreticians (Smith 1776). However, subsequently, together with emergence of large organizations, this division decreased in importance. A typical reflection on this process and its unfortunate impact on the theory of economics was expressed by Baumol (1968, 2002). This lack of consistency in VC studies likely also results from the fact that research on VCs' decision criteria started prior to the technological revolution of the 1990s (MacMillan et al. 1985), when groups of entrepreneurs (start-ups) rather than solo entrepreneurs were more frequently observed as enterprising units. This shift of interest from a hypothetical entrepreneur toward teams is also visible in the European studies (especially German) (e.g., (Eisele et al. 2004; Franke et al. 2008; Streletzki and Schulte 2013)). MacMillan et al. (1985), Riquelme and Rickards (1992) addressed entrepreneur's (single) (not entrepreneurs' (plural)) characteristics. Some authors then began to assume that a group rather than a single entrepreneur should be evaluated or that a particular entrepreneur (e.g., a leading one) should be considered (see "the track record of a lead entrepreneur" in Muzyka et al. (1996) and "characteristics of the entrepreneur/team" in Hall and Hofer (1993)). In the 21st century, especially in European studies, there include "team members" (Franke et al. 2008; Streletzki and Schulte 2013) or general "management" (Eisele et al. 2004), instead of a hypothetical entrepreneur (single person). However, some recent American studies continue to consider a single person (e.g., Hsu et al. 2014; Warnick et al. 2018). The studies in which emphasis is placed on groups (teams) are interested in the completeness and diversity of such groups. Therefore, the heterogeneity of functional experience and skills of team members were addressed in the research by Streletzki and Schulte (2013) and Franke et al. (2008).

#### 2.4.9. Selected Determinants of VCs' Decision-Making

Some VC firms are more prone to invest in specific industries, especially those that are linked to higher innovativeness. Rosenbusch et al. (2013) expressed the opinion that the ability to sort-out the most prospective industries is a crucial ability of VCs and leads to higher profitability of their investments. In the 21st century, VCs are attracted especially to IT, biotechnology, health care, and (recently) to automation, robotics, and renewable energy. Because VCs are heterogeneous as financial institutions, some of their characteristics may be linked to their investment policies, as well as to the importance they attach to investment criteria. This might be due to their age (and experience), as Petty and Gruber (2011), who analysed the database of an existing VC firm, observed that this firm had learned from previous deals. This might be also a focus at different stages of a firm's development.

In a German study by Eisele et al. (2004), funds were shown to be concentrated on early-stage projects and expected the founders to be technically competent, whereas those that preferred more mature firms looked instead for sales and financial competences. Petty and Gruber (2011) observed that the importance of some criteria has evolved alongside the whole decision process. The authors claim that in the earliest stages, VC managers were more preoccupied with factors related to the product, whose shortcomings represent the major reasons for project rejections. Later in the decision-making process, as concluded by Petty and Gruber, more attention is paid to financial data and the details of the prospective investment contracts. Interestingly, the characteristics of the entrepreneurial team did not result in rejection throughout the decision process, which, to some extent, contradicts the widely-held opinion of the crucial role played by human factors, as expressed in the literature. Two decades earlier, Riquelme and Rickards (1992) proposed that in the early stage (screening) of the decision-making process, special attention is paid to criteria related to the entrepreneurs and the existence of the prototype of a product, whereas later (evaluation stage), the uniqueness of the product and financial factors supplement the assessment.

The latest theoretical reflections on VC decision-making cast doubts on the pure rationality (in the economic sense) of this phenomenon and suggest that the bounded rationality paradigm may offer new insight into the studied process. In this vein, Franke et al. (2006) showed that decision-makers are driven by similarity biases, favouring start-up teams with which they share similar characteristics in terms of education and previous professional experience. Baum and Silverman (2004) speculated that VC managers might be plagued by attribution errors, placing emphasis on people (not situations) as the causes of failures and thereby overestimating the degree of entrepreneurs' control over the enterprises. At the same time, however, they might experience the influence of situational factors. These authors also speculate that VC decision-makers might be prone to attribute their successful investments to their own abilities to pick and build winners, but in cases of failure, they might blame the entrepreneurs for not trying hard enough.

### *2.5. Why Are Entrepreneur's Characteristics Important to VCs?*

VCs pay attention to the characteristics of entrepreneurs who seek funding. There are two primary reasons for their interest: (1) entrepreneurs provide human (entrepreneurial) capital for the funded firms, and (2) once the funding has been commenced, both parties must cooperate to make the investment successful.

The importance of human capital for the firm's development constitutes the core of the entrepreneurship paradigm and has been elaborated in theoretical reflexions for nearly three centuries, starting with Cantillon (1755), through to, e.g., Smith (1776), Say (1803), Marshall (1890), Knight (1921), Schumpeter (1952), Von Mises (1949), Von Hayek (1945), Baumol (1968), Kirzner (1973), and Casson (1982). This interest in the entrepreneurship paradigm based on the special status of entrepreneurs' human capital is also reflected in the contemporary specialized literature. Gimeno et al. (1997) called this factor "entrepreneurial human capital". Erikson (2002) similarly referred to it as to "entrepreneurial capital", analysing its meaning in a private capital market context. Erikson defined this term as a function of entrepreneurial competence (the "combined capacity to identify and pursue opportunities, and to obtain and coordinate resources", p. 278) and entrepreneurial commitment ("capacity to see ventures through to fruition", p. 278). These definitions seem to be in line with those of studies on VC decision-making, as elaborated in the previous section. Entrepreneurial capital encompasses a wide spectrum of qualities that have been researched in general entrepreneurship studies (not directly linked to the private capital market setting). These qualities have a (1) personal (personality, various kinds of experience) (Dimov 2010; Gielnik et al. 2012), educational (Dickson et al. 2008), age (Gielnik et al. 2012)), and (2) social (trustworthiness, reputation) nature. The modern entrepreneurship literature provides a multitude of more specific qualities (related to personality and cognitive abilities) and has managed to link them with entrepreneurial endeavours, including perseverance (Markman and Baron 2003); optimism (Hmielski and Baron 2009); self-efficacy

(Chen et al. 1998); the need for achievement (Collins et al. 2004); risk tolerance (Jay and Dess 2006); information processing (entrepreneurial alertness) (Kirzner 1973); entrepreneurial counterfactual thinking (Gaglio 2004), and effectuation (Sarasvathy 2001). Moreover, the latest conceptualisations of entrepreneurial behaviour provide modest evidence that, to some extent, the propensity to choose an entrepreneurial carrier may have a biological (also inborn) background (Shane et al. 2010; Bönte et al. 2016). If so, entrepreneurial capital would be even rarer and thus more valuable.

Entrepreneurship research also highlights the cultural and social contingencies of entrepreneurial behaviour, as the entrepreneurial process is deeply rooted in its socio-cultural context. This interest is reflected especially in studies that incorporate social capital theory in the entrepreneurship domain. Social capital theory extends human capital theory (Coleman 1988) and is preoccupied with the analysis of social structures and the activities of social actors. The entrepreneurship domain provides considerable evidence that the propensity for entrepreneurial behaviour (e.g., starting new ventures) and the outcomes of such behaviour vary across nations (Aghion and Howitt 1992; Wennekers and Thurik 1999; Audretsch and Thurik 2001) and even across regions within a specific country (Audretsch and Fritsch 2002). An important conclusion of such studies lies in the observation that some social structures are better for entrepreneurs seeking various external resources necessary to create business, but such structures also facilitate transactions. Therefore, social and cultural capital, together with human capital, complement financial capital in entrepreneurial endeavours (Thornton et al. 2011). Studies provide evidence that Poland, as a social and cultural environment, has its own particular features in an entrepreneurial context. For example, Glinka and Thatchenkery (2013) showed that, in comparison to the USA and India, the propensity to undertake entrepreneurial jobs in Poland (to have entrepreneurial intentions) is impacted by higher uncertainty avoidance and a more negative perception of the social status of entrepreneurs. Młokosiewicz and Misiak-Kwit (2017) showed that relatively low trust in the business sphere suppresses entrepreneurial activities. The social and cultural context of the VC investment process was also addressed in VC studies. Li and Zahra (2012) provided evidence that VC firms are better developed in societies that rank lower on the uncertainty avoidance scale (this means they are higher in their uncertainty tolerance), with collectivism being unimportant in this regard. Poland scores relatively high on the uncertainty avoidance scale in comparison to the average calculated for the world and Europe (Murdoch 2009). Both lower trust and higher uncertainty avoidance may theoretically pose a threat to the development of the VC market in Poland. VCs inherently acts under heightened information asymmetry, which might promote environments of higher trust. Similarly, higher uncertainty avoidance might inhibit the effectiveness of the VC market.

