Early-Stage Investors' Criteria and New Venture Financial Performance: Are They Related?

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Abstract

In this study, we examine whether there is a relationship between the three key espoused criteria that early-stage investors use for evaluating new venture opportunities (the entrepreneurial team, the market potential and the product/service) and subsequent new venture performance. We test this with a sample of 55 new ventures that were evaluated by a group of angel investors during 2010-11, as they entered the business angel network evaluation process, and public financial information about these ventures that was collected in 2014. Our results suggest that investors' most common criteria for picking new venture opportunities, with the exception of founder team assessments, are not very predictive of future venture performance. Our study contributes to the long- standing debate on what are the critical dimensions that investors should pay attention to when evaluating opportunities and, more generally, to the under-researched topic of what drives early-stage investment performance, at least at the pre-investment and deal evaluation stages.

Keywords: early stage, business angels, venture capital, selection criteria, performance
JEL classification: G24, M13
EFM classification: 810, 800

1. Introduction

There has been considerable research, over the span of more than three decades, focusing on the criteria used by early-stage investors to decide whether a new venture is worth investing in. Although some (still ongoing) debates and controversies have emerged over the years as to what are the most important decision criteria for early-stage investors, we have nevertheless learned a great deal about the criteria that investors claim to *espouse* (Zacharakis & Shepherd, 2007). We know very little, however, on whether investors' espoused criteria for selecting investment opportunities matters for subsequent venture performance. In other words, there is little evidence that there is a relationship between what investors look for in a new venture opportunity and the likelihood that the new venture will succeed. Do ventures rated as more attractive by investors based on their selection criteria have a better chance of succeeding? Are investors' decision criteria during the evaluation process correlated to the actual subsequent performance of a new venture? These are important questions for both theory and practice, given that investors' evaluative judgments influence investment decisions and have thus a direct effect on the chances for a new venture of obtaining financing. Given the current lack of empirical evidence, it is possible that investors are basing their decisions on erroneous or irrelevant criteria. Furthermore, by addressing and empirically examining these questions, we shed some light on the performance

of early-stage investors in selecting their investment opportunities, a topic we hitherto underexplored in the literature.

In this study, we focus on the early-stage evaluative judgments of angel investors, and we examine whether there is a relationship between the three key evaluation criteria most often invoked by investors at the time they initially evaluate a new venture opportunity, and the subsequent performance of the new venture. Based on the insights we have drawn from extant literature we have identified the three following evaluation criteria as the most critical for early-stage investors at the time of evaluation: (1) the quality of the entrepreneur/entrepreneurial team (the founders), (2) the attractiveness of the market, and (3) the characteristics of the product or service in question. Given that these criteria are so widely accepted as being critical to predict the performance of the investment in question, we conclude that these three decision criteria are related to subsequent new venture performance. More specifically, we hypothesize that there is a positive relationship between the ratings of investors regarding these three dimensions of the opportunity (the quality of the founding team, the attractiveness of the market, and the characteristics of the product/service) and subsequent new venture performance.

We test our hypotheses on a sample of angel investors from one of the most established business angel networks in Europe. As part of the network's investment pipeline process, its members provided ratings regarding the quality of key aspects of the ventures (including the key aspects addressed in this study) as they initially assessed the ventures. We also have access to secondary data that comprises actual annual financial accounts, of the new ventures in question. This information has been extracted from the Amadeus database (Bureau Van Dijk), which includes the annual official accounts of around 19 million companies across Europe. We tested the relationship between investors' assessments of the key dimensions of the new ventures and sales (as proxy for performance, as profits is not a good proxy for startups) at a later time period, between one and two years on average. It is important to note that we measured investors' evaluations in real time, not retrospectively, and that we test the impact of their assessments it in a real-time situation. The latter is important because, contrary to what happens in many real-time methods for recording investors' evaluative judgments, which rely on a controlled decision environment that may differ from the naturally occurring decision context (such as in the studies using the conjoint analysis method), we test our hypotheses on real investors evaluating real investments in which they will or will not decide to have a stake in.