The second most important source of VCs' interest in the characteristics of entrepreneurs is that both parties form a joint company financed by the fund's money and managed by the entrepreneur. The relationship between both parties clearly represents a situation of substantial information asymmetry. Information asymmetry refers to a state in which market participants have unequal access to information, which results is possible inefficiency of the market. This disruption creates a demand for mechanisms to protect less informed parties, as well as mechanisms in the form of additional information that would certify the true value of the traded commodities (Akerlof 1970; Stiglitz 1975). In a private capital market setting, the entrepreneur usually has more knowledge than a potential investor about his/her own capabilities and the prospects of the project. VCs are believed to specialize in operating within this type of highly asymmetric (in terms of information availability) private capital market (Leland and Pyle 1977; Hellman and Puri 2002). Therefore, the theoretical reflections on this relationship are dominated by agency theory (Sapienza and Gupta 1994). According to agency theory, the agency problem (agency costs) may emerge if one party (an agent) makes a decision on behalf of the other party (a principal) (Jensen and Meckling 1976; Fama and Jensen 1983). In the case of divergent objectives between the principal and the agent, the latter may not disclose all the relevant information needed by the former. A potential moral hazard results from the self-serving actions of the agent, which can be detrimental to the interests of the principal. This may occur if the agent's

actions are hidden from the principal (Eisenhardt 1989). Jensen and Meckling (1976) listed a number of such "aspects of entrepreneurial activity": physical appointments of the office, the attractiveness of the office staff, the level of employee discipline, the kind and amount of charitable contributions, personal relations with employees, the presence of a larger-than-necessary computer, and the purchase of production inputs from friends.

The agency relationship may be also divided into vertical and horizontal variations, which are used more specifically to describe the relationship between the stakeholders of the firm (Eisenhardt 1989; Young et al. 2008). The vertical form undermines the relationship between shareholders and professional managers and was described early in the economic literature (Smith 1776; Berle and Means 1932). The horizontal variation of the agency problem results from the divergence of interests between various classes of owners (Young et al. 2008). The relationship between the VC firm and the entrepreneur typically represents horizontal variation of the agency relationship, as both parties are usually major owners of the company.

VCs' concerns may be linked to both adverse selection and moral hazard problems, as the entrepreneur is believed to have good knowledge of the firm's prospects and his/her own competences to manage it (adverse selection) and will utilize capital once the investment has been provided (moral hazard). Agency costs also involve monitoring and bonding, which the principal must bear to prevent the unwanted behaviours of the agent. In the VC firm–entrepreneur relationship, agency costs are addressed by the first party, both prior to the decision and afterwards. To reduce possible adverse selection, the investor strives to discover the true prospects of the funded firm, as well as the capabilities of the entrepreneur. On the other hand, moral hazard costs might be reduced if the investor obtains knowledge about character of the entrepreneur and constructs an appropriate contract (Gompers 1995; Cumming 2005; Cumming et al. 2010). Therefore, VCs' concerns about the entrepreneur's characteristics are reflected in their contracting policies, especially since VCs are believed to be highly competent in this field (Cumming et al. 2010). To a great degree, the contracts between VCs and entrepreneurs serve as a protective mechanism against agency costs, as elaborated above. Contracts cover a wide spectrum of issues, especially addressing moral hazard concerns, as contracts are crafted to regulate the relationship once the deal has been made. However, adverse selection is also addressed by staged funding, which protects the VC firm from investing money into projects that are unpromising as a result of the entrepreneur's incompetency. In an economic sense, the possibility to refuse the next rounds of funding may be understood as an option to abandon the project (Hege et al. 2003). This mechanism also serves as a motivational tool because it urges the entrepreneur to attain the agreed performance goals on time (milestones) (Huyghebaert and ODonohoe 2007). Staged financing reduces the information advantage of the entrepreneur over the VC firm (Elitzur and Gavious 2003), which led Gompers and Lerner (2001) to describe it metaphorically as a "tight leash" because it disciplines the founder. Hence, Gompers and Lerner (2001) perceived staged financing as the most effective controlling mechanism at a VCs' disposal. Tuned staged financing is more strongly justified in cases of increased risks related to the project, with entrepreneur's characteristics representing a significant part of such risks (Bienz and Hirsch 2005). An important part of the contract regulates the present and prospective ownership structure. At the inception of the deal, the division of ownership in the first line reflects the valuation of the assets provided to the company by the founders (the venture and founders' entrepreneurial capital) and that provided by the VCs (funding and possible future value added in the form of supporting management of the firm). The contract regulates the contingencies of future changes of this structure (e.g., investing). Provisions related to the entrepreneur's stakes in the company, together with remuneration clauses, are believed to be especially important if his/her skills are crucial for the execution of the project but are difficult to assess by the investor (Kaplan and Stromberg 2004). Both parties protect their ownership rights via several clauses, including tag-along and drag-along options or lock-ups. These provisions are commonly used in VC contracts (Caselli et al. 2013; Lovas et al. 2015). A VC firm's position vis-à-vis the founder can be enhanced by ratchet-down provisions that may decrease the stakes of the latter in the venture

if he/she does not deliver the agreed-upon goals ("smoking out the entrepreneur") (Brechbuhl and Wooder 2004; Manigart et al. 2002). Another important part of the contract regulates the formation of corporate bodies. In the early stages of research on the VC market (MacMillan et al. 1985), a structure of corporate bodies was believed to be the most important governance tool for VCs to control their portfolio companies. In practice, the greatest amount of attention is paid to the division of seats among the board of directors. Directors established by the investor play supervisory roles but also assist in adding value, offering links for the entrepreneurs to the environment, and assisting in formulating and executing strategies (Suchard 2009; Busenitz et al. 2004). The scope of control of the VC investor over the board is related to the level of risk perceived in the project (Kaplan and Stromberg 2001). In a study conducted in one of the CEEC (Hungary), Lovas et al. (2015) showed that almost all VC firms in the sample carefully negotiated the provisions of their presence on the board. Supervision over an entrepreneur's actions is also enhanced by special protective provisions agreed to in the contract, especially the VC firm's veto rights against capital expenditures, remuneration policies, staffing of the high ranks in the organizational structure, mergers and acquisitions, equity and debt issuances, buy-backs, and dividend payments (Barney et al. 1994; Bengtsson 2001). In the early stages of a firm's lifecycle, the entrepreneurial capital of the founder constitutes a substantial part of the whole project's value. Therefore, the founder's departure from the firm may pose a grave risk to the investment. Moreover, entrepreneurs might be able to pursue their ideas elsewhere, thus creating a competitive threat (Barney et al. 1994). These threats may be alleviated by placing non-compete clauses in the contract imposed upon the entrepreneur. The elements of the contract are presented above mostly as protective mechanisms used by the VCs to manage agency risk. However, the investor is also interested in keeping, and possibly, enhancing the entrepreneur's motivation.

For obvious reasons, it is not possible for the VCs to oversee future events and regulate them explicitly in the contract. An incomplete contract paradigm was, therefore, proposed by Lu et al. (2006) as a valid perspective for better understanding the relationship between the VC firm and the founder. Regulations of the relationship between the founders and the investors may also be perceived from a procedural justice perspective. In this vein, it is important not only what provisions are included in the contract but also how they are perceived by the parties (especially by the founder). If the contract is perceived as fair, chances for expected behaviour of the founder increase (Sapienza and Korsgaard 1996). Friendly interactions between entrepreneurs and VC managers in the execution stage are related to better outcomes of the investment (Sapienza 1992). Not only do entrepreneurs profit from the assistance provided by VC managers but the latter also learn from the best entrepreneurs (De Clercq and Sapienza 2005) and spend with them more time, especially in Europe (Sapienza et al. 1996).

Theory on the relationship between VCs and entrepreneurs has been developed mostly in the legal and socio-cultural context of the USA. In other environments, especially if they represent non common-law legal settings with weaker legal frameworks (e.g., the rule of law, protection of minority owners), knowledge on the relationship between the VCs and the founder, as well as the interpretation of contract provisions, should be taken with caution. This might be the case in Poland. Ahlstrom and Bruton (2006), who studied the Chinese VC market, concluded that the relationship between parties in this environment is influenced by cultural and social factors. For example, informal ties are more important.

As mentioned, despite the sophistication of contracts written between investors and entrepreneurs, these contracts cannot cover all hypothetical states of the world. Therefore, the integrity of the founder serves as an additional factor that might lessen the VCs' concerns. The relationships between the VCs and the founders may be threatened by conflicts that, in extreme cases, lead to expelling entrepreneurs from their leading positions in the firms (Bains 2007). Wasserman (2003) showed that subsequent rounds of funding greatly increase the probability of replacing the founder's position as CEO with a professional manager. Therefore, a careful initial assessment of the entrepreneur's characteristics by the VC firm may reduce future tensions between both parties. Despite the dominance of the agency

perspective in modelling the relationship between the VCs and the entrepreneur, this negative view of the founder has been criticized in the literature (Arthurs and Busenitz 2003), which is in line with a more general (beyond the VC context) stewardship theory (Donaldson and Davis 1991). In this respect, the entrepreneur cannot be seen as merely an agent to the investor, as he/she is driven also by personal motivation and close attachment to the (funded) firm.

## 3. Materials and Methods

### 3.1. Reseach Desingn

Studies on VC decision-making have evolved in terms of their methodological attitudes. Multiple techniques for data collection have been employed, including (1) questionnaires (e.g., (Tyebjee and Bruno 1984)); (2) Individual in-depth interviews (IDIs) (Fried and Hisrich 1994); (3) verbal protocols (Hall and Hofer 1993); (4) quasi-experiments (Riquelme and Rickards 1992); (5) participant observations (Silva 2004); (6) analysis of artefacts (documents, databases; e.g., (Petty and Gruber 2011)); (7) compiled databases (Puri and Zarutskie 2012); and (8) data compiled from publicly traded companies (Bottazzi and Rin 2004). Simple post-hoc methods like questionnaires, interviews, and verbal protocols have been criticized for their poor resilience (Shepherd and Zacharakis 1999). Therefore, quasi-experiments have attracted researchers' attention in newer studies on VC decision-making. The conjoint analysis technique has been used in this field, starting with the seminal paper by Riquelme and Rickards (1992) and followed by Muzyka et al. (1996), Franke et al. (2008), and Shepherd et al. (2000). Recently, conjoint analysis was used to simultaneously study VCs' and business angels' decision-making (Hsu et al. 2014; Warnick et al. 2018). For this paper, a compilation of methods was used, including a conjoint experiment (for the first research question) and elements of a questionnaire (for the second and third research question). As data were collected by the author in person, a short interview with respondents was conducted upon meeting them. The results of this interview are not presented in a systematic way in this paper, but selected statements are used in the discussion section to shed more light on the findings.

### 3.2. Conjoint Experiment

The conjoint analysis was first used in marketing (Green and Rao 1971) to measure qualitative consumer preferences regarding the attributes of a product or service. This method has a psychometric origin, and its goal is to decompose an ordinal scale of holistic judgments into interval scales for the attributes of each component (Hauser and Rao 2004). Conjoint analysis may be used in two modes: 'trade-off' (Muzyka et al. 1996) and 'full-profile ranking' (Riquelme and Rickards 1992). This second application, believed to be more realistic, is used in this study. In the 'full-profile ranking' setting, a respondent ranks, orders, or scores a set of presented cards based on his/her preferences. The cards represent different combinations of attributes, thereby simulating a complete object.

In this study, six attributes are used to describe the investment proposition, each measured on a two-point scale. Therefore, the full hypothetical set of objects comprises $2^6 = 64$ cases. The standard method of coping with this abundance is to use fractional factorial design to reduce the number of cases. This process was done here with the R CONJOINT module (Bąk and Bartłomowicz 2012), which implements the AlgDesign algorithm (Wheeler 2012). Thus, the number of evaluated objects (investment propositions) used in this study was reduced to eight.

The six investment criteria selected for this study equally represent the three criteria related to the 'human factor': (1) the entrepreneur's passion, (2) the entrepreneur's industry experience, and (3) the completeness of the managerial team. The three factors related to the opportunity are represented by (4) product readiness, (5) market growth rate, and (6) innovativeness of the whole project. This six-item set was built based on the review of existing literature and in consultation with two decision-makers working in the private capital market in Poland. The inclusion of a factor related to finance was abandoned after the pilot study, as Polish VC managers are reluctant to reveal data and information

related to finance. Moreover, as Hall and Hofer (1993) note, risk and reward result from other factors inherent to the project. All six attributes were defined on two-point scales. Thus, the three 'human factor' items were measured as (1) 'personal involvement and passion of the entrepreneur' (lower level of 'low' vs. a higher level of 'high'); (2) 'industry experience of the entrepreneur' ('long, 5-years or longer' vs. 'short, no longer then 1-year'); (3) 'managerial team' ('complete, with long experience' vs. 'not complete, with short experience'). The three factors related to opportunity were defined as (4) 'product' ('finished, acceptance of the market already proven' vs. 'not ready as yet, acceptance of the market not proven'); (5) market ('big, high growth rate' vs. 'quite big, low growth rate'); and (6) 'innovativeness of the whole project' ('substantial' vs. 'limited'). The respondents were asked to order eight paper cards according to the attractiveness of the investment propositions simulated on these cards, assuming that the assessment is made in the early stage (screening) of the decision-making process. Table 3 presents one of the eight cards used in this study.

**Table 3.** One of eight cards used for the conjoint experiment in the study.

| **Model A** | |
|---|---|
| Product (service) | Not yet ready, acceptance of the market not proven |
| Market | Quite big, low growth rate |
| Innovativeness of the whole project | Substantial |
| Personal involvement and passion of the entrepreneur | High |
| Industry experience of the entrepreneur | Long, 5 years or longer |
| Managerial team | Complete, with long experience |

Source: own study.

### 3.3. Eight Characteristics of Entrepreneurs

To determine the relative importance of the selected characteristics of the entrepreneurs, respondents were asked to rank eight characteristics that describe him/her in order of importance. These characteristics were selected based on the previous studies on VC decision-making, as discussed in Section 2 (Table 4). Both of the entrepreneur characteristics used in the conjoint experiment were repeated in this exercise: (1) passion and (2) industry experience. Two other types of experience were also assessed: (3) entrepreneurial and (4) managerial experience. Following previous studies, the list also encompassed (5) honesty; (6) likeability of the entrepreneur (to address "personality compatible with VC manager" (MacMillan et al. 1985); (7) ability to manage risk; and (8) education.

**Table 4.** Characteristics of the entrepreneur assessed by VC managers in the study.

| **Characteristic of the Entrepreneur** | **Rank** |
|---|---|
| Education: level and consistency with industry | |
| Honesty; perception that this person is trustworthy | |
| Entrepreneurial experience: previous creation and running of a firm | |
| Managerial experience: previous management of a mature firm | |
| Industry experience in an activity similar to the presented project | |
| Passion and enthusiasm in the presented project | |
| Perception that the person may be liked | |
| Capability to properly perceive risk and the ability to manage it | |

Source: own study.

### 3.4. Importance of the Entrepreneurial Team

The hypothetically higher importance of a team over a single entrepreneur (Franke et al. 2008; Streletzki and Schulte 2013) was assessed in the study via two exercises (Table 5). In the first exercise, respondents were asked to answer if their assessment of the investment proposition would change if it were proposed by a team of founders rather than a single entrepreneur: 'How, most probably, would the assessment of the whole investment proposition change if it were presented by a team of

founders instead of a single person, assuming that all other characteristics of the proposition were not changed?'. The respondents had to choose from five options, starting with (1) 'the assessment would be definitively lower' and ending with (5) 'the assessment would be definitively higher' (see Table 5). To evaluate the most preferred composition of a founder's team, respondents were asked to choose the functional composition of a hypothetical group comprising three persons: 'Assuming that a founder's team consisted of three persons, what three functional backgrounds would be the most preferred?'. The respondents were presented eight options and instructed to choose three of them.

**Table 5.** Assessment of the importance of the team and the preferred composition of the team.

| |
|---|
| *'How, most probably, would the assessment of the whole investment proposition change if it were presented by a team of founders instead of a single person, assuming that all other characteristics of the proposition were not changed?' Please select one.* |
| □ The assessment would be definitively lower |
| □ The assessment would be somewhat lower |
| □ The assessment would stay the same |
| □ The assessment would be somewhat higher |
| □ The assessment would be definitively higher |
| *Assuming that a team of founder's consisted of three persons, what three functional backgrounds would be the most preferable?* |
| □ Technological (related to the industry that the firm operates in) |
| □ Accounting |
| □ Finance |
| □ Marketing |
| □ Sales |
| □ Human resource management |
| □ Administration (general management) |
| □ Law |

Source: own study.

### 3.5. Construction of the Sample

In VC studies, truly representative samples are difficult to obtain. Therefore, such research must often rely on convenience samples, as done by Smart (1999) and Franke et al. (2008). A similar approach was chosen for this study. A list of 95 VC firms was constructed from the information provided on the web page of the Polish Society of Capital Investors (www.psik.org) and press releases and from the Internet. Mail was then sent to 95 institutions together with a cover letter explaining the goal of the study. In total, 26 institutions (27.3%) agreed to participate in the study.

### 3.6. Data Collection

I arrived at every institution in person. During the 45–60 min meetings, the respondents completed the conjoint experiment (ranked the cards) and filled in the questionnaire, which covered remaining issues. In the last part of every meeting, an interview was carried out to determine the respondents' opinions on their decision policies and perception of entrepreneurs. Opinions were the recorded by the present authors. This study was carried out in the years 2015–2017 in major Polish cities, where the majority of VC firms have their headquarters (Warszawa, Kraków, Poznań, Wrocław, Gdańsk, Katowice, Rzeszów).

### 3.7. Characteristics of the Sample

Respondents were asked to select two stages of firm development that their institution typically invests in. As seen in Table 6, the sample was dominated by VC firms that invested in early-stage projects, with 57.6% of them investing in projects at the start-up stage or earlier. Growth, expansion, and later stages were preferred by 7 institutions (26.9%). The respondents varied considerably in their experience in the VC industry. The mean number of years that the respondents had worked in the

private capital market was 6.9 (median: 6.0). In most cases, the respondents served in high positions in the organizational structure: six were investment directors (equivalent of a CIO in the American market); five were investment managers; five were partners in the VC firm; one was a shareholder in the VC firm; and the remaining persons occupied lower positions. The sample was dominated by male managers.

**Table 6.** Characteristics of the VC firms and respondents in the study.

| Characteristic | Characteristic of the Sample |
|---|---|
| Preferred stage of firm development (not more than two for each institution) | Number (%) of respondents<br>Seed: 1 (3.8);<br>Seed or start-up: 12 (46.2)<br>Start-up: 2 (7.6)<br>Start-up and growth: 4 (15.3)<br>Growth: 3 (11.5)<br>Growth and expansion: 3 (11.5)<br>Expansion and more advanced: 1 (3.8) |
| Mean (mean) number of years of experience by the respondent in the private capital market | 6.9 (6.0) |
| Positions of the respondents in the VC firm | Number (%) of respondents<br>Investment director: 6 (23.0)<br>Investment manager: 5 (19.2)<br>Partner: 5 (19.2)<br>Co-owner: 1 (3.8)<br>Management board member: 1 (3.8)<br>Lower positions (e.g., analytic, manager): 8 (30.7) |
| Gender | Female: 3 (11.5)<br>Male: 23 (88.5) |

Source: own study.