Our findings indicate that the management team is the only decision criterion that is marginally related to subsequent new venture performance. Neither assessments regarding the market nor the product seem to be related to performance. Clearly, our study has some key empirical limitations and our findings should be interpreted with prudence. That being said, our findings suggest that investors may be paying attention to evaluation criteria that may not be related to the performance of new ventures.

We contribute to the literature in several ways. First, we shed some light on the debate of what investors really look for in a new venture opportunity. Although we have learned a great deal about it over the years, the picture is still far from clear. We do so by showing the relationship between how investors assess the attractiveness of the new venture opportunity across three key dimensions and the subsequent performance of the new venture they evaluated. Our findings suggest that the team might be the most important of these dimensions. Second, we help advance our knowledge about what drives investor performance in terms of selection, a hitherto under-researched, but very important topic, in which we hope to spur future research.

2. Theory and Hypotheses

The investment decision process of angel investors

Most angel investment process models have been adapted from models that were originally developed in the field of formal venture capital (e.g. Fried & Hisrich, 1994; Tyebjee & Bruno, 1984). These angel investment process models usually consist of a number of discrete steps (typically five) that are often, but not always, explicitly identified. These steps are the following: deal origination, deal evaluation (which is a step that sometimes is divided into initial screening and detailed evaluation), negotiation and contracting, post-investment involvement and exit (Smith, Mason & Harrison, 2010). The key stage of the angel investment process from the perspective of this study is the *deal evaluation stage* because it is when angel investors form their initial evaluative judgments about the merits of a potential new venture opportunity that has successfully emerged from the deal origination stage. Many potential deals never go beyond the origination stage because they do not fit investors' basic criteria in terms of geographic location, size of investment or type of industry, among other factors. It is generally accepted that angel investors learn about opportunities through referrals from business associates (Riding, Madill & Haines, 2007), and increasingly through their participation in business angel networks or groups, in which deal flow information is shared among members (Kelly, 2007). These actors play thus an instrumental role in screening whether a potential opportunity fits the personal investment profile of a given business angel (such as geographic location, amount of fund sought, industry or sector) at the deal origination stage.

Provided that a given opportunity fits the investment profile of a business angel and that it was referred by a reliable source (in this case the network), it is likely that the business angel will then screen it at some level (usually not in great depth), often by attending an initial short presentation (Clark, 2008) and by reading an executive summary of the investment opportunity. Angels approach the initial screening stage with a negative mindset and looking for reasons to reject the opportunity (Smith et al., 2010). At this point, a decision to make the investment is very unlikely and there is a high probability that the opportunity will be rejected outright. In fact, research suggests that 70% of the rejections occur at first sight, i.e. after the first time that the investor takes a look at the opportunity (Riding et al., 2007). The aim of angel investors at this initial screening stage is merely to assess whether an opportunity has enough merit to justify further investment of time and resources in a more detailed evaluation that generally involves engaging in some form of due diligence (Smith et al., 2010). In this study, we focus on the key evaluative criteria that investors espouse during the deal evaluation stage. Specifically, at the point when investors first evaluate the opportunities as they enter the business angel network investment pipeline.

Early-stage investors' evaluation criteria

The study of early-stage investors' decision criteria goes back more than 30 years, to the origins of venture capital research itself (in the early days, venture capitalists were considered to be more early-stage investors than today). Although we have learned a good deal about venture capitalists' evaluative and decision processes as a result of three decades of research, the literature has arrived at somewhat contradictory conclusions about the relative importance of different sets of investment decision criteria and how they vary across contexts, suggesting that there might a high degree of heterogeneity across investors and situations in what appears to be an increasingly complex area of study.