## 4. Results

Table 7 presents the results of the conjoint experiment. In line with the theoretical recommendations (Hair et al. 2006), to calculate the estimates for the whole sample, only observations in which the estimates of the coefficients presented signs in line with the underlying theory were included (20 cases).

**Table 7.** Results of conjoint experiment: importance of six investment criteria assessed by VC managers.

| Criterion | Partial Utility | Standard Error | *t*-Value | Relative Importance (in %) |
|---|---|---|---|---|
| Constant | 3..325 | 0.2035 | 16.34 | - |
| Entrepreneur's passion | 1.275 | 0.1903 | 6.699 | 18.8 |
| Entrepreneur's industry experience | 0.650 | 0.1903 | 3.415 | 9.7 |
| Completeness of the management team | 1.150 | 0.2035 | 5.652 | 16.9 |
| Product readiness | 1.750 | 0.1903 | 9.194 | 25.8 |
| Growing market | 1.025 | 0.1903 | 5.385 | 15.2 |
| Innovativeness of the whole project | 0.925 | 0.2035 | 4.546 | 13.6 |

Source: own study; Residual standard error: 1.820; multiple R-squared 0.3967; multiple R-squared adjusted 0.373; $F(6; 153) = 16.77$ ($p < 0.001$).

Readiness of the product was the most important of the six investment factors included in the experiment (relative importance: 25.8%). The entrepreneur's passion was second (18.8%), completeness of the management team was third (16.9%), growth of the market was fourth (15.2%), and innovativeness of the whole project was fifth (13.6%). The entrepreneur's industry experience had the lowest importance among all the factors (9.7%).

Table 8 presents the ranking of the eight entrepreneurial characteristics, according to their importance perceived by the respondents. The score was derived from the original order, so the maximum score is 8 (the most valued) and the minimum (the least valued) is 1.

**Table 8.** Importance of eight characteristics according to the VC managers in this study.

| Characteristic | Rank | Standard Dev. |
|---|---|---|
| Honesty; perception that this person is trustworthy | 6.38 | 1.79 |
| Passion and enthusiasm in the presented project | 6.12 | 1.77 |
| Entrepreneurial experience: previous creation and running of a firm | 5.62 | 1.98 |
| Industry experience in an activity similar to the presented project | 5.04 | 1.74 |
| Capability to properly perceive risk and the ability to manage it | 4.92 | 1.52 |
| Perception that the person may be liked | 4.92 | 1.45 |
| Managerial experience: previous management of a mature firm | 3.69 | 1.78 |
| Education: a level consistent with industry | 2.19 | 1.38 |

Source: own study.

Honesty and passion represent the two most important characteristics (ranked, respectively, as 6.38 and 6.12). Hence, the importance of passion (the second most important in the conjoint experiment) was confirmed here. The second characteristic of the entrepreneur that was also applied in the conjoint experiment was industry experience of the entrepreneur, which was ranked as fourth (5.04) and outperformed by founder's entrepreneurial experience (5.62), followed by the ability to manage risk and the likeability of the entrepreneur (ranked, respectively, as 5th and 6th, both with a score equal to 4.92). Interestingly, among the three types of experience considered in this exercise, managerial experience was perceived as less important than entrepreneurial experience and was related to industry (the 7th position, ranked as 3.69). Education had the lowest importance among all eight characteristics considered in the study (ranked as 2.19).

Respondents were asked if their assessment of an investment proposition would change if it were proposed by the team of founders rather than by a solo entrepreneur (Table 9). Nobody answered that the assessment would be definitively lower. A vast majority of respondents (21 persons) expressed the view that a project presented by a team would be preferred over a single-founder project. The results show a clear preference among Polish VC decision-makers for projects run by a group of founders.

**Table 9.** Respondents' changes in their assessment of the attractiveness of a project if it were proposed by a team rather than a single entrepreneur.

| Change in Assessment | Answers (in %) |
|---|---|
| the assessment would be definitively lower | 0 (0) |
| the assessment would be somewhat lower | 1 (3.8) |
| the assessment would stay the same | 3 (15.3) |
| the assessment would be somewhat higher | 13 (65.3) |
| the assessment would be definitively higher | 8 (30.9) |
| No answer | 1 (3.8) |

Source: own study.

Respondents were also asked to choose their preferred composition of a hypothetical three-person team of founders. The results are presented in Table 10.

**Table 10.** Preferred composition of a three-person founder team expressed by the VC managers in the study.

| Functional Skills | Number of Cases | Percentage of Cases |
|---|---|---|
| Technology, marketing, sale | 6 | 23.1 |
| Technology, sale, HRM | 6 | 23.1 |
| Technology, sale, finance | 5 | 19.2 |
| Technology, marketing, administration | 3 | 11.5 |
| Technology, sale, administration | 3 | 11.5 |
| Technology, finance, marketing | 2 | 7.7 |
| No data | 1 | 3.9 |

Source: own study.

Clearly, a team of three founders should have a person with knowledge of the industry that the firm operates in. Such a person was highlighted by all respondents who answered this question. A team should also have a person who deals with marketing or sales and/or two people specializing in both of these functions. Less often, the respondents desired an human resource management (HRM) and a finance or administration (general management) specialist. Nobody expressed a desire for an accountant or a lawyer.

## 5. Discussion

The first research questions were stated as follows: What is the relative importance of the investment criteria for Polish VCs? The two most important investment criteria found in the conjoint experiment were product readiness (relative importance in the conjoint analysis is 25.5%) and passion of the entrepreneur (18.8%), with the first being more important.

As discussed in Section 2, passion per se has not been addressed in most studies on VCs' criteria, and only recently has its importance been underscored in research (Hsu et al. 2014; Warnick et al. 2018). At the same time, the crucial role of passion in investment decisions has been commonly acknowledged in business angel studies (Haar et al. 1988; Stedler and Peters 2003; Mitteness et al. 2012). VCs may value passion because passionate founders are more likely to devote energy and personal involvement to develop their projects. In the interview, one of the VC managers expressed the view that industry experience might only yield results that are similar for the whole industry, whereas passion creates a competitive advantage and helps in building supreme projects. Moreover, in studies on the business angel market, passion was psychologically decomposed into three main factors (manifestations): cognitive, behavioural, and emotional (Chen et al. 2009). To some extent, this emotional component might be perceived by VC decision-makers as a signal alleviating adverse selection concerns: passionate founders may signal the true value of their projects because they innately believe in their prospects. Therefore, this result adds to the body of knowledge showing that the founders' passion plays a significant role as an investment criterion, not only for business angels but also for VC decision-makers.

Features of the product have been viewed as an important investment criterion in many international studies (e.g., (Eisele et al. 2004; Muzyka et al. 1996)), but its importance among Polish VCs, as reported in this study, seems to be even greater. The majority of other studies present aggregated results in the form of means or other general measures. Aggregated results may, however, hide a more complicated picture. In this study, the analysis of individual preferences (not presented in Table 7) showed that for 10 respondents, the readiness of the product was the most important feature of the proposition, and for the next five, it was the second most important. Similarly, passion was the most important factor for six and the second most important for four VC managers. Respondents were heterogeneous in their preferences. This heterogeneity may also be partially responsible for the divergence between the results of other studies on VCs' criteria due to particularities of their samples. For example, as previously mentioned, the product's readiness was reported to be relatively

important in the studies by Eisele et al. (2004) but seemed to be less important in the papers presented by MacMillan et al. (1985), Mishra (2004), and Ramon-Llorens and Hernandez-Canovas (2010).

The growth of the market had moderate importance for the managers in the study (the relative importance in the conjoint analysis was 15.2%), with only one manager (5% of all cases accepted for the conjoint analysis) perceiving it as the most important feature of the investment proposition and the second important criterion for four managers (20%). Again, in some international studies, growth of the market was shown to be relatively important, as in MacMillan et al. (1985); Ramon-Llorens and Hernandez-Canovas (2010); and Franke et al. (2008), but less important in Eisele et al. (2004) and Muzyka et al. (1996).

The innovativeness of the project considered in the conjoint experiment presented in this paper is novel among VC decision-making studies. In this study, the overall importance of innovativeness in the conjoint experiment ranked last among the six considered investment features. Only one VC manager (5%) ranked it as the most important feature, another three (15%) it as the second most important, 8 (40%) as the fifth most important, and 1 (5%) as the sixth most important. In the studies that addressed innovativeness, this criterion was seemingly considered as the sole feature of the product (Eisele et al. 2004; Mishra 2004) but actually represents only one possible form of innovativeness (beside process, organization, and marketing). In other studies, this was addressed by considering the high-tech character of the product (MacMillan et al. 1985; Ramon-Llorens and Hernandez-Canovas 2010; Mishra 2004). Only in the study by Eisele et al. (2004) was the innovativeness of the product reported to be a relatively important feature, whereas in other studies (also those considering the product as high-tech, which might be regarded as a proxy for its innovativeness), this feature was found to have relatively low importance. Therefore, the results of this study are in line with previous research. The low importance given to the innovativeness of the project expressed by the respondents might seem surprising, as the VC industry is commonly perceived as one that thrives on innovation. Perhaps, however, it is not innovativeness *per se* that matters but rather proven (tested) innovation, as one can conclude from the above discussion on the importance of the readiness and market acceptance of the product.

Completeness of the managerial team was ranked in the middle of the six attributes of the investment proposition, with an importance of 16.9%; however, many respondents (11 persons; 55%) considered it to be at least the second most important (9 cases; 45%). Due to the methodological concerns presented in Section 2, it is difficult to compare this result with the results of other studies, as the distinction between entrepreneurs and managers is not clearly addressed in the majority of past research. This distinction, with its roots in economic theory and underscored in entrepreneurship research, has not been addressed in many VC studies, which often depart from the perspective of finance. Eisele et al. (2004), who referred to this attribute as "balanced management team with complementary skills and experience", found it to be of moderate importance, whereas in the study by Mishra (2004), it was considered very important. In this vein, the results of the present study are in line with those previous studies that have shown the completeness of the managerial team to rank at least in the middle of all investment criteria.

The second research question was stated as: What is the relative importance of the selected eight entrepreneurial characteristics for Polish VCs? The importance of passion, found in the conjoint experiment and discussed above, was confirmed by the ranking of the eight characteristics (ranked second).

Honesty was almost universally perceived by the Polish VC managers as a desirable characteristics of an entrepreneur, which is in line with previous international studies that considered this issue (Mishra 2004; Ramon-Llorens and Hernandez-Canovas 2010; Narayanasamy et al. 2012). The importance of this factor is justified by the nature of VC investment, which features an asymmetry of information (Hellman and Puri 2002) and potentially high agency costs (Sapienza and Gupta 1994). Although VC firms are believed to specialise in writing contracts (Cumming 2005), in practice, it is impossible to predict all possible future situations and activities of an entrepreneur. Moreover, contracts

are less powerful as mechanisms for alleviating possible adverse selection costs than ex-post moral hazard costs. The importance of this factor may also be heightened in low trust business environments, like that in Poland (Młokosiewicz and Misiak-Kwit 2017).

Three types of experience were considered in this study: entrepreneurial, industry, and managerial. Industry experience of the entrepreneur was also addressed in the conjoint experiment and was shown to have the lowest importance among the surveyed VC managers (9.7%, the lowest among all six considered features). Entrepreneurial experience was only slightly more important than industry experience in the exercise in which the respondents ranked the eight characteristics of the founders (5.62 vs. 5.04), with both types of experience being clearly valued more than managerial experience (score 3.69). The relative low importance of the founder's experience (industry) among all six features of the investment proposition considered in this experiment seems to be surprising compared to the results of other authors. Experience was very important in the studies by MacMillan et al. (1985), who understood it more broadly using five dimensions of experience: (1) thorough familiarity with the market, (2) demonstrated leadership in the past, (3) a track record relevant to the venture, (4) being referred by a trustworthy source, and (5) familiarity with the entrepreneur's reputation. The first three of these items, which are very close to the meaning of "experience" used in the present study, were also ranked highly in the paper by MacMillan et al. (1985). In the study by Eisele et al. (2004), experience was addressed in an even more detailed way by considering seven dimensions. However, among these seven items, familiarity with the target market was found to be the most important (similar to the finding in (MacMillan et al. 1985)). In another European study by Muzyka et al. (1996), industry experience was also very important. Thus, the relatively higher importance of the founder's industry experience compared to other types of experience (here, entrepreneurial and managerial) is line with other studies. Nevertheless, the overall lower importance of industry experience in comparison to other features of the project, both in the conjoint experiment and in the ranking, seems to be at odds with the results of other studies. In the interview, one of the VC managers expressed the view that such experience might sometimes be undesirable, as the track record of mature organizations (a typical method to obtain such experience) might frame 'stereotypical thinking'. This opinion could be interpreted in line with psychological studies on entrepreneurial mindsets (counterfactual thinking; (Gaglio 2004); effectuation; (Sarasvathy 2001)). Another source of this difference may lie in the nature of the Polish VC market. This market has been expanding relatively quickly in recent years, with VCs relying on the projects developed by relatively young founders (e.g., graduates of technical universities). In this environment, older generations of entrepreneurs are less aware of this form of funding and less ready to accept external influence over their ventures. Thus, the younger generation of founders, typically targeted by Polish VC firms, has naturally limited experience.

The likeability of the entrepreneur and his/her ability to manage risk were assessed as only slightly less important than industry and entrepreneurial experience. Likeability was only seldom addressed in previous studies (MacMillan et al. (1985), as 'personality compatible with mine'; Mishra (2004), as 'compatible personality') and had relatively low importance among all considered entrepreneurial characteristics. In comparison to these studies, the likability of the founder seems to be more important among Polish VC managers. The ability to manage risk was also found to be important in many other studies (MacMillan et al. 1985; Eisele et al. 2004; Ramon-Llorens and Hernandez-Canovas 2010). In this study, it was ranked in the middle of the eight characteristics.

Education has the relatively lowest importance among all considered characteristics. This result is in line with the results of previous studies interested in this quality (e.g., (Eisele et al. 2004)). Franke et al. (2008) found experience to be more important than a university degree. In the interview, VC managers claimed that many industries change very quickly, so it is more important for founders to be able to constantly update their skills than to rely on formal education.

The third research question was stated as follows: How do VC managers perceive teams of entrepreneurs? The core part of this research (the conjoint experiment and the ranking) followed the tradition developed in US-based studies, which tend to assume the presence of a

hypothetical entrepreneur (a single person). As explained in Section 2, especially in European studies (Eisele et al. 2004; Franke et al. 2008; Streletzki and Schulte 2013), there is a growing tendency in research to consider a group (team), rather than a single person. This attitude, especially in the context of technology-based industries and start-up ecosystems, appears to be more realistic. A balanced team of founders was valued more highly by the surveyed VC managers than a 'lone-wolf' type of entrepreneur. The vast majority of respondents in this study expressed their desire for such projects. This finding is in line with previous studies (Franke et al. 2008; Streletzki and Schulte 2013). It was also possible to establish a hypothetical composition of entrepreneurial teams. This factor is a novelty of this study, as past studies considered several functions performed by a team of founders but did not address such a team's detailed composition (Eisele et al. 2004; Franke et al. (2008). Polish VC managers want a founders' team to include a person familiar with the industry (technology) supplemented by a person knowledgeable about the market (marketing or sales); this duo might be joined by a finance, HR, or administration specialist. In this regard, the results of this research are in line with those of recent European studies showing that VCs are interested in teams of founders (Streletzki and Schulte 2013) and extend these past studies by showing in more detail the preferred composition of teams of founders. In the interview, the VC managers underscored the belief that teams with more resources at disposal (e.g., knowledge, skills, experience, time) may profit from better synergy and functional heterogeneity. The VC managers claimed that teams react faster during unexpected events. Firms developed by groups were more likely to survive the departure of one of the founders. There was also the interesting opinion that a group of founders might lessen the agency concerns of the VCs (i.e., because 'they watch each other').

## 6. Conclusions

The goal of this paper was to explore VCs' decision-making policy in Poland, which is one of the fastest growing private capital markets in the CEEC. The readiness of the product and the entrepreneur's passion appear to be the most valued investment criteria by VC decision-makers, as shown in the results of the conjoint experiment, although the respondents varied in their preferences. Passion and honesty were the most highly valued characteristics among the entrepreneurs, followed by entrepreneurial and industry experience, the ability to manage risk, and the likeability of the entrepreneur. Managerial experience (especially education) did not seem to be of crucial importance for the VC managers. Furthermore, teams of founders are usually more highly valued then single entrepreneurs and are typically expected to have both a technology and a marketing person on board, supplemented by a specialist in finance, HR, or administration.

### *6.1. Recommendations*

Some recommendations can be drawn from this study, especially for entrepreneurs but also for VC managers. The respondents substantially varied in their preferences. Some VC managers were preoccupied mostly with the capabilities of the entrepreneur, while some decision-makers focused especially on the superior features of an opportunity, paying attention to the readiness of the products/services above all else. Hence, entrepreneurs whose projects are rejected may insist on trying to find another VC firm whose expectations can be met. Entrepreneurs might also make up for their weaknesses through impression management (to be perceived as passionate) or improving the quality of the opportunity (developing the product, researching the market more carefully, innovating, and proving the market validity of the innovation) to increase their chances to be funded. In the eyes of the VC managers who pay closer attention to the human capital present in the venture, passion and honesty appear to be the most important characteristics of the entrepreneur, followed by entrepreneurial and industry experience and the ability to manage risk and likeability. Therefore, entrepreneurs are advised to prepare their business plans, presentations, and pitches to persuade VC decision-makers that founders possess such qualities. As the education of the founders does not seem to be crucial for VC managers, entrepreneurs are advised to gather practical knowledge rather than invest their

time in a long formal academic education. Projects presented by teams appear to be preferred by VC managers over projects being developed by single entrepreneurs. As a preferred team consists of a technology (industry) competent person; a person with knowledge of the market (with a marketing or sales function); and possibly a finance, administration, or HRM specialist, groups of founders may join their efforts to build prospective ventures and enhance their chances to be funded.

VC managers who have their own preferences (e.g., those that more strongly value the characteristics of the opportunity) might take chances on the experiences of other decision-makers who have different views on the attractiveness of investment propositions. Such preferences, to some extent, may result from the profiles of the VC firms, which might have their own competences and resources at their disposable, suitable to add value to portfolio ventures. In this case, syndication (co-investing) might alleviate some of the weaknesses spotted in the proposed projects.