Initially, research on venture capitalists' evaluation criteria focused on deriving lists of criteria and assessing their relative importance by asking venture capitalist themselves about their decision processes, usually via surveys or interviews (Zacharakis & Shepherd, 2007). This is how researchers derived the first sets of categories of investment criteria (often ranging from four to six) revolving around the entrepreneur or the entrepreneurial team, the market, the product, and financial considerations. The two better-known and influential sets of investment criteria from those early days include the following categories: market potential, management, competition and product feasibility (Tyebjee & Bruno, 1984), and the entrepreneur's personality, the entrepreneur's experience, characteristics of the product or service, characteristics of the market and financial considerations (MacMillan, Siegel & Narasimha, 1985; MacMillan, Zeman & Narasimha, 1987; Khan, 1987). Perhaps the most notable conclusion that was derived from this early wave of research was that the characteristics of the entrepreneur, or entrepreneurial team, constitute the most important set of investment decision criteria. MacMillan et al. (1985), for example, famously concluded that it was the "jockey" (the entrepreneur) who determined whether venture capitalists invested in a new venture, rather than the "horse" (the product), the "race (the market) or the "odds" (the risk). This conclusion, although it became deeply engrained in both research and practice to the point of becoming an axiom in venture capital investing (exemplified by the common adage "venture capitalists invest in A teams with B ideas rather than in B teams with A ideas"), has been challenged by more recent findings and still is at the center of the fundamental debate about what are the dominant sets of investment criteria (Khanin et al., 2008).

The problem with this first wave of research on venture capitalists' investment criteria is that, because it was based on survey and interview data, and thus derived from venture capitalists' own assessments, it was prone to post-hoc rationalization and recollection biases (Zacharakis & Shepherd, 2007). In other words, it reflected what venture capitalists' thought their investment criteria were (i.e., their "espoused" criteria), rather than the information they actually used to make decisions. In order to overcome these shortcomings, some researchers started applying "real time" methodologies, to try to capture the elements of the evaluation process in real time, as it is happening. The first of these methods to be applied was the verbal protocol analysis methodology (Hall & Hofer, 1993; Sandberg, Schweiger & Hofer, 1988), in which the participants "think aloud" as they review investment proposals. Three insights emerged from this first wave of verbal protocol studies, which spurred further research with "real time" methodologies. First, it became evident that venture capitalists evaluate investment proposals very rapidly. Hall & Hofer (1993), for instance, found that the venture capitalists in their sample made a decision in an average of less than six minutes on initial screening and less than 21 minutes on proposal assessment. Second, the findings suggested that venture capitalists may not be very good at understanding, or at least introspecting, about their own decision processes, a finding that was repeatedly replicated in subsequent research using other "real time" methods (e.g. Shepherd, 1999; Zacharakis & Meyer, 1998). Third, the findings seemed to contradict prior studies suggesting that the entrepreneur or entrepreneurial team was the most important factor in venture capitalists' investment decision criteria, as researchers reported a "surprising" lack of importance of entrepreneur-related criteria throughout the decision process (Hall & Hofer, 1993). Some researchers, however, questioned the subjectivity of the interpretation involved in the verbal protocol analysis, suggesting that verbal protocol analysis is "more an art than a science" and advocating a move to experimental methods like conjoint analysis (Riquelme & Rickards, 1992).

Indeed, the next wave of research on venture capitalists' investment criteria examined the decision processes of venture capitalists in real time using conjoint analysis (Shepherd, 1999; Shepherd & Zacharakis, 1999) and similar decision policy-capturing methodologies (Zacharakis &

Meyer, 1998). The conjoint analysis technique, which was pioneered in the use for researching venture capitalists' investment decisions by Muyzka, Birley & Leleux (1996), involves investors to make judgments based on a set of attributes from which the underlying structure of their cognitive system can be investigated by decomposing their evaluations into a multi-linear equation that separates the weights of each attribute (Shepherd, 1999). Using conjoint analysis, "the attributes that were significantly used in the judgment, how those attributes were used, and the relative importance of each attribute in the judgment can be determined" (Shepherd & Zacharakis, 1999: 207). Studies using conjoint analysis support the findings of verbal protocol research, providing further evidence that venture capitalists may not fully understand their own investment decision processes and that the importance the entrepreneur's characteristics as investment criteria may have been overstated by prior research (Zacharakis & Shepherd, 2007).