As the growth of the VC industry has only recently accelerated in Poland, policy makers are advised to support the start-up ecosystem not only by supplying financial capital to funds but also by supporting the development of entrepreneurial capital. For example, the education of young entrepreneurs or students with certain specializations (IT, biotechnology) might be supported as prospective entrepreneurs in the areas that appear to be most valued by VC firms, including team work, gathering industry and entrepreneurial experience, developing risk management skills, and improving impression management. Similar advice applies to educators, as courses on entrepreneurship are already commonly offered by many Polish universities.

### 6.2. Limitations

The main limitation of the study are its relatively small sample, especially compared to American research. However, to the author's knowledge, this is one of the largest samples obtained not only in Poland but also in CEEC more broadly. A small sample is a typical problem faced by researchers dealing with VC in this region due to the relatively early stage of development of the VC market and the unwillingness of VC managers to participate in such studies (e.g., due to a lack of time). Previous studies in Poland and the region relied on even smaller samples: 6 funds in a study by Bliss (1999) and 15 in a Hungarian study by Lovas et al. (2015). Klonowski (2006) managed to construct a sample of 81 VC managers, but together they represented 27 funds. Even in larger European markets, researchers often find it difficult to construct larger samples (64 business plans from 30 German VCs in (Streletzki and Schulte 2013); 51 VC managers of 26 funds in (Franke et al. 2008); and 30 VCs in (Eisele et al. 2004)). However, in this research, each respondent was met personally by the author in his/her office, which strengthened the quality of the data.

The second limitation concerns the design of the conjoint experiment. The author decided not to include financial factors into the hypothetical models. This fact decreases the comparability of the results with international studies. However, this decision was taken consciously due to: (1) the prevailing opinion that respondents are unwilling to share information on financial issues; (2) the lack of previous studies on financial issues in the VC market in Poland (the inability to establish the desired/undesired values of the variables in the experiment); (4) the relatively young age of the industry (little experience in exits); and (5) the concerns expressed in the literature (Hall and Hofer 1993).

The third limitation of the study is its relatively unsophisticated analytical framework. However, this framework was selected consciously, as apart from the more advanced studies by Klonowski (2006, 2007) (this author was both a researcher and VC manager by the time of his survey), the VC topic seems to extremely under researched, not only in Poland, but also in the CEEC region. A more sophisticated study design or analytical technique(s) (e.g., regression) seemed inappropriate for the small sample expected prior to launching the collection of data for this research.

### 6.3. Direction of Future Research

To the author's knowledge, this study is the first in Poland, and likely also the first in CEEC, that addresses decision-making by VC managers. Although studies in more mature markets (especially

in the USA) are more advanced (and also benefit from larger samples), research in Poland and CEEC may further validate (and extend) the knowledge developed elsewhere. Due to the prediction that the VC market in Poland is expected exit from investments in the years to come, it is important to determine what factors really matter—i.e., what are the determinants of the successes or failures of ventures funded by VC firms? Another more general study could address the differences between ventures created by single entrepreneurs and teams of founders. The entrepreneurship perspective also tends to underscore the difference between entrepreneurs and managers. Does this difference really matter for VC decision-making, especially for start-ups?

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## References

Aghion, Philippe, and Peter Howitt. 1992. A model of Growth Through Creative Destruction. *Econometrica* 60: 323–51. [CrossRef]

Ahlstrom, David, and Garry Bruton. 2006. Venture Capital in Emerging Economies: Network and Institutional Change. *Entrepreneurship Theory & Practice* 30: 299–320.

Akerlof, George. 1970. The Market for "Lemons": Qualitative Uncertainty and the Market Mechanism. *Quarterly Journal of Economics* 3: 488–500. [CrossRef]

Arthurs, Jonathan D., and Lowell W. Busenitz. 2003. The Boundaries and Limitations of Agency Theory and Stewardship Theory in the Venture Capitalist/Entrepreneur Relationship. *Entrepreneurship Theory and Practice* 2: 145–62. [CrossRef]

Audretsch, David B., and Michael Fritsch. 2002. Growth Regimes over Time and Space. *Regional Studies* 36: 113–24. [CrossRef]

Audretsch, David B., and Roy Thurik. 2001. *Linking Entrepreneurship to Growth*. OECD Science, OECD Technology and Industry Working Papers. pp. 1–35. [CrossRef]

Bains, William. 2007. When should you fire the founder? *Journal of Commercial Biotechnology* 3: 139–49. [CrossRef]

Bąk, Andrzej, and Tomasz Bartłomowicz. 2012. Package Conjoint. Conjoint Analysis Package. Available online: http://cran.r-project.org/web/packages/conjoint (accessed on 15 May 2015).

Barney, Jay B., Lowell W. Busenitz, James O. Fiet, and Douglas D. Moesel. 1994. The Relationship Between Venture Capitalists and Managers in New Firms: Determinants of Contractual Covenants. *Managerial Finance* 20: 19–30. [CrossRef]

Baum, Joel A., and Brian S. Silverman. 2004. Picking winners or building them? Alliance, intellectual and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing* 3: 411–36. [CrossRef]

Baumol, William. 1968. Entrepreneurship in Economic Theory. *American Economic Review* 2: 64–71.

Baumol, William. 2002. *The Free-Market Innovation Machine: Analyzing the Growth Miracle of Capitalism*. Princeton: Princeton University Press.

Bengtsson, Ola. 2001. Covenants in Venture Capital Contracts. *Management Science* 11: 1926–43. [CrossRef]

Berle, Adolf, and Gardiner Means. 1932. *The Modern Corporation and Private Property*. New York: Commerce Clearing House.

Bienz, Carstem, and Julia Hirsch. 2005. The Dynamics of Venture Capital Contracts. *Review of Finance* 16: 157–95. [CrossRef]

Black, Bernard S., and Ronald J. Gilson. 1998. Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets. *Journal of Financial Economics* 47: 243–77. [CrossRef]

Błaszczyk, Barbara, Michał Górzyński, Tytus Kamiński, and Barłomiej Paczóski. 2001. *Secondary Privatization in Poland (Part II): Evolution of Onwership Structure and Performance*. CASE Reports No. 48. Warszawa: Center for Social and Economic Research. [CrossRef]

Bliss, Richard T. 1999. A Venture Capital Model for Transitioning Economies: The Case of Poland. *Venture Capital* 3: 241–57. [CrossRef]

Bönte, Werner, Vivien D. Procher, and Diemo Urbig. 2016. Biology and Selection Into Entrepreneurship—The Relevance of Prenatal Testosterone Exposure. *Entrepreneurship Theory & Practice* 5: 1121–48.

Bottazzi, Laura, and Marco Da Rin. 2004. Venture Capital and the Growth of Innovative Companies. *Economic Policy* 17: 229–70. [CrossRef]

Brechbuhl, Beat, and Robert J. Wooder. 2004. *Global Venture Capital Transactions. A Practical Aproach*. Haga: Kluwer Law International.

Bruton, Garry D., Vance H. Fried, and Sophie Manigart. 2005. Institutional Influences on the Worldwide Expansion of Venture Capital. *Entrepreneurship Theory and Practice* 29: 737–60. [CrossRef]

Busenitz, Lowell W., James O. Fiet, and Douglas D. Moesel. 2004. Reconsidering the venture capitalists' "value added" proposition: An interorganizational learning perspective. *Journal of Business Venturing* 19: 787–807. [CrossRef]

Cantillon, Richard. 1755. *Essai Sur La Nature Du Commerce En General*. London: Fletcher Gyles.

Caselli, Stefano, Emilia Garcia-Appendi, and Filippo Ippolito. 2013. Contracts and Returns in Private Equity Investments. *Journal of Financial Intermediation* 2: 201–17. [CrossRef]

Casson, Mark. 1982. *The Entrepreneur: An Economic Theory*. Oxford: Martin Robertson.

Chen, Chao, Patricia Greene, and Ann Crick. 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing* 4: 295–316. [CrossRef]

Chen, Xiao-Ping, Xin Yao, and Suresh Kotha. 2009. Entrepreneur's Passion and Preparedness in Business Plan Presentations: A Persuasion Analysis of Venture Capitalists' Funding Decision. *Academy of Management Journal* 1: 199–214. [CrossRef]

Coleman, James S. 1988. Social Capital in the Creation of Human Capital. *American Journal of Sociology* 94: 95–120. [CrossRef]

Collins, Christopher, Paul Hanges, and Edwin A. Locke. 2004. The relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta—Analysis. *Human Performance* 1: 95–117. [CrossRef]

Colombo, Massimo, and Luca Grilli. 2010. On Growth Drivers of High-Tech Start-Ups: Exploring the Role of Founders' Human Capital and Venture Capital. *Journal of Business Venturing* 25: 610–26. [CrossRef]

Croce, Annalisa, Jose Marti, and Samuele Murtinu. 2013. The impact of venture capital on the productivity growth of European entrepreneurial firms: "Screening" of "value addend" effect? *Journal of Business Venturing* 28: 489–510. [CrossRef]

Cumming, Douglas J. 2005. Agency costs, institutions, learning, and taxation in venture capital contracting. *Journal of Business Venturing* 5: 573–622. [CrossRef]

Cumming, Douglas J., Daniel Schmidt, and Uwe Waltz. 2010. Legality and venture capital governance around the world. *Journal of Business Venturing* 1: 54–72. [CrossRef]

Cumming, Douglas J., Grant Fleming, and Armin Schwienbacher. 2008. Financial intermediaries, ownership structure and the provision of venture capital to SMEs: Evidence from Japan. *Small Business Economics* 31: 59–92. [CrossRef]