While recognizing the methodological advantages of studies designed to analyze decision processes in real time, these methods are not without some limitations of their own. In the case of experiment-like methodologies, such as conjoint analysis, a serious limitation is that researchers provide a controlled decision environment that may differ from the naturally occurring decision context, thus threatening the external validity of the results (Petty & Gruber, 2011). It is also possible that, given the intuitive nature of venture capitalists' investment decisions (Hisrich & Jankowicz, 1990), a set of pre-established criteria into which the decision is decomposed may not capture all, or even the main, elements of the decision. Additionally, it is possible that the contradictory findings regarding the relative importance of different decision criteria, and especially the importance of the entrepreneur or the entrepreneurial team, may reflect differences in the stage of the evaluation process, differences in the stage of the venture opportunity under consideration, or differences in the life-stage of the venture fund, rather than fundamental differences across the board. Although research on how investment criteria change depending on the stage of the evaluation process is sparse (Petty & Gruber, 2011), there is some evidence suggesting that that venture capitalists' evaluation criteria change across the stages of the evaluation process (Zacharakis & Meyer, 1998; Zacharakis & Meyer, 1995). Zacharakis & Meyer (1998; 1995) show that venture capitalists emphasize characteristics of the entrepreneur or the entrepreneurial team, such as managerial competence and dedication, in the early stages of their evaluation process, to make sure that the entrepreneurs meet the minimum qualifications during the screening stage, switching their attention to features of the market and the competition at later stages of the due diligence process. Other studies, however, have arrived to the opposite conclusion, suggesting that venture capitalists initially pay attention to market criteria and then move on to management team considerations (Fried & Hisrich, 1994). Petty & Gruber (2011), in what constitutes the only longitudinal investigation of venture capitalists' decision making, examined the decisions of two venture capital funds over a period of 11 years and concluded that the venture's capitalists' decision criteria vary over time. They found that the reasons for rejecting a proposal in the early stages of the venture fund are not the same as the reasons for rejection later on in the life of the venture fund. Furthermore, they found that during the first 6 months of the evaluation process, product characteristics were among the top reasons for rejection, whereas criteria related to financial valuation and deal structure were the top rejection reasons in latter stages. Interestingly, the quality of the management team was not a primary criterion for rejection at any phase of the evaluation process (Petty & Gruber, 2011). To add to the confusion, there is some evidence suggesting that venture capitalists do not use different evaluation criteria depending on the stage of development of the venture under consideration (Carter & Van Auken, 1994), although it is known that investors face different types of risk and have different concerns in early and later stage deals (Parhankangas, 2007). In any case, it is clear that these inconclusive and even contradictory results contribute to fuel the central debate about the relative importance of entrepreneur vs. product/market considerations, and justify a call for further research into the topic

of what criteria matter most at what stage of deal and venture development. Under what conditions is the jockey, the race, the horse, the odds, or something else that matters most?

What criteria do angel investors, specifically, use to evaluate potential investment options during this initial screening stage? The literature on business angels' investment criteria, similarly, can generally be divided into three categories of studies. First, there are studies that retrospectively ask investors about the evaluation criteria they used in a given investment decision or set of decisions, usually via survey (Mason & Harrison, 2002). The problem with this type of studies, as mentioned above, besides common recollection and post-hoc rationalization biases, is that it is hard to determine which criteria came into play at which stage of the investment decision process (Smith et al., 2010). Second, there are case studies that examine in depth a given investment decision, or set of investment decisions, for example with qualitative data collected via phone interviews with business angels (Mason & Harrison, 1996). The problem with this type of studies, besides the common difficulty of generalizing from single cases, is that they also suffer from the potential of recollection and post-hoc rationalization biases, including the potential for confounding decision criteria across different stages of the investment process. Third, there are studies that have attempted to circumvent the problems of the retrospective approach by gathering information about the decision process in real time, for example via verbal protocols or conjoint analysis, or by observing how angel investors react to the initial presentations of entrepreneurs (Clark, 2008; Mason & Harrison, 2003). This type of studies offer insights into the different components of the decision process, such as evaluation criteria, in real time, thus largely avoiding problems associated with recollection bias. They also offer the opportunity to focus on what happens at a given stage in the angel investment process.

All in all, the findings in the literature on both venture capitalists and business angels are quite consistent across studies and suggest that the three most important factors for early-stage investors in evaluating a potential opportunity at the initial screening stage are (1) the entrepreneur, or entrepreneurial team, (2) the market potential for the opportunity and, while less significant, (3) the product/service offered is also mentioned extensively in the literature (Smith et al., 2010). These are quite relevant findings, considering that a substantial number of other factors that could also plausibly constitute a set of relevant investment decision criteria have also been proposed and have not been found to have the same degree of importance. Although the literature differs on the relative importance of each of these elements, at least at the initial evaluation stage, what seems to determine the attractiveness of a given investment opportunity can, to a large extent, be explicated by three broad categories of criteria: mainly the "qualities" of the people involved in the firm and the "potential" of the market opportunity (Mason & Harrison, 1996). Additionally, there is enough evidence to make a case for how investors assess the quality of the product/service being offered by the new venture.

Although most of this literature is focused on what investors are looking for in a new venture opportunity at the pre-investment stage, and not on how these criteria later map with the actual outcome of the investment, we have to conclude that investors are not acting irrationally and that there is a relationship between these criteria and subsequent new venture performance. Indeed, even disregarding that three decades of research in investors' decision making support this line of reasoning, it is only common sense to conclude that if, on average, an opportunity is deemed to have a superior founder team, an attractive potential market and a highly rated product or service; it is more likely that this opportunity will result in a successful new venture. For these reasons, we hypothesize the following relationships:

H1: Investors' ratings of the quality of the entrepreneurial team are positively related to subsequent venture performance

H2: Investors' ratings of the quality of the market potential are positively related to subsequent venture performance

H3: Investors' ratings of the product/service offering are positively related to subsequent venture performance

3. Methodology

To test our hypotheses, we collected data at two different points in time. The first was when investors made their evaluative judgments on a specific venture based on the entrepreneurial team, the potential of the market and the interest of the product/service offering. To do these evaluative judgments, the business angels had access, through the BAN, to the executive summary of the firm, which included information regarding these key criteria plus other information regarding the key terms of the deal offered in the current round.

It is important to note that, unlike information collected in real-time experiments, where investors are asked to evaluate a deal, and therefore not only they are aware that they are being observed, but also these evaluations occur in a controlled, fictitious environment, we collected data from a real life situation. This was business as usual for the early stage investors that are part of the network, and they might, or not, end up investing in the firms that they were rating. The information was initially collected by the management of the BAN to have an indication of the interest that the different startups had within its community of early stage investors, and not for the purpose of this research. This means that there is no recollection bias on the real-world information reported to the network.

Second, we observe the evolution of the ventures in the years following their application to the BAN. This information is not based on a survey asking the companies or the investors how are they performing. We use actual financial information, which is therefore objective and that takes place in a later moment in time.

Sample and data collection

Data was collected from two independent databases. The first database is proprietary and belongs to one of the most active business angels' networks (BAN) in Europe. This BAN has 146 members, of which around 70 (48%) are very active and 74% of those have invested in at least one startup. This compares with an average size of European networks of 79 members of which 42% are active (EBAN, 2010). The network started its activities in 2006 and has been since then growing both in the number of startups looking for funding, as well as in the number of business angels associated to the network. Regarding the number of startups looking for financing, from November 2006 to September 2013, the BAN accepted 1,080 companies. Accepted means that the company is suitable for angel financing. There is a preliminary screening done by the BAN's manager. Not all entrepreneurial projects that apply to the network get in, as in some cases there is only an idea or the proposal is clearly not a deal for this type of financing.

The second database is the Amadeus database (Bureau Van Dijk) that includes the annual official accounts of around 19 million companies across Europe. The process of matching the two

databases is long and challenging, as in many cases the name reported in the BAN database is not the legal denomination of the firm, or it is not even the commercial name of the company. This is the case for ventures that are still proving the concept or developing a prototype. Therefore, the matching was run in several steps: First, we looked for the companies using the same name that appears in the BAN database. Second, for those companies that could not be found by name alone, we searched online for their legal names. Third, for those that we still could not find, we searched for the entrepreneurs' current information through Google or LinkedIn, to find out clues for whether the company still exists and under which denomination.