Cumming, Douglas, and Sofia Johan. 2017. The Problem with and Promise of Entrepreneurial Finance. *Strategic Entrepreneurship Journal* 11: 357–70. [CrossRef]

De Clercq, Dirk, and Harry J. Sapienza. 2005. When Do Venture Capital Firms Learn from Their Portfolio Companies. *Entrepreneurship Theory and Practice* 29: 517–35. [CrossRef]

Denis, David J. 2004. Entrepreneurial finance: An overview of the issues and evidence. *Journal of Corporate Finance* 2: 301–26. [CrossRef]

Dickson, Pat H., George T. Slomon, and K. Mark Waever. 2008. Entrepreneurial selection and success: Does education matter? *Journal of Small Business and Enterprise Development* 2: 239–58. [CrossRef]

Dimov, Dimo, and Dean A. Shepherd. 2005. Human Capital Theory and Venture Capital Firms: Exploring "Home Runs" and "Strike Outs". *Journal of Business Venturing* 20: 1–21. [CrossRef]

Dimov, Dimo. 2010. Nascent Entrepreneurs and Venture Emergence: Opportunity Confidence, Human Capital, and Early Planning. *Journal of Management Studies* 6: 1123–53. [CrossRef]

Donaldson, Lex, and James H. Davis. 1991. Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns. *Australian Journal of Management* 1: 49–65. [CrossRef]

Dushnitsky, Gary, and Michael J. Lenox. 2006. When does corporate venture capital investment create firm value? *Journal of Business Venturing* 5: 753–72. [CrossRef]

Eisele, Florian, Christian Hacker, and Ralf Oesterle. 2004. German Venture Capitalists' Investment Criteria Over Financing Stages. *International Business & Economics Research Journal* 3: 87–104.

Eisenhardt, Kathleen M. 1989. Agency Theory: An Assessment and Review. *Academy of Management Review* 14: 504–29. [CrossRef]

Elitzur, Ramy, and Arieh Gavious. 2003. Contracting, Signaling, and Moral Hazard: A Model of Entrepreneurs, "Angels" and Venture Capitalists. *Journal of Business Venturing* 6: 709–25. [CrossRef]

Erikson, Truls. 2002. Entrepreneurial capital: The emerging venture's most important asset and competitive advantage. *Journal of Business Venturing* 3: 275–90. [CrossRef]

Fama, Eugene, and Michael C. Jensen. 1983. Separation of Ownership and Control. *The Journal of Law & Economics* 2: 301–25.

Franke, Nikolaus, Marc Gruber, Dietmar Harhoff, and Joachim Henkel. 2006. What you are is what you like—Similarity biases in venture capitalists' evaluation of start-up teams. *Journal of Business Venturing* 21: 802–26. [CrossRef]

Franke, Nikolaus, Marc Gruber, Dietmar Harhoff, and Joachim Henkel. 2008. Venture Capitalists' Evaluations of Starts-Up Teams: Trade-Offs, Knock-Out Criteria, and the Impact of VC Experience. *Entrepreneurship Theory & Practice* 3: 802–26.

Fried, Vance H., and Robert D. Hisrich. 1994. Toward a Model of Venture Capital Investment Decision Making. *Financial Management* 3: 28–37. [CrossRef]

Gaglio, Connie M. 2004. The Role of Mental Simulations and Counterfactual Thinking in the Opportunity Identification Process. *Entrepreneurship Theory & Practice* 6: 533–52.

Gielnik, Michael M., Hannes Zacher, and Michael Frese. 2012. Focus on opportunities as a mediator of the relationship between business owners' age and venture growth. *Journal of Business Venturing* 1: 127–42. [CrossRef]

Gimeno, Javier, Timothy B. Folta, Arnold C. Cooper, and Carolyn Y. Woo. 1997. Survival of the Fittest? Entrepreneurial Human Capital and the Persistence of Underperforming Firms. *Administrative Science Quarterly* 4: 750–83. [CrossRef]

Glinka, Beata, and Tojo Thatchenkery. 2013. A comparative study of perceptions towards entrepreneurship in India, Poland and the USA. *Journal of Human Resources Development and Management* 13: 119–35. [CrossRef]

Gompers, Paul, and Joshua Lerner. 2001. The Venture Capital Revolution. *Journal of Economic Perspectives* 2: 145–68. [CrossRef]

Gompers, Paul, and Joshua Lerner. 2006. Equity Financing. In *Handbook of Entrepreneurship Research*. Edited by Zoltan J. Acs and David B. Audretsch. Boston: Springer, vol. 2, pp. 267–98.

Gompers, Paul. 1995. Optimal Investment, Monitoring, and the Staging of Venture Capital. *Journal of Finance* 5: 1461–89. [CrossRef]

Green, Paul E., and Vithala R. Rao. 1971. Conjoint Measurement for Quantifying Judgmental Data. *Journal of Marketing Research* 3: 355–63.

Guild, Paul D., and Jagdeep S. Bachher. 1996. Equity investment decisions for technology based ventures. *International Journal of Technology Management* 12: 787–95.

Haar, Nancy E., Jennifer Starr, and Ian C. MacMillan. 1988. Informal Risk Capital Investors: Investment Patterns in the East Coast of the USA. *Journal of Business Venturing* 1: 11–29. [CrossRef]

Hair, Joseph F., Jr., William C. Black, Barrry J. Babin, Rolph E. Anderson, and Ronald L. Tatham. 2006. *Multivariate Data Analysis*. Upper Saddle River: Pearson Prentice Hall.

Hall, John, and Charles W. Hofer. 1993. Venture Capitalists' Decision Criteria in New Venture Evaluation. *Journal of Business Venturing* 8: 25–42. [CrossRef]

Hauser, John R., and Vithala R. Rao. 2004. Conjoint Analysis, Related Modeling, and Applications. In *Marketing Research and Modeling: Progress and Prospects*. International Series in Quantitative Marketing. Edited by Wind Yoram and Paul E. Green. Boston: Springer, vol. 14, pp. 141–68.

Hege, Ulrich, Frederic Palomino, and Armin Schwienbacher. 2003. *Determinants of Venture Capital Performance: Europe and United States*. Working Paper. Paris: Paris HEC School of Management, vol. 1, pp. 1–43.

Hellman, Thomas, and Manju Puri. 2002. Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence. *The Journal of Finance* 57: 169–97. [CrossRef]

Hmielski, Keith M., and Robert A. Baron. 2009. Entrepreneurs' Optimism and New Venture Performance: A Social Cognitive Perspective. *Academy of Management Journal* 3: 473–88. [CrossRef]

Hsu, Dan K., Michael Haynie, Sharon A. Simmons, and Alexander McKelvie. 2014. What Matters, Matters Differently: A Conjoint Analysis of the Decision Policies of Angels and Venture Capital Investors. *Venture Capital* 1: 1–25. [CrossRef]

Huyghebaert, Nancy, and Sheila ODonohoe '. 2007. Does the value of venture capital vary over the investee life cycle? Evidence from Irish investees. In *Venture Capital in Europe*. Edited by Greg N. Gregoriou, Maher Kooli and Roman Kraeussl. Amsterdam: Elseviere, pp. 311–30.

Jackson, William E., Timothy Bates, and William Bradford W. 2012. Does Venture Capitalist Activism Improve Investment Performance? *Journal of Business Venturing* 27: 342–52. [CrossRef]

Jay, Janney J., and Gregory G. Dess. 2006. The risk concept for entrepreneurs reconsidered: New challenges to the conventional wisdom. *Journal of Business Venturing* 3: 385–400.

Jeng, Leslie A., and Philippe C. Wells. 2000. The Determinants of Venture Capital Funding: Evidence across Countries. *Journal of Corporate Finance* 6: 241–89. [CrossRef]

Jensen, Michael C., and William H. Meckling. 1976. The theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 4: 305–60. [CrossRef]

Kaplan, Steven N., and Per Stromberg. 2001. Venture Capitalists as Principals: Contracting. *American Economic Review* 2: 426–30. [CrossRef]

Kaplan, Steven N., and Per Stromberg. 2004. Characteristics, Contracts, and Actions: Evidence from Venture Capitalist Analyses. *The Journal of Finance* 5: 2177–210. [CrossRef]

Kaplan, Steven N., Berk S. Sensoy, and Per Stromberg. 2009. Should Investors Bet on the Jockey or the Horse? Evidence from the Evolution of Firms from Early Business Plans to Public Companies. *The Journal of Finance* 1: 75–115. [CrossRef]

Kirzner, Israel. 1973. *Competition and Entrepreneurship*. Chicago: Chicago University Press.

Klonowski, Darek. 2006. Venture Capitalists' Perspectives on Corporate Governance in Transition Economies. *Problems of Economic Transition* 8: 44–64.

Klonowski, Darek. 2007. The venture capital investment process in emerging markets. Evidence from Central and Eastern Europe. *International Journal of Emerging Markets* 4: 361–82. [CrossRef]

Knight, Frank. 1921. *Risk, Uncertainty and Profit*. Boston and New York: Houghton Miffin Company.

Krzysztofiak-Szopa, Julia, and Monika Wisłowska. 2019. *The Golden Book of Venture Capital in Poland 2019*. Warszawa: Startup Poland.