Our initial sample of 1,080 companies was significantly reduced due to the lack of some key data. In fact, the BAN went through some important changes in June 2010, as they moved from a manual database, using MS Word documents that entrepreneurs were asked to fill, to a business angels' database software. The new software, AngelSoft[1], makes the information always easily available and, importantly not only for the BAN but also for this research, it gives business angels immediate access to the information. Business angels have had the option to access the database prior to attending investment presentations to review the venture's information since June 2010. As the investors review the projects, they are asked to rate them according to the quality of the entrepreneurial team, the market potential, and the attractiveness of the product and service offering. They also rate the terms of the deal which, at this stage, means only the amount of capital that the company is seeking, the money already invested in the company and the pre-money valuation. Our initial sample was thus reduced to those companies that applied to the BAN starting in June 2010, the time from which the evaluation ratings were easily available. From this time until September 2013, when we stopped our angel ratings data collection, the number of companies that went through the network was 920 (i.e. the 160 companies that were processed by the network between November 2006 and May 2010 were dropped from our sample). Additionally, as we needed historical financial information, we had to drop all companies that were raising funds in 2012 and 2013, as there would not have been enough of a time gap. After dropping the 2012 and 2013 companies, the sample was comprised of 270 companies. Table 1 presents the number of these companies by year and by sector, to give an idea of the types of companies that went through the BAN. As can be observed, half of them 50%, are ITC companies. The other 4 categories are very similar in number of companies, being biotech, healthcare and medical devices the second group with 14%. Although our final sample was reduced due to missing data, we provide information of all companies to give a more representative picture of the companies going through the BAN.

Table 1
Number of companies by sector and year they applied to the BAN

	2010		2011		TOTAL	
SECTOR	**NUM.**	**%**	**NUM.**	**%**	**NUM.**	**%**
ITC	41	56.2	95	48.2	136	50.4
Bio, Health and Medcare	6	8.2	31	15.7	37	13.7
Cleantech and Energy	7	9.6	27	13.7	34	12.6
Industry and Consumer	11	15.1	21	10.7	32	11.9
Other	8	10.9	23	11.7	31	11.5
TOTAL	73	100.0	197	100.0	270	100.0

[1] Currently known as GUST

Regarding the process, it starts when a startup applies for a specific Investors' Forum (in which they have to present to the angel investors). Entrepreneurs must apply at least two weeks prior to the Forum. This particular BAN holds about 6 forums per year. One week before each Forum, 10 to 12 ventures are shortlisted and invited to present in front of the Investment Committee. Of these, on average, only six of them are invited to share their investment proposal at the investors' Forum. From the total, 35% made it to the Forum. Most of them, around 50%, were only available to potential investors through the BA software. Since 2011, a new investment Forum format was launched, the "ITC Breakfast," as an increasing number of internet companies were applying to the BAN and a significant group of BAs were interested only in this type of ventures. Of the total, 5% presented to investors in this new format. Table 2 shows the status of the companies that were accepted by the BAN in 2010 and 2011.

Table 2
Number of companies by level of progress, year they applied to BAN, total and still alive

LEVEL OF PROGRESS WITHIN THE BAN	**2010**		**2011**		**TOTAL**	
	TOTAL (N)	***STILL ALIVE (%)***	**TOTAL (N)**	***STILL ALIVE (%)***	**TOTAL (N)**	***STILL ALIVE (%)***
Investment Committe	10	*70.0*	20	*60.0*	30	*63.3*
Investors' Forum	22	*86.4*	72	*61.1*	94	*67,0*
Only BA Software	41	*34.1*	91	*33.0*	132	*33.3*
ITC Breakfast	N/A	*N/A*	14	*35.7*	14	*35.7*
TOTAL	73	*54.8*	197	*46.2*	270	*48.5*

It is important to note that our database is comprised of all companies that applied and were accepted to the BAN. That means that the database does not suffer from survivor bias. Of the 270 companies in the sample before accounting for missing data, 131 were still in business at the end of 2013. That means that the failure rate of the sample is 51%. We consider "in business" those ventures that are reporting financial information, even if the financial information is not positive (see Table 2). Additionally, Table 3 shows the number of companies according to the stage that the venture was at the time of applying to the BAN, also differentiating those still alive. It is interesting to note that most of the companies have their product ready to market, 34%, but still not selling. Around one in four has its prototype, and 22% already have some sales. It is also interesting to note that for those companies that were in the concept stage, only 1 in 10 is alive, and the percentage of success increases with each stage, as 50% of the companies with product ready survived and more than 75% of those are already selling.

Table 3
Number of companies by stage, total and still alive; 2010-2011

COMPANY STAGE	TOTAL No. Cos	TOTAL %	STILL ALIVE No. Cos	STILL ALIVE %	SUCCESS %
Concept Only	16	5.9	2	1.5	12.5
Prototype Ready	54	20.0	20	15.3	37.0
Product in Development	39	14.4	15	11.5	38.5
Full Product Ready	92	34.1	46	35.1	50.0
Sales up to €500K	35	13.0	25	19.1	71.4
Sales from €500K to less 1 million	16	5.9	14	10.7	87.5
Sales €1 million or more	8	3.0	6	4.6	75.0
Not Available	10	3.7	3	2.3	30.0
TOTAL	270	100	131	100	48.5

Table 4 reports descriptive statistics for the dependent, independent and control variables of the companies in the final sample. These are: sales in the latest available year, rating for entrepreneurial team, market, product/service and age of the company. The sales for the most recent year are on average 364,000 euros, but there is a large standard deviation, with the median sales reaching only 48,000 euros. Regarding the ratings they have similar values for the three independent variables, although the mean for market is higher than for the other two variables. The average age at the time of applying for funds was around three years.

Table 4
Key statistics of the sample

STATS	**SALES**	**TEAM**	**MARKET**	**PROD/SERV**	**AGE**
Measure	000 €	Rating	Rating	Rating	Years
Obs.	*55*	*55*	*55*	*55*	*55*
Mean	364.2	3.27	3.33	3.11	5.1
Median	48.1	3.00	3.25	3.20	5.0
SD	733.2	0.72	0.78	0.85	3.4
Min	0	1.00	1.33	1.00	1.0
Max	3,568	5.00	5.00	5.00	15.0

Dependent variable

We use sales as a proxy for measure of venture performance for the companies of the sample. Table 5 reports the statistics by sector (sample before accounting for missing data) for sales at time zero, the year when the venture applied to the BAN, and for the latest available year of financial accounts. Average sales on the year of application is 78,000 euros and for the latest available year 107,000 euros. Sales data were collected directly from the Amadeus database and constitute official records.

Table 5
Sales by sector, statistics for application year and latest available year

SALES	ITC		BIO, HEALTH, MED		CLEANTECH & EN.		INDUSTRY & CONS.		OTHER		TOTAL	
000 Euro	Year 0	Latest Y.	Year 0	Latest Y.	Year 0	Latest Y.	Year 0	Latest Y.	Year 0	Latest Y.	Year 0	Latest Y.
Mean	50.2	79.5	94.17	86.2	137.7	137.3	126.2	229.7	68.8	95.8	78.4	107.4
Median	0	0	0	0	0	0	0	0	0	0	0	0
SD	126.5	263.7	313.1	311.9	359.0	391.7	444.3	700.9	313.1	446.5	267.9	384.7
Max.	791.7	2,166.2	1,751.3	1,807.9	1,759.5	2,028.2	2,458.5	3,568.4	1,749.3	2,495.3	2,458.5	3,568.4

Independent variables

We measure three types of independent variables: (1) how angel investors assess the quality of the *entrepreneurial team*, (2) the attractiveness of the *market*, and (3) the quality of the *product* or *service* offered. These variables are measured using the rating that investors give to the companies once they have been accepted into the BA software. Each investor that is a member of the BAN has a username to access all the confidential information provided by the entrepreneurs. They access the database and review the executive summary of the company, which is done following an online format. Then they rate each of these three elements. The measure is a likert-type scale ranging from 1 (lowest) to 5 (highest) points. The higher the average of each individual variable, the higher the likelihood that the startup is invited to the Investment Committee and therefore the higher the chance that is presenting in front of the investors. For those companies that are not attractive, investors seem to prefer not to vote instead of giving a lower rating. Out of the 270 companies of the sample, only 57 ventures received ratings, being the remaining 213 companies without rating or "not interested in" rating. Table 4 summarizes the key statistics for the three independent variables. The analysis by sector shows no significant differences between them.

Statistical procedure

The hypothesized model was estimated using a linear regression for the dependent variable, sales in the latest available year, and the three independent variables, entrepreneurial team, market and product/service, and controlling for the age and sector of the venture.