Leland, Hayne E., and David H. Pyle. 1977. Informational Asymmetries, Financial Structure, and Financial Intermediation. *The Journal of Finance* 2: 371–87. [CrossRef]

Leleux, Benoit, and Bernard Surlemont. 2003. Public versus private venture capital: Seeding or crowding out? A pan-European analysis. *Journal of Business Venturing* 18: 81–104. [CrossRef]

Li, Yong, and Shaker A. Zahra. 2012. Formal institutions, culture, and venture capital activity: A cross-country analysis. *Journal of Business Venturing* 27: 95–111. [CrossRef]

Lintner, John. 1965. The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *Review of Economics and Statistics* 1: 13–37. [CrossRef]

Lovas, Anita, Janos Pereczes, and Victoria Raba. 2015. Incentives and restrictions in venture capital contracts. *Financial and Economic Review* 3: 106–21.

Lu, Qing, Peter Hwang, and Clement K. Wang. 2006. Agency risk control through reprisal. *Journal of Business Venturing* 3: 369–84. [CrossRef]

MacMillan, Ian C., Robin Siegel, and Subba P. N. Narasimha. 1985. Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing* 1: 119–28. [CrossRef]

Manigart, Sophie, Audrey M. Korsgaard, Robert Folger, Harry J. Sapienza, and Katleen Baeyens. 2002. *The Impact of Trust on Private Equity Contracts*. Vlerick Leuven Gent Management School Working Papers Series 2002/1. Vlerick Leuven Gent: Gent Management School.

Markman, Gideon D., and Rober A. Baron. 2003. Person–entrepreneurship fir: Why some people are more successful as entrepreneurs than others. *Human Resource Management Review* 2: 281–301. [CrossRef]

Marshall, Alfred. 1890. *Principles of Economics*. London: Macmillan.

Mishra, Asim. 2004. Indian Venture Capitalists (Vcs): Investment Evaluation Criteria. *ICFAI Journal of Applied Finance* 10: 71–93.

Mitteness, Cheryl, Richard Sudek, and Melissa S. Cardon. 2012. Angel investor characteristics that determine whether perceived passion leads to higher evaluations of funding potential. *Journal of Business Venturing* 27: 592–606. [CrossRef]

Młokosiewicz, Marta, and Sandra Misiak-Kwit. 2017. The Impact of Trust on Entrepreneurship in Poland. *Journal of Entrepreneurship, Management and Innovation* 4: 79–96. [CrossRef]

Murdoch, Anna. 2009. How much culture is there in corruption? Some thoughts on transformation-cum-collective shock in post-communist Poland. *Journal of Intercultural Management* 1: 42–63.

Muzyka, Dan, Sue Birley, and Benoit Leleux. 1996. Trade-offs in the investment decisions of European Venture Capitalists. *Journal of Business Venturing* 11: 273–87. [CrossRef]

Narayanasamy, Cheedradevi, Athena Hashemoghli, and Rasidah Mohdi-Rashid. 2012. Venture Capital Pre-Investment Decision Making Process: An Exploratory Study in Malaysia. *Global Journal of Business Research* 5: 49–63.

Petty, Jeffrey S., and Marc Gruber. 2011. "In pursuit of the real deal". A longitudinal study of VC decision making. *Journal of Business Venturing* 16: 172–88. [CrossRef]

Puri, Manju, and Rebecca Zarutskie. 2012. On the Life Cycle Dynamics of Venture-Capital and Non-Venture-Capital-Financed Firms. *The Journal of Finance* 6: 2247–93. [CrossRef]

Ramon-Llorens, Camino M., and Gines Hernandez-Canovas. 2010. *Venture Capitalists in Spain: Cluster Analysis of Criteria Used in the Screening Process*. Working Papers. Serie EC 2010-08; Valencia: Instituto Valenciano de Investigaciones Econmicas, pp. 1–31.

Riquelme, Herman, and Tudor Rickards. 1992. Hybrid Conjoint Analysis: An Estimation Probe in New Venture Decisions. *Journal of Business Venturing* 7: 505–18. [CrossRef]

Rosenbusch, Nina, Jan Brinckmann, and Verena Muller. 2013. Does acquiring venture capital pay off for the funded firms? A meta-analysis on the relationship between venture capital investment and funded firm. *Journal of Business Venturing* 28: 335–53. [CrossRef]

Sapienza, Harry J. 1992. When Do Venture Capitalists Add Value? *Journal of Business Venturing* 1: 9–27. [CrossRef]

Sapienza, Harry J., and Anil K. Gupta. 1994. Impact of agency risks and task uncertainty on venture capitalisst-CEO interaction. *Academy of Management Journal* 6: 1618–32.

Sapienza, Harry J., and Audrey M. Korsgaard. 1996. Procedural Justice in Entrepreneur-Investor Relations. *Academy of Management Journal* 39: 544–74.

Sapienza, Harry J., Sophie Manigart, and Wim Vermeir. 1996. Venture capitalist governance and value added in four countries. *Journal of Business Venturing* 6: 439–69. [CrossRef]

Sarasvathy, Saras D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review* 2: 243–63. [CrossRef]

Say, Jean Baptiste. 1803. *A Treatise on Political Economy*. Philadelphia: Lippincott, Grambo & Co.

Schumpeter, Joseph. 1952. *Theorie der Wirtschaftlichen Entwicklung*. Berlin: Duncker und Humlot.

Shane, Scott, and Sankaran Venkataraman. 2000. The promise of entrepreneurship as a field of research. *Academy of Management Review* 1: 217–26. [CrossRef]

Shane, Scott, Nicos Nicolaou, Lynn Cherkas, and Tim Spector. 2010. Genetics, the Big Five, and the tendency to be self-employed. *Journal of Applied Psychology* 6: 1154–62. [CrossRef]

Sharpe, William F. 1964. Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance* 3: 425–42.

Shepherd, Dean A., and Andrew L. Zacharakis. 1999. Conjoint analysis: A new methodological approach for researching the decision policies of venture capitalists. *Venture Capital* 3: 197–217. [CrossRef]

Shepherd, Dean A., Richard Ettenson, and Andrew Crouch. 2000. New Venture Strategy and Profitability: A Venture Capitalist's Assessment. *Journal of Business Venturing* 5–6: 449–67. [CrossRef]

Silva, Jorge. 2004. Venture capitalist decision-making in small equity markets: A Case study using participant observation. *Venture Capital* 2/3: 125–45. [CrossRef]

Smart, Geoffey H. 1999. Management assessment methods in venture capital: An empirical analysis of human capital valuation. *Venture Capital* 1: 59–82. [CrossRef]

Smith, Adam. 1776. *Inquiry into the Nature and Causes of the Wealth of Nations*. London: Strahan and Cadell.

Stedler, Heinrich R., and Hans H. Peters. 2003. Business angels in Germany: An empirical study. *Venture Capital* 3: 269–76. [CrossRef]

Stiglitz, Joseph. 1975. The Theory of "Screening", Education, and the Distribution of Income. *American Economic Review* 3: 283–300.

Streletzki, Jan-Georg, and Reinhard Schulte. 2013. Which venture capital selection criteria distinguish high-flyer investments? *Venture Capital* 15: 29–52. [CrossRef]

Suchard, Jo-Ann A. 2009. The impact of venture capital backing on the corporate governance of Australian initial public offerings. *Journal of Banking & Finance* 4: 765–74.

Thornton, Patricia H., Domingo Ribeiro-Soriano, and David Urbano. 2011. Socio-cultural factors and entrepreneurial activity: An overview. *International Small Business Journal: Researching Entrepreneurship* 14: 105–18. [CrossRef]

Tyebjee, Tyzoon T., and Albert V. Bruno. 1984. A Model of Venture Capitalist Investment Activity. *Management Science* 30: 1051–66. [CrossRef]

Von Hayek, Friedrich A. 1945. The use of knowledge in society. *The American Economic Review* 35: 519–30.

Von Mises, Ludvig. 1949. *Human Action. A Treatise on Economics*. New York: Irvington-on-Hudson.

Warnick, Benjamin J., Charles Y. Murnieks, Jeffrey S. McMullen, and Wade T. Brooks. 2018. Passion for entrepreneurship or passion for the product? A conjoint analysis of angel and VC decision-making. *Journal of Business Venturing* 3: 315–32. [CrossRef]

Wasserman, Noam. 2003. Founder-CEO Succession and the Paradox of Entrepreneurial Success. *Organizational Science* 2: 149–72. [CrossRef]

Węcławski, Jerzy. 1997. *Venture Capital*. Warszawa: Wydawnictwo PWN.

Wells, William A. 1974. Venture Capital Decision Making. Ph.D. dissertation, Carnegie-Mellon University Pittsburg, Pittsburgh, PA, USA. Unpublished.

Wennekers, Sander, and Roy Thurik. 1999. Linking entrepreneurship and economic growth. *Small Business Economics* 13: 27–56. [CrossRef]

Wheeler, Robert E. 2012. Package AlgDesing. Algorithmic Experimental Design. Available online: http://cran.r-project.org/web/packages/AlgDesign (accessed on 15 May 2015).

Young, Michael N., Mike W. Peng, David Ahlstrom, Garry D. Bruton, and Yi Jiang. 2008. Corporate Governance in Emerging Economies: A Review of the Principal-Principal Perspective. *Journal of Management Studies* 45: 196–220. [CrossRef]

Zacharakis, Andrew L., and Dale G. Meyer. 1998. A lack of insight: Do venture capitalists really understand their own decision process? *Journal of Business Venturing* 1: 57–76. [CrossRef]