4. Results

Table 6 reports the results of the regression using sales as dependent variable, investor ratings about the entrepreneurial team, the market and the product/service as independent variables, and the age of the venture and the sector in which the venture operates as controls. The results show moderate support for H1, i.e. that there is a positive relationship between entrepreneurial team ratings and subsequent sales of the venture (β=287.18, p=.099). Results show no support for H2 and H3, i.e. there is no evidence of a positive relationship between market potential and product/service ratings and subsequent venture performance. Regarding the control variables, our results show that the sector in which the venture operates is moderately significant (β=112.25, p=.093), whereas the age of the venture is not.

Table 6
Linear regression

Source	SS	df	MS		
Model	3767378.84	5	753475.769	Number of obs =	55
Residual	25260916.9	49	515528.917	F(5, 49) =	1.46
				Prob > F =	0.2195
Total	29028295.8	54	537561.033	R-squared =	0.1298
				Adj R-squared =	0.0410
				Root MSE =	718

sales	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
mteam	287.1795	170.8238	1.68	0.099	-56.10388	630.4628
market	13.77773	155.2127	0.09	0.930	-298.1339	325.6893
prodserv	7.343654	147.317	0.05	0.960	-288.7009	303.3882
age	16.16399	30.27155	0.53	0.596	-44.66897	76.99695
sect_sum	112.245	65.45017	1.71	0.093	-19.28206	243.772
_cons	-988.105	597.4497	-1.65	0.105	-2188.725	212.5151

5. Discussion

In this study, we set out to examine the relationship between early-stage investors espoused decision criteria for evaluating new venture opportunities and the subsequent performance of those new ventures. In other words, we were interested in learning whether the key dimensions that investors evaluate in a new venture predict the success of the investment. Based on more than three decades of literature on investors' espoused criteria for evaluating opportunities, we identified the three key evaluation criteria (team, market and product) and we argued that these important aspects of a new venture have a positive relationship with the success of the new venture. We tested these ideas by empirically examining whether the average ratings of a network of business angels along these three dimensions were related to the performance of the new ventures at a later time. Our findings indicate that the three key criteria espoused by investors when evaluating opportunities are not strongly related to at least one measure of performance (in this case sales) at a later stage. We found that only the evaluative judgments about the team seem to be related to subsequent new venture performance.

The key implication of our findings is that investors' key espoused criteria in evaluating opportunities may not be very effective in predicting the future performance of new ventures, and thus the performance of the investment. This idea may help partly explain why investors, when they actually evaluate opportunities, do not follow so much their espoused criteria, but rather invoke the notion of "gut feel." Research has shown that investors do not actually understand very well their decision processes and that they may invoke espoused decision criteria as a rationalization to justify what in essence is a very intuitive process (Zacharakis & Shepherd,

2007). It may be the case that they themselves are aware that these decision criteria only provide marginal power in terms of predicting the future of a new venture opportunity.

Another implication of our findings is that evaluations about the entrepreneurial team, as predictively weak as it may be, seems to be the only espoused investment criteria that is associated with venture performance. Thus, despite the weak effect and the empirical limitations of the study, we contribute to the debate on whether it is the characteristics of the founder team that constitutes the most important set of investment decision criteria, i.e. "the jockey," rather than the "horse" (the product), the "race (the market) (MacMillan et al., 1985). This is an interesting implication, as it provides some fuel to the early contention in the debate that the entrepreneurial team is the most important aspect of a new venture. Later studies using more sophisticated methods (real time decisions) had cast some doubt as to the validity of those early findings. Additionally, we provide some insights about what it is that determines the performance of angel investors, at least at the deal evaluation stage, an under-researched topic that needs further examination.

This study suffers from a number of limitations, especially as longitudinal financial data is so hard to obtain for early-stage companies, even in countries where those databases exist. Additionally, due to the change in the BAN's administrative software, we could only access information about ratings that took place after 2010. For this reason, we lost a lot of the companies that were in our original sample. In addition, the temporal gap between investors' evaluative judgments and the financial measures of performance, which ranges between one and two years, may not be enough time to observe the process as it unfolds, and it may provide only some early indications. Despite these limitations, we contend that our study contributes to the current state of the literature on early-stage investors' evaluative judgments with some interesting insights that warrant future research.

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